UNIPLAST cod.57021002

Data di stampa: 03/07/2018 Pag. 1 di 19 Versione: 12/IT Data di revisione: 13/02/2017

## SECTION 1. Identification of the substance/mixture and of the company/undertaking.

1.1. Product identifier.

57021002 Code: **UNIPLAST** Product name.

Chemical name and synonym. **POLYURETHANE ADHESIVE** 

1.2. Relevant identified uses of the substance or mixture and uses advised against.

Intended use POLYURETHANE ADHESIVE

Uses advised against

This product is not recommended for all those industrial, professional or consumer uses not specifically identified on the label.

1.3. Details of the supplier of the safety data sheet.

SARATOGA INT. SFORZA SPA Name.

Full address. Via Edison 76

District and Country. 20090 Trezzano s/Naviglio (MI)

**ITALIA** 

Tel. 0039-02 445731 Fax. 0039-02 4452742

e-mail address of the competent person.

responsible for the Safety Data Sheet. trading@saratogasforza.com Product distribution by: SARATOGA INT. SFORZA SPA

1.4. Emergency telephone number.

For urgent inquiries refer to.

CAV - Ospedale Pediatrico "Bambino Gesù" - Roma - Tel. +39 06 68593726 (h24) CAV - Azienda Ospedaliero-Universitaria Foggia - Foggia - Tel. +39 0881 732326 (h24) CAV - Azienda Ospedaliera "A. Cardarelli" - Napoli - Tel. +39 081 7472870 (h24)

CAV - Policlinico "Umberto I" - Roma - Tel. +39 06 4450618 (h24) CAV - Policlinico "A. Gemelli" - Roma - Tel. +39 06 3054343 (h24)

CAV - Az. Osp. "Careggi" U.O. Tossicol. Medica - Firenze - Tel. +39 055 7947819(h24) CAV - Centro Naz. di Informazione Tossicologica - Pavia - Tel. +39 0382 24444 (h24) CAV - Ospedale "Niguarda Ca' Granda" - Milano - Tel. +39 02 66101029 (h24) CAV - Azienda Osp. "Papa Giovanni XXIII" - Bergamo - Tel. +39 800 883300 (h24)

## **SECTION 2. Hazards identification.**

## 2.1. Classification of the substance or mixture.

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flammable liquid, category 2 H225 Highly flammable liquid and vapour. Eye irritation, category 2 H319 Causes serious eye irritation.

Specific target organ toxicity - single exposure, category 3 H336 May cause drowsiness or dizziness.

**UNIPLAST** cod.57021002

Data di stampa: 03/07/2018 Pag. 2 di 19 Versione: 12/IT Data di revisione: 13/02/2017

#### 2.2. Label elements.

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

### Hazard pictograms:





Signal words: Danger

#### Hazard statements:

H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

#### Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources — No smoking.

P233 Keep container tightly closed. P261 Avoid breathing vapours.

P264 Wash hands thoroughly after handling. P271 Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection. P280

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+p351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue

Call a POISON CENTER or doctor/physician if you feel unwell. P312

P337+P313 If eye irritation persists: Get medical advice/attention.

P501 Dispose of contents/container to authorized collection centers.

### Contains:

**ACETONE** 

ETHYL ACETATE

METHYL ETHYL KETONE

### 2.3. Other hazards.

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

## SECTION 3. Composition/information on ingredients.

UNIPLAST cod.57021002

Data di stampa: 03/07/2018 Pag. 3 di 19 Versione: 12/IT Data di revisione: 13/02/2017

3.2. Mixtures.

Contains:

The full wording of hazard (H) phrases is given in section 16 of the sheet. Identification.

Classification 1272/2008 (CLP).

**ETHYL ACETATE** 

Flam. Liq. 2 H225, Eye Irrit. CAS. 141-78-6  $10 \le x < 20$ 

2 H319, STOT SE 3 H336,

EUH066

EC. 205-500-4

INDEX. 607-022-00-5

Reg. no. 01-2119475103-46

**ACETONE** 

Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, CAS. 67-64-1  $30 \le x < 60$ 

EUH066

EC. 200-662-2

INDEX. 606-001-00-8

Reg. no. 01-2119471330-49

**METILETILCHETONE** 

CAS. 78-93-3 5 ≤ x < 10 Flam. Liq. 2 H225, Eye Irrit.

2 H319, STOT SE 3 H336,

EUH066

EC. 201-159-0 INDEX. 606-002-00-3 Reg. no. 01-2119457290-43

**SECTION 4. First aid measures.** 

UNIPLAST cod.57021002 Versione: 12/ IT

Data di stampa: 03/07/2018 Pag. 4 di 19 Data di revisione: 13/02/2017

#### 4.1. Description of first aid measures.

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

#### 4.2. Most important symptoms and effects, both acute and delayed.

Specific information on symptoms and effects caused by the product are unknown. For symptoms and effects caused by the contained substances, see chap. 11.

### 4.3. Indication of any immediate medical attention and special treatment needed.

Information not available.

## **SECTION 5. Firefighting measures.**

### 5.1. Extinguishing media.

## SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

#### 5.2. Special hazards arising from the substance or mixture.

### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

#### 5.3. Advice for firefighters.

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures.

#### 6.1. Personal precautions, protective equipment and emergency procedures.

UNIPLAST cod.57021002

Data di stampa: 03/07/2018 Versione: 12/ IT Pag. 5 di 19 Data di revisione: 13/02/2017

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

#### 6.2. Environmental precautions.

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

#### 6.3. Methods and material for containment and cleaning up.

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

#### 6.4. Reference to other sections.

Any information on personal protection and disposal is given in sections 8 and 13.

## **SECTION 7. Handling and storage.**

#### 7.1. Precautions for safe handling.

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Vapours may catch fire and an explosion may occur; vapour accumulation is therefore to be avoided by leaving windows and doors open and ensuring good cross ventilation. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

#### 7.2. Conditions for safe storage, including any incompatibilities.

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

### 7.3. Specific end use(s).

See attached scenarios.

## **SECTION 8. Exposure controls/personal protection.**

### 8.1. Control parameters.

Regulatory References:

UNIPLAST cod.57021002

Data di stampa: 03/07/2018 Data di revisione: 13/02/2017 Versione: 12/IT Pag. 6 di 19

CZE	Česká Republika	Nařízení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
HRV	Hrvatska	NN13/09 - Ministarstvo gospodarstva, rada i poduzetništva
HUN	Magyarország	50/2011. (XII. 22.) NGM rendelet a munkahelyek kémiai biztonságáról
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 16 grudnia 2011r
EU	OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
	TLV-ACGIH	ACGIH 2016

ETHYL ACETATE					
Threshold Limit Value. Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
TLV	CZE	700		900	
AGW	DEU	1500	400	3000	800
MAK	DEU	1500	400	3000	800
VLA	ESP	1460	400		
VLEP	FRA	1400	400		
WEL	GBR		200		400
GVI	HRV		200		400

UNIPLAST

cod.57021002 Versione: 12/ IT Data di stampa: 03/07/2018 Data di revisione: 13/02/2017 Pag. 7 di 19

AK	HUN	1400		1400				
NDS	POL	200		600				
TLV-ACGIH		1441	400					
Predicted no-effect concentration	- PNEC.							
Normal value in fresh water Normal value in marine water Normal value for fresh water sedi Normal value for marine water se Normal value of STP microorgani Normal value for the food chain (s Normal value for the terrestrial co	diment sms secondary poisonii mpartment			0,24 0,02 1,15 0,115 650 0,2 0,148		mg/l mg/l mg/kg mg/l g/kg mg/kg	n/d	
nealth - Derived no-effect is	Effects on	WIEL			Effects on			
Route of exposure	consumers. Acute local	Acute systemic	Chronic local	Chronic systemic	workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.				4,5 mg/kg bw/d		- <b>,</b>		
Inhalation. Skin.	734 mg/m3	734 mg/m3	367 mg/m3	367 mg/m3 37 mg/kg bw/d	1468 mg/m3	1468 mg/m3	734 mg/m3	734 mg/kg 63 mg/kg bw/d
ACETONE								
Threshold Limit Value. Type	Country	TWA/8h		STEL/15min				
	·	mg/m3	ppm	mg/m3	ppm			
TLV	CZE	800		1500				
AGW	DEU	1200	500	2400	1000			
MAK	DEU	1200	500	2400	1000			
VLA	ESP	1210	500					
VLEP	FRA	1210	500	2420	1000			
WEL	GBR	1210	500	3620	1500			
GVI	HRV	1210	500					
AK	HUN	1210		2420				
VLEP	ITA	1210	500					
NDS	POL	600		1800				
OEL	EU	1210	500					
TLV-ACGIH		1187	500	1781	750			
Predicted no-effect concentration	- PNEC.							
Normal value in fresh water Normal value in marine water Normal value for fresh water sedi Normal value for marine water se Normal value of STP microorgani Normal value for the terrestrial co Health - Derived no-effect I	diment sms mpartment	MFI		10,6 21 30,4 3,04 100 33,3		mg/l mg/l mg/kg mg/kg mg/l mg/kg	i	
rieditii - Derived no-eriect i	Effects on consumers.	WILL			Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.				62 mg/kg				
Inhalation.				200 mg/m3		2420 mg/m3		1210 mg/m3
Skin.				62 mg/kg				186 mg/kg
METILETILCHETONE								
Threshold Limit Value.	Country	TWA/8h		STEL/15min				
Type	Country		nnm		nnm			
		mg/m3	ppm	mg/m3	ppm			

UNIPLAST cod.57021002 Versione: 12/ IT

Pag. 8 di 19

Data di stampa: 03/07/2018 Data di revisione: 13/02/2017

TLV	CZE	600		900				
AGW	DEU	600	200	600	200	PELLE		
MAK	DEU	600	200	600	200	PELLE		
VLA	ESP	600	200	900	300			
VLEP	FRA	600	200	900	300	PELLE		
WEL	GBR	600	200	899	300	PELLE		
GVI	HRV	600	200	900	300	PELLE		
AK	HUN	600		900				
VLEP	ITA	600	200	900	300			
NDS	POL	450		900				
OEL	EU	600	200	900	300			
TLV-ACGIH		590	200	885	300			
Predicted no-effect concer	ntration - PNEC.							
Normal value in fresh wate Normal value for fresh wat Normal value for marine w Normal value of STP micro Normal value for the terres	ter sediment vater sediment porganisms strial compartment			55,8 284,74 284,74 709 22,5		mg/l mg/kg mg/kg mg/l mg/kg	İ	
Health - Derived no-e		OMEL			<b>-</b> "			
	Effects on consumers.				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.				31 mg/kg				
Inhalation.				106 mg/m3				600 mg/m3
Skin.				412 mg/kg				1161 mg/kg

Legend:

(C) = CEILING; INHAL = Inhalable Fraction; RESP = Respirable Fraction; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

TLV of solvent mixture: 1094 mg/m3.

### 8.2. Exposure controls.

UNIPLAST cod.57021002

 cod.57021002
 Data di stampa: 03/07/2018

 Versione: 12/ IT
 Pag. 9 di 19
 Data di revisione: 13/02/2017

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

When choosing risk management measures and operating conditions, consult the exposition scenarios attached.

Provide an emergency shower with face and eye wash station.

#### HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

#### SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

#### EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

#### RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

## ENVIRONMENTAL EXPOSURE CONTROLS.

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

For information on controlling environmental exposure, see the exposure scenarios attached to this safety datasheet.

### **SECTION 9. Physical and chemical properties.**

### 9.1. Information on basic physical and chemical properties.

Appearance dense liquid Colour clear

Odour characteristic of solvent

Odour threshold.

pH.

Melting point / freezing point.

Initial boiling point.

Boiling range.

Flash point.

Fvaporation Rate.

Not available.

Not available.

-15 °C.

Not available.

Not available.

Evaporation Rate
Flammability of solids and gases
Lower inflammability limit.
Upper inflammability limit.
Lower explosive limit.
Upper explosive limit.
Vapour pressure.

Not available.
Not available.
Not available.
233 mm Hg.

UNIPLAST cod.57021002

 cod.57021002
 Data di stampa: 03/07/2018

 Versione: 12/ IT
 Pag. 10 di 19
 Data di revisione: 13/02/2017

Vapour density Not available.

Relative density. 0,89

Solubility soluble in organic Partition coefficient: n-octanol/water solvents Not available.

Auto-ignition temperature.

Decomposition temperature.

Viscosity

Explosive properties

Oxidising properties

A60°C

Not available.

Not available.

Not available.

#### 9.2. Other information.

Total solids (250°C / 482°F) 23,80% VOC (Directive 2010/75/EC) : 76,20% VOC (volatile carbon) : 46,20%

## SECTION 10. Stability and reactivity.

#### 10.1. Reactivity.

There are no particular risks of reaction with other substances in normal conditions of use.

#### ETHYL ACETATE

Decomposes slowly into acetic acid and ethanol under the effect of light, air and water.

### ACETONE

Decomposes under the effect of heat.

### METILETILCHETONE

Decomposes under the effect of heat.

#### 10.2. Chemical stability.

The product is stable in normal conditions of use and storage.

## 10.3. Possibility of hazardous reactions.

The vapours may also form explosive mixtures with the air.

#### ETHYL ACETATE

Risk of explosion on contact with: alkaline metals,hydrides,oleum.May react violently with: fluorine,strong oxidising agents,chlorosulphuric acid,potassium tert-butoxide.Forms explosive mixtures with: air.

#### ACETONE

Risk of explosion on contact with: bromine trifluoride,fluorine dioxide,hydrogen peroxide,nitrosyl chloride,2-methyl-1,3 butadiene,nitromethane,nitrosyl perchlorate. May react dangerously with: potassium tert-butoxide,alkaline hydroxides,bromine,bromoform,isoprene,sodium,sulphur dioxide,chromium trioxide,chromyl chloride,nitric acid,chloroform,peroxymonosulphuric acid,phosphoryl oxychloride,chromosulphuric acid,fluorine,strong oxidising agents,strong reducing agents. Develops flammable gas on contact with: nitrosyl perchlorate.

UNIPLAST cod.57021002

Data di stampa: 03/07/2018 Versione: 12/IT Pag. 11 di 19 Data di revisione: 13/02/2017

#### METILETILCHETONE

Risk of explosion on contact with: bromine trifluoride,fluorine dioxide,hydrogen peroxide,nitrosyl chloride,2-methyl-1,3 butadiene,nitromethane,nitrosyl perchlorate. May react dangerously with: potassium tert-butoxide, alkaline hydroxides, bromine, bromoform, isoprene, sodium, sulphur dioxide, chromium trioxide,chromyl chloride,nitric acid,chloroform,peroxymonosulphuric acid,phosphoryl oxychloride,chromosulphuric acid,fluorine,strong oxidising agents, strong reducing agents. Develops flammable gas on contact with: nitrosyl perchlorate.

#### 10.4. Conditions to avoid.

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

#### ETHYL ACETATE

Avoid exposure to: light, sources of heat, naked flames.

#### ACETONE

Avoid exposure to: sources of heat,naked flames.

#### METILETILCHETONE

Avoid exposure to: sources of heat,naked flames.

#### 10.5. Incompatible materials.

#### ETHYL ACETATE

Incompatible with: acids,bases,strong oxidants,aluminium,nitrates,chlorosulphuric acid.Incompatible materials: plastic materials.

#### ACETONE

Incompatible with: acids,oxidising substances.

#### METILETILCHETONE

Incompatible with: acids,oxidising substances.

#### 10.6. Hazardous decomposition products.

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

#### ACFTONE

May develop: ketenes, irritant substances.

#### METILETILCHETONE

May develop: ketenes,irritant substances.

## **SECTION 11. Toxicological information.**

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

## 11.1. Information on toxicological effects.

UNIPLAST cod.57021002

 cod.57021002
 Data di stampa: 03/07/2018

 Versione: 12/ IT
 Pag. 12 di 19
 Data di revisione: 13/02/2017

#### ACUTE TOXICITY.

LC50 (Inhalation - vapours) of the mixture: Not classified (no significant component).

LC50 (Inhalation - mists / powders) of the mixture: Not classified (no significant component).

LD50 (Oral) of the mixture: Not classified (no significant component).

LD50 (Dermal) of the mixture: Not classified (no significant component).

#### ACETONE

LD50 (Oral).5800 mg/kg ratto

LD50 (Dermal).> 20 coniglio

LC50 (Inhalation).21,09 ratto

#### METILETILCHETONE

LD50 (Oral).> 2000 mg/kg Ratto

LD50 (Dermal).> 5000 mg/kg Coniglio

LC50 (Inhalation).> 5000 Ratto

#### ETHYL ACETATE

LD50 (Oral).4934 ratto

LD50 (Dermal).> 20000 coniglio

### SKIN CORROSION / IRRITATION.

Causes skin irritation.

SERIOUS EYE DAMAGE / IRRITATION.

Causes serious eye irritation.

RESPIRATORY OR SKIN SENSITISATION.

Does not meet the classification criteria for this hazard class.

GERM CELL MUTAGENICITY.

Does not meet the classification criteria for this hazard class.

CARCINOGENICITY.

Does not meet the classification criteria for this hazard class.

REPRODUCTIVE TOXICITY.

Does not meet the classification criteria for this hazard class.

STOT - SINGLE EXPOSURE.

May cause drowsiness or dizziness.

STOT - REPEATED EXPOSURE.

Does not meet the classification criteria for this hazard class.

ASPIRATION HAZARD.

Does not meet the classification criteria for this hazard class Viscosity: 2900 cps a 25 C°

## **SECTION 12. Ecological information.**

This product is dangerous for the environment and highly toxic for aquatic organisms. In the long term, it have negative effects on aquatic environment.

## 12.1. Toxicity.

UNIPLAST cod.57021002

 cod.57021002
 Data di stampa: 03/07/2018

 Versione: 12/ IT
 Pag. 13 di 19
 Data di revisione: 13/02/2017

**ACETONE** 

LC50 - for Fish. 8120 mg/l/96h Pimephales promelas

EC50 - for Crustacea. 8800 mg/l/48h Daphnia EC50 - for Algae / Aquatic 530 mg/l/72h Alga

Plants.

METILETILCHETONE

LC50 - for Fish. 2993 mg/l/96h Pimephales promelas EC50 - for Crustacea. 308 mg/l/48h Daphnia magna

EC50 - for Algae / Aquatic 2029 mg/l/72h Scenedesmus subspicatus

Plants.

ETHYL ACETATE

LC50 - for Fish.

230 mg/l/96h Pimephales promelas
EC50 - for Crustacea.

165 mg/l/48h Daphnia magna
Chronic NOEC for

2,4 mg/l Daphnia pulex

Crustacea.

Chronic NOEC for Algae / > 100 mg/l Scenedesmus subspicatus

Aquatic Plants.

### 12.2. Persistence and degradability.

The paraffinic hydrocarbons fraction may be considered biodegradable in water and in air. They distribute mostly in the a	r. The small non hindegradable
The paramille hydrocarbons fraction may be considered blodegradable in water and in all. They distribute mostly in the a	1. The sinal non blodegradable
amount which spreads into water tends to accumulate in fish.	

ACETONE

Rapidly biodegradable.

METILETILCHETONE

Rapidly biodegradable.

UNIPLAST cod.57021002 Versione: 12/ IT

Information not available

Data di stampa: 03/07/2018
Pag. 14 di 19
Data di revisione: 13/02/2017

	<del>_</del>	
ETHYL ACETATE		
Solubility in water.	> 10000 mg/l	
Rapidly biodegradable.		
42.2 Diagrammulating material		
12.3. Bioaccumulative potential.		
ACETONE		
Partition coefficient: n-	-0,23	
octanol/water. BCF.	3	
ETHYL ACETATE		
Partition coefficient: n-	0,68	
octanol/water. BCF.	30	
12.4. Mobility in soil.		

**UNIPLAST** cod.57021002

Data di stampa: 03/07/2018 Pag. 15 di 19 Versione: 12/IT Data di revisione: 13/02/2017

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

### 12.6. Other adverse effects.

Information not available.

## **SECTION 13. Disposal considerations.**

#### 13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## **SECTION 14. Transport information.**

#### 14.1. UN number.

ADR / RID, IMDG, 1133

IATA:

## 14.2. UN proper shipping name.

ADR / RID: **ADHESIVES** IMDG: **ADHESIVES** (HEPTANE) IATA: **ADHESIVES** 

## 14.3. Transport hazard class(es).

ADR / RID: Class: 3 Label: 3

IMDG: Class: 3 Label: 3

IATA: Class: 3 Label: 3



### 14.4. Packing group.

ADR / RID, IMDG, П

IATA:

## 14.5. Environmental hazards.

ADR / RID: NO

**UNIPLAST** cod.57021002

Data di stampa: 03/07/2018 Pag. 16 di 19 Versione: 12/IT Data di revisione: 13/02/2017

IMDG: NO

IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

Cargo:

Pass.:

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code.

14.6. Special precautions for user.

ADR / RID: HIN - Kemler: 33 Limited Tunnel

Quantities: 5 restriction code: (D/E)

Special Provision: 640C

IMDG: EMS: F-E, S-D Limited

Special Instructions:

A3

Quantities: 5

Maximum

instructions: quantity: 60 L

364 Maximum Packaging

Packaging

instructions: quantity: 5 L

353

Information not relevant.

## **SECTION 15. Regulatory information.**

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture.

Seveso Category - Directive 2012/18/EC: P5c-E1

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.

Product.

IATA:

3 - 40 Point.

Substances in Candidate List (Art. 59 REACH).

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisarion (Annex XIV REACH).

None.

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None.

Substances subject to the Rotterdam Convention:

None.

Substances subject to the Stockholm Convention:

UNIPLAST cod.57021002

 cod.57021002
 Data di stampa: 03/07/2018

 Versione: 12/ IT
 Pag. 17 di 19
 Data di revisione: 13/02/2017

None.

### Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

### 15.2. Chemical safety assessment.

A chemical safety assessment has been performed for the following contained substances.

ETHYL ACETATE

ACETONE

METILETILCHETONE

## **SECTION 16. Other information.**

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2 Flammable liquid, category 2

Eye Irrit. 2 Eye irritation, category 2

STOT SE 3 Specific target organ toxicity - single exposure, category 3

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

**EUH066** Repeated exposure may cause skin dryness or cracking.

## LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals

**UNIPLAST** cod.57021002

Data di stampa: 03/07/2018 Pag. 18 di 19 Versione: 12/IT Data di revisione: 13/02/2017

- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

### GENERAL BIBLIOGRAPHY

- 1. Regulation (EU) 1907/2006 (REACH) of the European Parliament
- 2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
- 3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
- Regulation (EU) 2015/830 of the European Parliament
- 5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
- 6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament 7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
- 8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
- 9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
- 10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
- The Merck Index. 10th Edition
- Handling Chemical Safety
- INRS Fiche Toxicologique (toxicological sheet)
- Patty Industrial Hygiene and Toxicology
- N.I. Sax Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website

## Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:

Scenarios added

## **Exposition Scenarios.**

Substance. **ETHYL ACETATE** 

Scenario Title. ETHYL ACETATE BRENNTAG

Revision nr.

EN Acetato di etile 1.pdf File

UNIPLAST cod.57021002

Data di stampa: 03/07/2018 Pag. 19 di 19 Versione: 12/IT Data di revisione: 13/02/2017

Substance. **ACETONE** 

ACETONE BRENNTAG Scenario Title.

Revision nr. File. EN\_Acetone\_1.pdf

METILETILCHETONE Substance. Scenario Title. **BUTANONE BRENNTAG** 

Revision nr. File. EN\_Metiletilchetone\_1.pdf

## Brenntag S.p.A.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## Ethyl acetate

Version 2.0

Print Date 02.02.2017

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environm ental Release Category (ERC)	Article Category (AC)	Specified
1	Distribution of substance	3	8, 9	NA	1, 2, 8a, 8b, 9, 15	2	NA	ES1393
2	Formulation & (re)packing of substances and mixtures	3	10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 15	2	NA	ES1391
3	Use in Cleaning Agents	3	NA	NA	2, 3, 4, 7, 8a, 8b, 10, 13	4	NA	ES13890
4	Use in Cleaning Agents	22	NA	NA	2, 3, 4, 8a, 8b, 10, 11, 13	8a	NA	ES13892
5	Use as lubricants	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 9, 10, 13, 17, 18	4, 7	NA	ES13894
6	Use as lubricants	22	NA	NA	1, 2, 3, 4, 8a, 8b, 9, 10, 11, 13, 17, 18, 20	8a	NA	ES13896
7	Use in laboratories	3	NA	NA	15	4	NA	ES1402
8	Use in laboratories	22	NA	NA	15	8a	NA	ES1406
9	Use as extraction agent and/or processing aid	3	9	NA	1, 2, 3, 4, 8a, 8b	1	NA	ES1395
10	Uses in coatings	22	NA	NA	1, 2, 8a, 8b, 10, 11, 13, 19	8a, 8d	NA	ES1404
11	Use in agrochemicals	22	NA	NA	2, 4, 8a, 8b, 11, 13	8a, 8c, 8d, 8f	NA	ES8752
12	Uses in coatings	21	NA	1, 9a	NA	8a	NA	ES1408
13	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 10, 13, 15, 9, 14	4	NA	ES18795



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1. Short title of Exposure So	enario 1: Distribution of	substance				
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites					
Sectors of end-use	SU8: Manufacture of bulk, SU9: Manufacture of fine	large scale chemicals (including petroleum products) chemicals				
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent					
Environmental Release Categories	ERC2: Formulation of pre	parations				
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC2				
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).				
	Annual site tonnage (tons/year):	30000 tonnes				
Amount used	Daily amount per site	100 tonnes				
Amount used	Fraction used at the main local source.	1				
	Annually total	30000 tonnes				
Frequency and duration of use	Continuous exposure	300 days/year				
Environment feators not	Flow rate of receiving surface water	18.000 m3/d				
Environment factors not influenced by risk management	Dilution Factor (River)	10				
	Dilution Factor (Coastal Areas)	100				
	Emission or Release Factor: Air	2 %				
Other given operational	Emission or Release Factor: Water	10 %				
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %				
	Outdoor use.					
	Processing temperature: A	Ambient temperature				
	Processing pressure: Amb	pient pressure.				
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit	Air	Containment should be used to minimize releases to air., Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental				
PA100623 001	15/69	FN				



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

	legislation				
Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.				
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %)				
Bund storage facilities to p Prevent environmental dis	prevent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.				
Type of Sewage Treatment Plant	Municipal sewage treatment plant				
Flow rate of sewage treatment plant effluent	2.000 m3/d				
Percentage removed from waste water	87 %				
Sludge Treatment	Disposal or recovery				
Waste treatment	Hazardous waste incineration., Dispose for use in recycled fuels.				
Disposal methods	Dispose of waste product or used containers according to local regulations.				
ntrolling worker exposu	ire for: PROC1, PROC2, PROC8a, PROC8b,				
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).				
Physical Form (at time of use)	liquid				
Vapour pressure	98 hPa				
n.a. in tier 1 TRA MODEL					
Frequency of use	< 240 days/year				
Frequency of use	> 4 days/week				
Exposure duration per day	> 240 min				
Exposure duration per day	60 - 240 min(PROC8a)				
Exposed skin areas	Two hands 960 cm <sup>2</sup>				
Outdoor or in highly ventilated (open) spaces					
Indoor use.(PROC8b, PRO					
General exposures Continuous process	Handle substance within a closed system.(PROC1)				
General exposures Continuous process with sample collection	Handle substance within a closed system.(PROC2)				
Bulk transfers Non-dedicated facility	Use drum pumps or carefully pour from container. Locate bulk storage outdoors.(PROC8a)				
	Water  Bund storage facilities to prevent environmental dis  Type of Sewage Treatment Plant  Flow rate of sewage treatment plant effluent  Percentage removed from waste water  Sludge Treatment  Waste treatment  Disposal methods  ntrolling worker exposu  Concentration of the Substance in Mixture/Article  Physical Form (at time of use)  Vapour pressure  n.a. in tier 1 TRA MODEL  Frequency of use  Frequency of use  Exposure duration per day  Exposure duration per day  Exposed skin areas  Outdoor or in highly ventilate Indoor use. (PROC8b, PROC8b, PROC8b)  General exposures Continuous process With sample collection  Bulk transfers				



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

_		
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide extract ventilation to material transfer points and other openings. Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors.(PROC8b)
	Drum/batch transfers Filling / preparation of equipment from drums or containers Bulk weighing	Ensure material transfers are under containment or extract ventilation.  Provide extract ventilation to points where emissions occur.  Provide extract ventilation to material transfer points and other openings.(PROC9)
	Laboratory activities	Handle in a fume cupboard or under extract ventilation.(PROC15)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (test Butyl rubber gloves offer g	ed to EN374) and eye protection. ood protection

## 3. Exposure estimation and reference to its source

## **Environment**

ERC2: EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2		Fresh water	PEC	0,179mg/L	0,688
ERC2		Marine water	PEC	0,018mg/L	0,688
ERC2		Fresh water sediment	PEC	0,239mg/kg	0,854
ERC2		Marine sediment	PEC	0,024mg/kg	0,085
ERC2		Soil	PEC	0,002mg/kg	0,009
ERC2		Sewage treatment plant (STP)	PEC	1,77mg/L	0,003
ERC2		Total daily intake via local environment	PEC	0,005mg/kg bw/day	< 0,001

## Workers

PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - local	0,026mg/m <sup>3</sup>	< 0,001
PROC1		Worker - dermal, long-	0,34mg/kg bw/day	0,0054
		-		

PA100623_001	17/69	EN



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	term - systemic		
PROC2	 Worker - inhalative, long- term - local	128,48mg/m³	0,18
PROC2	 Worker - dermal, long- term - systemic	1,37mg/kg bw/day	0,022
PROC8a	 Worker - inhalative, long- term - local	385,44mg/m³	0,53
PROC8a	 Worker - dermal, long- term - systemic	2,74mg/kg bw/day	0,044
PROC8b	 Worker - inhalative, long- term - local	9,91mg/m³	0,014
PROC8b	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC9	 Worker - inhalative, long- term - local	73,42mg/m³	0,1
PROC9	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC15	 Worker - inhalative, long- term 50ppm 0,25		0,25
PROC15	 Worker - dermal, long- term - systemic	0,34mg/kg bw/day	0,005

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated \* (local emission fraction) \* (local WWTP flow rate fraction) \* (local structure fraction) \* (local str

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

## Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1. Short title of Exposure So	enario 2: Formulation &	(re)packing of substances and mixtures			
Main User Groups	SU 3: Industrial uses: Use sites	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Sectors of end-use	SU 10: Formulation [mixin alloys)	g] of preparations and/ or re-packaging (excluding			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent				
Environmental Release Categories	ERC2: Formulation of prepared	parations			
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC2			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).			
	Annual site tonnage (tons/year):	15000 tonnes			
Amount used	Daily amount per site	50 tonnes			
Amount used	Fraction used at the main local source.	0,4			
	Annually total	60000 tonnes			
Frequency and duration of use	Continuous exposure	300 days/year			
Fig. disappearant for store in st	Flow rate of receiving surface water	18.000 m3/d			
Environment factors not influenced by risk management	Dilution Factor (River)	10			
mideneda by nok management	Dilution Factor (Coastal Areas)	100			
	Emission or Release Factor: Air	0,5 %			
Other given operational conditions affecting	Emission or Release Factor: Water	0,3 %			
environmental exposure	Emission or Release Factor: Soil	0,01 %			
	Indoor use.				
Technical conditions and measures at process level	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be			
PA100623_001	19/69	E			



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

(source) to prevent release Technical onsite conditions and		needed to comply with other environmental legislation
measures to reduce or limit discharges, air emissions and releases to soil	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Organizational measures to prevent/limit release from the site	Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %)
		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d
to sewage treatment plant	Percentage removed from waste water	87 %
	Sludge Treatment	Disposal or recovery
Conditions and measures related to external treatment of waste for	Waste treatment	Hazardous waste incineration., Dispose for use in recycled fuels., External treatment and disposal of waste should comply with applicable local and/or national regulations.
disposal	Disposal methods	Dispose of waste product or used containers according to local regulations.
2.2 Contributing scenario co PROC5, PROC8a, PROC8		re for: PROC1, PROC2, PROC3, PROC4,
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amount used	n.a. in tier 1 TRA MODEL	
	Frequency of use	< 240 days/year
	Frequency of use	> 4 days/week
Frequency and duration of use	Exposure duration per day	> 240 min
	Exposure duration per day	< 240 min(PROC8a, PROC8b)
Human factors not influenced by risk management	Exposed skin areas	Two hands 960 cm <sup>2</sup>
Other operational conditions	Indoor use.	
affecting workers exposure	Outdoor use.(PROC1)	
Technical conditions and measures to control dispersion	General exposures Continuous process	Handle substance within a closed system.(PROC1)
from source towards the worker	General exposures Continuous process	Ensure material transfers are under containment or extract ventilation.



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

	with sample collection	Provide extraction ventilation at points where emissions occur.  Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC2)			
	Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Use drum pumps or carefully pour from container. Locate bulk storage outdoors.(PROC8a)			
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation.  Provide extract ventilation to points where emissions occur.  Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).  Clear transfer lines prior to de-coupling.  Retain drain downs in sealed storage pending disposal or for subsequent recycle.  Locate bulk storage outdoors.(PROC8b)			
	Drum/batch transfers Filling / preparation of equipment from drums or containers Bulk weighing	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC9)			
	General exposures Use in contained batch processes	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC3)			
	General exposures Use in contained batch processes with sample collection	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC4)			
	Mixing operations (open systems) Batch process	Ensure material transfers are under containment or extract ventilation.  Provide extract ventilation to points where emissions occur.  Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC5)			
	Laboratory activities	Handle in a fume cupboard or under extract ventilation.(PROC15)			
Conditions and measures related to personal protection, hygiene and health evaluation	to personal protection, hygiene Butyl rubber gloves offer good protection				
PA100623 001	21/69	FN			



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

## 3. Exposure estimation and reference to its source

### **Environment**

ERC2: EUSES 2.1

=					
Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2		Fresh water	PEC	0,144mg/L	0,554
ERC2		Marine water	PEC	0,0144mg/L	0,554
ERC2		Fresh water sediment	PEC	0,192mg/kg	0,686
ERC2		Marine sediment	PEC	0,019mg/kg	0,0685
ERC2		Soil	PEC	0,0015mg/kg	0,005
ERC2		Sewage treatment plant (STP)	PEC	1,416mg/L	0,0022
ERC2		Total daily intake via local environment	PEC	0,003mg/kg bw/day	< 0,001

## Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - local	0,03mg/m³	< 0,001
PROC1		Worker - dermal, long- term - systemic	0,34mg/kg bw/day	0,0054
PROC2		Worker - inhalative, long- term - local	18,35mg/m³	0,025
PROC2		Worker - dermal, long- term - systemic	0,14mg/kg bw/day	0,0022
PROC3		Worker - inhalative, long- term - local	73,42mg/m³	0,10
PROC3		Worker - dermal, long- term - systemic	0,03mg/kg bw/day	< 0,001
PROC4		Worker - inhalative, long- term - local	73,42mg/m³	0,25
PROC4		Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC5		Worker - inhalative, long- term - local	183,54mg/m³	0,301
PROC5		Worker - dermal, long- term - systemic	0,07mg/kg bw/day	0,0011
PROC8a		Worker - inhalative, long-	55,06mg/m <sup>3</sup>	0,075



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	term - local		
PROC8a	 Worker - dermal, long- term - systemic	0,14mg/kg bw/day	0,0022
PROC8b	 Worker - inhalative, long- term - local 33,04mg/m³ 0,0		0,075
PROC8b	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC9	 Worker - inhalative, long- term - local	73,42mg/m³	0,10
PROC9	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC15	 Worker - inhalative, long- term	50ppm	0,25
PROC15	 Worker - dermal, long- term - systemic	0,34mg/kg bw/day	0,005

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated \* (local emission fraction) \* (local WWTP flow rate fraction) \* (local river flow rate fraction) \* (local STP efficiency fraction)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

## Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites				
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring				
Environmental Release Categories	ERC4: Industrial use of propart of articles	ocessing aids in processes and products, not becoming			
2.1 Contributing scenario co	ontrolling environmenta	exposure for: ERC4			
Amount used	Annual amount per site	25 ton(s)/year			
Amount used	Daily amount per site	1200 kg/day			
Frequency and duration of use	Continuous exposure	20 days/year			
Environment factors not	Dilution Factor (River)	10			
influenced by risk management	Dilution Factor (Coastal Areas)	100			
Other airean anational	Emission or Release Factor: Air	30 %			
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Water	0,01 %			
отты отта охробите	Emission or Release Factor: Soil	0 %			
	Air	Treat air emission to provide a typical removal efficiency of (%):			
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Water	Do not release wastewater directly into environment., Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):, If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.			
releases to soil Organizational measures to	Soil	Soil emission controls are not applicable as there is no direct release to soil.			
prevent/limit release from the site	Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent environmental discharge consistent with regulatory requirements. Store all VOC-containing wastes in closed, secure containers (e.g., bulk tanks, intermediate bulk containers, drums)				
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant			
to sewaye treatment plant	Flow rate of sewage	2.000 m3/d			



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

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	treatment plant effluent	
Conditions and measures related to external treatment of waste for	Degradation efficiency  Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national
disposal  2.2 Contributing scenario co	ntrolling worker exposu	regulations.  ire for: PROC2, PROC3, PROC4, PROC7,
PROC8a, PROC8b, PROC		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Assumes use at not more differently.	than 20 ℃ above ambient temperature, unless stated
Technical conditions and	Use in contained batch processes Treatment by heating	Provide extract ventilation to points where emissions occur.(PROC4)
	Filling / preparation of equipment from drums or containers	Ensure material transfers are under containment or extract ventilation. Clear transfer lines prior to de-coupling.(PROC8a)
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Clear transfer lines prior to de-coupling.(PROC8b)
measures to control dispersion from source towards the worker	Cleaning with low- pressure washers	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10)
	Manual Surfaces cleaning No spraying	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10)
	Degreasing small objects in cleaning station	Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC13)
	Cleaning with high pressure washers	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC7)
Conditions and measures related to personal protection, hygiene	Cleaning with low- pressure washers	Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
and health evaluation	Manual Surfaces cleaning No spraying	Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
3. Exposure estimation and	reference to its source	
PA100623_001	25/69	EN

## Brenntag S.p.A.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

### **Environment**

ERC4: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4		Fresh water	PEC - local	0,00117mg/L	0,0045
ERC4		Fresh water sediment	PEC - local	0,00698mg/kg dry weight (d.w.)	0,00558
ERC4		Marine water	PEC - local	0,000132mg/L	0,00508
ERC4		Marine sediment	PEC - local	0,000784mg/k g dry weight (d.w.)	0,00627
ERC4	-	Soil	PEC - local	0,00114mg/kg dry weight (d.w.)	0,00691
ERC4		Sewage treatment plant (STP)	PEC	0,0625mg/L	0,000096
ERC4			Msafe	173000kg/day	

ESVOC spERC 4.4a.v1 has been used to evaluate the exposure for the environment.

## Workers

PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2, PROC8a, PROC13		Inhalation worker exposure 25ppm		0,125
PROC2, PROC8a, PROC13		Dermal worker exposure	1,371mg/kg/day	0,022
PROC3, PROC4, PROC7		Inhalation worker exposure	50ppm	0,25
PROC3, PROC4, PROC8b		Dermal worker exposure	0,686mg/kg/day	0,011
PROC7		Dermal worker exposure	42,86mg/kg/day	0,68
PROC8b		Inhalation worker exposure	4,5ppm	0,023
PROC10		Inhalation worker exposure	75ppm	0,375
PROC10		Dermal worker exposure	27,43mg/kg/day	0,435

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

PA100623\_001 26/69 EN



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

The following equation may be used for scaling:

$$\frac{m_{\text{spERC}} * (1 - E_{\text{ER,spERC}}) * F_{\text{release, spERC}}}{DF_{\text{spERC}}} \ge \frac{m_{\text{site}} * (1 - E_{\text{ER,site}}) * F_{\text{release, site}}}{DF_{\text{site}}}$$

Where: mspERC: Substance use rate in spERC

EER, spERC: Efficacy of RMM in spERC

Frelease, spERC: Initial release fraction in spERC DFspERC: spERC wastewater dilution factor

Msite: Substance use rate at site EER, site: Efficacy of RMM at site

Frelease, site: Initial release fraction at site DFsite: site-specific wastewater dilution factor

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-

industries-libraries.html).

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1. Short title of Exposure Sc	enario 4: Use in Cleanir	ng Agents				
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)					
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring					
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems					
2.1 Contributing scenario controlling environmental exposure for: ERC8a						
Amount used	Annual amount per site	0,005 ton(s)/year				
Amount used	Daily amount per site	0,013 kg/day				
Frequency and duration of use	Continuous exposure	365 days/year				
Environment factors not influenced by risk management	Dilution Factor (River)	10				
	Dilution Factor (Coastal Areas)	100				
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	100 %				
	Emission or Release Factor: Water	100 %				
	Emission or Release Factor: Soil	0 %				
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation				
	Soil	Soil emission controls are not applicable as there is no direct release to soil.				
	Prevent environmental discharge consistent with regulatory requirements. Store all VOC-containing wastes in closed, secure containers (e.g., bulk tanks, intermediate bulk containers, drums)					
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant				
	Flow rate of sewage treatment plant effluent	2.000 m3/d				
	Degradation efficiency	88 %				



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017							
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.					
2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13							
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.					
	Physical Form (at time of use)	liquid					
	Vapour pressure	> 10 kPa					
Frequency and duration of use	Frequency of use	8 hours/day					
Other operational conditions affecting workers exposure	Assumes use at not more than 20 ℃ above ambient temperature, unless stated differently.						
Technical conditions and measures to control dispersion from source towards the worker	Semi-automated process (e.g.: Semi-automatic application of floor care and maintenance products)	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC4)					
	Application of cleaning products in closed systems Outdoor.	Ensure operation is undertaken outdoors.(PROC4)					
	Cleaning of medical devices	Provide extract ventilation to points where emissions occur.(PROC4)					
	Filling / preparation of equipment from drums or containers Outdoor.	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8a)					
	Filling / preparation of equipment from drums or containers Dedicated facility	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC8)					
	Cleaning with low- pressure washers Rolling, Brushing No spraying	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10					
	Manual Surfaces cleaning	Limit the substance content in the product to 5 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC10)					
	Ad hoc manual application via trigger sprays, dipping, etc Rolling, Brushing	Provide extract ventilation to points where emissions occur.(PROC10)					
	Cleaning with high pressure washers Spraying Indoor.	Limit the substance content in the product to 5 %. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC11)					
PA100623_001	29/69	EN					

## Brenntag S.p.A.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	Cleaning with high pressure washers Spraying Outdoor.	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors.(PROC11)	
	Dipping, immersion and pouring Manual Surfaces cleaning	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC13)	
Conditions and measures related to personal protection, hygiene and health evaluation	Filling / preparation of equipment from drums or containers Outdoor.	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC8a)	
	Ad hoc manual application via trigger sprays, dipping, etc Rolling, Brushing	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC10)	
	Cleaning with high pressure washers Spraying Outdoor.	Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)	

## 3. Exposure estimation and reference to its source

## **Environment**

ERC8a: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC - local	0,00075mg/L	0,00288
ERC8a		Fresh water sediment	PEC - local	0,00448mg/kg dry weight (d.w.)	0,00358
ERC8a		Marine water	PEC - local	0,0000894mg/ L	0,00344
ERC8a		Marine sediment	PEC - local	0,000533mg/k g dry weight (d.w.)	0,00426
ERC8a		Soil	PEC - local	0,000242mg/k g dry weight (d.w.)	0,00147
ERC8a		Sewage treatment plant (STP)	PEC	0,0274mg/L	0,000042
ERC8a			Msafe	3,05kg/day	

## Workers

PA100623\_001 30/69 EN



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13: Used ECETOC TRA model.

Contributing Scenario	· · · · · · · · · · · · · · · · · · ·		Level of Exposure	RCR
PROC2		Inhalation worker exposure	1.30nnm	
PROC2		Dermal worker exposure	0,822mg/kg/day	0,013
PROC3		Inhalation worker exposure	60ppm	0,30
PROC3		Dermal worker exposure	0,414mg/kg/day	0,007
PROC4		Inhalation worker exposure	52,5ppm	0,263
PROC4		Dermal worker exposure	4,116mg/kg/day	0,065
PROC8a		Inhalation worker exposure	21ppm	0,105
PROC8a, PROC8b, PROC13		Dermal worker exposure	8,226mg/kg/day	0,131
PROC8b, PROC13		Inhalation worker exposure	45ppm	0,225
PROC10		Inhalation worker exposure	90ppm	0,45
PROC10		Dermal worker exposure	16,458mg/kg/day	0,261
PROC11		Inhalation worker exposure	rker 70ppm (	
PROC11		Dermal worker exposure	21,428mg/kg/day	0,34

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Not applicable for wide dispersive uses.

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

#### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1. Short title of Exposure Scenario 5: Use as lubricants					
Main User Groups	SU 3: Industrial uses: Use sites	s of substances as such or in preparations at industrial			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open process PROC18: Greasing at high energy conditions				
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC7: Industrial use of substances in closed systems				
2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC7					
Amount used	Annual amount per site	25 ton(s)/year			
	Daily amount per site	1250 kg/day			
Frequency and duration of use	Continuous exposure	20 days/year			
Environment factors not influenced by risk management	Dilution Factor (River)  Dilution Factor (Coastal Areas)	10 100			
Other given operational	Emission or Release Factor: Air	0,3 %			
conditions affecting environmental exposure	Emission or Release Factor: Water	0,1 %			
'	Emission or Release Factor: Soil	0,1 %			
Technical conditions and	Air	Treat air emission to provide a typical removal efficiency of (%):			
measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Water	Do not release wastewater directly into environment., Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):, If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.			
Organizational measures to prevent/limit release from the	Soil	Soil emission controls are not applicable as there is no direct release to soil.			
site		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.			



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

	Store all VOC-containing wa	astes in closed, secure containers (e.g., bulk tanks, s, drums)		
	Type of Sewage Treatment Plant	Domestic sewage treatment plant		
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d		
	Degradation efficiency	88 %		
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.		
2.2 Contributing scenario co PROC7, PROC8a, PROC8		re for: PROC1, PROC2, PROC3, PROC4, DC13, PROC17, PROC18		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
Frequency and duration of use	Frequency of use	8 hours/day		
		than 20 °C above ambient temperature, unless stated		
	General exposures (closed systems)	Handle substance within a closed system.(PROC1)		
	Storage	Store substance within a closed system. Avoid dip sampling.(PROC2)		
	General exposures (closed systems) Batch process with sample collection	Handle substance within a closed system.(PROC3)		
	General exposures (open systems)	Provide extract ventilation to points where emissions occur.(PROC4)		
Technical conditions and	Spraying	Carry out in a vented booth or extracted enclosure. Automate activity where possible.(PROC7)		
measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers Non-dedicated facility	Use drum pumps. Transfer via enclosed lines.(PROC8a)		
	Maintenance of small items	Drain down system prior to equipment break-in or maintenance.  Avoid manual contact with wet work pieces.  Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8a)		
	Bulk transfers	Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure material transfers are under containment or extract ventilation. Clear spills immediately.		
PA100623 001	33/69	EN		



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

		Remotely vent displaced vapours.(PROC8b)
	Filling / preparation of equipment from drums or containers Dedicated facility	Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure material transfers are under containment or extract ventilation. Clear spills immediately. Remotely vent displaced vapours.(PROC8b)
	Maintenance (of larger plant items) and machine set up with local exhaust ventilation	Ensure material transfers are under containment or extract ventilation.(PROC8b)
	Maintenance (of larger plant items) and machine set up without local exhaust ventilation	Drain or remove substance from equipment prior to break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8b)
	Initial factory fill of equipment	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC9)
	Remanufacture of reject articles	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).  Ensure material transfers are under containment or extract ventilation.  Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC9)
	Rolling, Brushing Manual	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10)
	Treatment by dipping and pouring	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Restrict area of openings to equipment. Allow time for product to drain from workpiece.(PROC13)
	Operation and lubrication of high energy open equipment	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC17, PROC18)
Conditions and measures related to personal protection, hygiene and health evaluation	Spraying	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Wear suitable coveralls to prevent exposure to the skin.(PROC7)
3. Exposure estimation and	reference to its source	

#### **Environment**

### Brenntag S.p.A.



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

ERC4, ERC7: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4, ERC7		Fresh water	PEC - local	0,00792mg/L	0,0305
ERC4, ERC7		Fresh water sediment	PEC - local	0,0472mg/kg dry weight (d.w.)	0,0378
ERC4, ERC7		Marine water	PEC - local	0,00806mg/L	0,31
ERC4, ERC7		Marine sediment	PEC - local	0,00481mg/kg dry weight (d.w.)	0,0385
ERC4, ERC7		Soil	PEC - local	0,00356mg/kg dry weight (d.w.)	0,0216
ERC4, ERC7		Sewage treatment plant (STP)	PEC	0,625mg/L	0,000962
ERC4, ERC7			Msafe	4030kg/day	

ESVOC spERC 4.4a.v1 has been used to evaluate the exposure for the environment.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PROC1		Inhalation worker exposure	0,01ppm	< 0,001	
PROC1		Dermal worker exposure	0,03mg/kg/day	< 0,001	
PROC2		Inhalation worker exposure	25ppm	0,125	
PROC2		Dermal worker exposure	1,37mg/kg/day	0,022	
PROC3, PROC7, PROC8a		Inhalation worker exposure	50ppm	0,25	
PROC3		Dermal worker exposure	0,69mg/kg/day	0,011	
PROC4		Inhalation worker exposure	10ppm	0,05	
PROC4, PROC9		Dermal worker exposure	6,86mg/kg/day	0,109	
PROC7		Dermal worker exposure	8,572mg/kg/day	0,136	
PROC8b		Inhalation worker exposure	30ррт	0,15	
PROC8a, PROC8b, PROC13, PROC18		Dermal worker exposure	13,71mg/kg/day	0,218	
PROC9	Inhalation worker exposure 60ppm		0,3		
PROC10		Inhalation worker	75ppm	0,375	
PA100623 001		35/69			



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

		exposure			
PROC10, PROC17		Dermal worker exposure	27,43mg/kg/day	0,435	
PROC13		Inhalation worker exposure	87,5ppm	0,438	
PROC17, PROC18		Inhalation worker exposure	5ppm	0,025	

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

#### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

The following equation may be used for scaling:

$$\frac{m_{\text{spERC}} * (1 - E_{\text{ER,spERC}}) * F_{\text{release, spERC}}}{DF_{\text{spERC}}} \ge \frac{m_{\text{site}} * (1 - E_{\text{ER,site}}) * F_{\text{release, site}}}{DF_{\text{site}}}$$

Where: mspERC: Substance use rate in spERC

EER, spERC: Efficacy of RMM in spERC

Frelease, spERC: Initial release fraction in spERC DFspERC: spERC wastewater dilution factor

Msite: Substance use rate at site EER,site: Efficacy of RMM at site

Frelease, site: Initial release fraction at site DFsite: site-specific wastewater dilution factor

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

#### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Main User Groups	SU 22: Professional uses: entertainment, services, cr	Public domain (administration, education, aftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open process PROC18: Greasing at high energy conditions PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems  ERC8a: Wide dispersive indoor use of processing aids in open systems	
Environmental Release Categories		
2.1 Contributing scenario co	ontrolling environmenta	l exposure for: ERC8a
A read was all	Annual amount per site	0,005 ton(s)/year
		0,000 to: (0)/ J out
Amount used	Daily amount per site	0,013 kg/day
	Daily amount per site  Continuous exposure	
Frequency and duration of use	·	0,013 kg/day
Frequency and duration of use  Environment factors not	Continuous exposure	0,013 kg/day 365 days/year
Frequency and duration of use Environment factors not influenced by risk management	Continuous exposure Dilution Factor (River) Dilution Factor (Coastal	0,013 kg/day 365 days/year 10
Frequency and duration of use Environment factors not influenced by risk management  Other given operational conditions affecting	Continuous exposure Dilution Factor (River) Dilution Factor (Coastal Areas) Emission or Release	0,013 kg/day 365 days/year 10 100
Frequency and duration of use  Environment factors not influenced by risk management  Other given operational	Continuous exposure Dilution Factor (River) Dilution Factor (Coastal Areas) Emission or Release Factor: Air Emission or Release	0,013 kg/day 365 days/year 10 100
Environment factors not influenced by risk management  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Continuous exposure Dilution Factor (River) Dilution Factor (Coastal Areas) Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release	0,013 kg/day 365 days/year 10 100 100 %
Environment factors not influenced by risk management  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Continuous exposure Dilution Factor (River) Dilution Factor (Coastal Areas) Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil	0,013 kg/day 365 days/year 10 100 100 % 100 %  Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation
Environment factors not influenced by risk management  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release	Continuous exposure Dilution Factor (River) Dilution Factor (Coastal Areas) Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Air Soil Prevent environmental dis	0,013 kg/day 365 days/year 10 100 100 % 100 %  Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation Soil emission controls are not applicable as there no direct release to soil. charge consistent with regulatory requirements. wastes in closed, secure containers (e.g., bulk tanks,



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

	Treatment Plant	
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	88 %
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
		re for: PROC1, PROC2, PROC3, PROC4, ROC13, PROC17, PROC18, PROC20
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Assumes use at not more t differently.	than 20 °C above ambient temperature, unless stated
	General exposures (closed systems)	Handle substance within a closed system.(PROC1)
	Storage	Store substance within a closed system.(PROC2)
	General exposures (closed systems) Batch process with sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Handle substance within a closed system.(PROC3)
	General exposures (open systems)	Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation.(PROC4)
Technical conditions and measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers Non-dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Use drum pumps or carefully pour from container. Provide enhanced general ventilation by mechanical means.(PROC8a)
	Maintenance (of larger plant items) and machine set up	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Drain down system prior to equipment break-in or maintenance. Clear transfer lines prior to de-coupling.(PROC8a)
	Maintenance (of larger plant items) and machine set up Elevated temperature	Provide extract ventilation to points where emissions occur. Drain down system prior to equipment break-in or maintenance. Clear transfer lines prior to de-coupling.(PROC8a)
	Bulk transfers	Transfer via enclosed lines.



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

		Clear transfer lines prior to de-coupling. Handle substance within a closed system.(PROC8b)
	Filling / preparation of equipment from drums or containers Dedicated facility	Transfer via enclosed lines. Use drum pumps or carefully pour from container.(PROC8b)
	Maintenance of small items	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).  Drain or remove substance from equipment prior to break-in or maintenance.  Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC9)
	Rolling, Brushing Manual with local exhaust ventilation	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Provide extract ventilation to points where emissions occur.(PROC10)
	Spraying with local exhaust ventilation	Limit the substance content in the mixture to 25 %. Carry out in a vented booth or extracted enclosure.(PROC11)
	Spraying without local exhaust ventilation	Limit the substance content in the mixture to 25 %.(PROC11)
	Treatment by dipping and pouring	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Allow time for product to drain from workpiece.(PROC13)
	Operation and lubrication of high energy open equipment Indoor.	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC17, PROC18)
	Operation and lubrication of high energy open equipment Outdoor.	Limit the substance content in the product to 5 %. Ensure operation is undertaken outdoors.(PROC17)
	Restrict area of openings to	equipment.(PROC20)
	Rolling, Brushing Manual without local exhaust ventilation	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC10)
Conditions and measures related to personal protection, hygiene and health evaluation	Spraying without local exhaust ventilation	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.(PROC11)

### Brenntag S.p.A.



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

### 3. Exposure estimation and reference to its source

#### **Environment**

ERC8a: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC - local	0,00075mg/L	0,00288
ERC8a		Fresh water sediment	PEC - local	0,00448mg/kg dry weight (d.w.)	0,00358
ERC8a		Marine water	PEC - local	0,0000894mg/ L	0,00344
ERC8a		Marine sediment	PEC - local	0,000533mg/k g dry weight (d.w.)	0,00426
ERC8a		Soil	PEC - local	0,000242mg/k g dry weight (d.w.)	0,00147
ERC8a		Sewage treatment plant (STP)	PEC	0,0274mg/L	0,000042
ERC8a			Msafe	3,05kg/day	

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation worker exposure	0,01ppm	< 0,001
PROC1		Dermal worker exposure	0,03mg/kg/day	< 0,001
PROC2, PROC4, PROC8b, PROC18		Inhalation worker exposure	50ppm	0,25
PROC2, PROC4, PROC18		Dermal worker exposure	1,37mg/kg/day	0,022
PROC3, PROC10, PROC17		Inhalation worker exposure	70ppm	0,35
PROC3		Dermal worker exposure	0,69mg/kg/day	0,011
PROC8a		Inhalation worker exposure	80ppm	0,4
PROC8a, PROC8b, PROC13		Dermal worker exposure	13,71mg/kg/day	0,218
PROC9		Inhalation worker	15ppm	0,075



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	exposure		
PROC9	 Dermal worker exposure	6,86mg/kg/day	0,109
PROC10	 Dermal worker exposure	27,43mg/kg/day	0,435
PROC11	 Inhalation worker exposure	60ppm	0,3
PROC11	 Dermal worker exposure	12,857mg/kg/day	0,204
PROC13	 Inhalation worker exposure	75ppm	0,375
PROC17	 Dermal worker exposure	5,486mg/kg/day	0,087
PROC20	 Inhalation worker exposure	25ppm	0,125
PROC20	 Dermal worker exposure	1,71mg/kg/day	0,027

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Environment

Not applicable for wide dispersive uses.

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

#### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Main Haar Crausa	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial			
Main User Groups	sites			
Process categories	PROC15: Use as laborato			
Environmental Release Categories	ERC4: Industrial use of propart of articles	ocessing aids in processes and products, not becomin		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
	Annual site tonnage (tons/year):	30 tonnes		
Amountused	Daily amount per site	1000 kg		
Amount used	Fraction used at the main local source.	0,01		
	Annually total	3000 tonnes		
Frequency and duration of use	Continuous exposure	300 days/year		
	Flow rate of receiving surface water	18.000 m3/d		
Environment factors not influenced by risk management	Dilution Factor (River)	10		
militation by Holk management	Dilution Factor (Coastal Areas)	100		
	Emission or Release Factor: Air	100 %		
Other given operational	Emission or Release Factor: Water	100 %		
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %		
	Indoor use.			
	Processing temperature: Ambient temperature			
	Processing pressure: Amb	ient pressure.		
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation		
measures to reduce or limit discharges, air emissions and releases to soil	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required., Do not release wastewater directly into environment.		
Organizational measures to prevent/limit release from the site		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.		
Conditions and measures related	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d		



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	Percentage removed from waste water	87 %	
	Sludge Treatment	Disposal or recovery	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC15	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	98 hPa	
Amount used	n.a. in tier 1 TRA MODEL		
	Frequency of use	< 240 days/year	
Frequency and duration of use	Frequency of use	> 4 days/week	
Troquency and duration of dec	Exposure duration per day	60 - 240 min	
Human factors not influenced by risk management	Exposed skin areas	One hand, face side only. 240 cm <sup>2</sup>	
Other operational conditions affecting workers exposure			
Technical conditions and measures to control dispersion from source towards the worker	Laboratory activities	Handle in a fume cupboard or under extract ventilation.	
Conditions and measures related to personal protection, hygiene and health evaluation	Laboratory activities	Wear suitable gloves (tested to EN374) and eye protection.	

### 3. Exposure estimation and reference to its source

#### **Environment**

ERC4: EUSES 2.1

21.0 1. 20020 2.1					
Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4		Fresh water	PEC	0,0839mg/L	0,323
ERC4		Marine water	PEC	0,0084mg/L	0,323
ERC4		Fresh water sediment	PEC	0,1115mg/kg	0,398
ERC4		Marine sediment	PEC	0,0112mg/kg	0,040
ERC4		Soil	PEC	0,0002mg/kg	< 0,001
ERC4		Sewage treatment plant (STP)	PEC	0,8219mg/L	0,001
ERC4		Total daily intake via local environment	PEC	0,0021mg/kg bw/day	< 0,001

### Brenntag S.p.A.



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

#### Workers

PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC15		Worker - inhalative, long- term - local	110,12mg/m³	0,151
PROC15		Worker - dermal, long- term - systemic	0,343mg/kg bw/day	0,005

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated \* (local emission fraction) \* (local WWTP flow rate fraction) \* (local river flow rate fraction) \* (local STP efficiency fraction)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

#### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1 Short title of Evacoure So	anaria 9. Haa in laharat	orioo	
1. Short title of Exposure Sc		Public domain (administration, education,	
Main User Groups	entertainment, services, cra	aftsmen)	
Process categories	PROC15: Use as laborato	ry reagent	
Environmental Release Categories	ERC8a: Wide dispersive in	ndoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Annual site tonnage (tons/year):	30 tonnes	
Amount used	Daily amount per site	2 kg	
Amount used	Fraction used at the main local source.	0,01	
	Annually total	3000 tonnes	
Frequency and duration of use	Continuous exposure	300 days/year	
	Flow rate of receiving surface water	18.000 m3/d	
Environment factors not nfluenced by risk management	Dilution Factor (River)	10	
inindenced by risk management	Dilution Factor (Coastal Areas)	100	
	Emission or Release Factor: Air	100 %	
Other given operational	Emission or Release Factor: Water	100 %	
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %	
	Indoor use.		
	Processing temperature: Ambient temperature		
	Processing pressure: Amb	pient pressure.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation	
measures to reduce or limit discharges, air emissions and releases to soil	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required., Do not release wastewater directly into environment.	
Organizational measures to prevent/limit release from the site	Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent environmental discharge consistent with regulatory requirements.		
Conditions and measures related	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d	



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	Percentage removed from waste water	87 %	
	Sludge Treatment	Disposal or recovery	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC15	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	98 hPa	
Amount used	n.a. in tier 1 TRA MODEL		
	Frequency of use	< 240 days/year	
Frequency and duration of use	Frequency of use	> 4 days/week	
Trequency and duration of use	Exposure duration per day	60 - 240 min	
Human factors not influenced by risk management	Exposed skin areas	One hand, face side only. 240 cm <sup>2</sup>	
Other operational conditions affecting workers exposure	Indoor use.		
Technical conditions and measures to control dispersion from source towards the worker	Laboratory activities	Handle in a fume cupboard or under extract ventilation.	
Conditions and measures related to personal protection, hygiene and health evaluation	Laboratory activities	Wear suitable gloves (tested to EN374) and eye protection.	

### 3. Exposure estimation and reference to its source

#### **Environment**

ERC8a: EUSES 2.1

E11000. E00E0 2.1					
Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC	0,0839mg/L	0,323
ERC8a		Marine water	PEC	0,0084mg/L	0,323
ERC8a		Fresh water sediment	PEC	0,1115mg/kg	0,398
ERC8a		Marine sediment	PEC	0,0112mg/kg	0,040
ERC8a		Soil	PEC	0,0002mg/kg	< 0,001
ERC8a		Sewage treatment plant (STP)	PEC	0,8219mg/L	0,001
ERC8a		Total daily intake via local environment	PEC	0,0021mg/kg bw/day	< 0,001

### Brenntag S.p.A.



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

#### Workers

PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC15		Worker - inhalative, long- term - local	110,12mg/m³	0,151
PROC15		Worker - dermal, long- term - systemic	0,343mg/kg bw/day	0,005

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated \* (local emission fraction) \* (local WWTP flow rate fraction) \* (local river flow rate fraction) \* (local STP efficiency fraction)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

#### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1. Short title of Exposure So	enario 9: Use as extract	ion agent and/or processing aid	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Sectors of end-use	SU9: Manufacture of fine	chemicals	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities		
Environmental Release Categories	ERC1: Manufacture of sub	ostances	
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC1	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Annual site tonnage (tons/year):	300 tonnes	
Amount used	Daily amount per site	1 tonnes	
Amount used	Fraction used at the main local source.	0,1	
	Annually total	3000 tonnes	
Frequency and duration of use	Continuous exposure	300 days/year	
Environment factors not	Flow rate of receiving surface water	18.000 m3/d	
influenced by risk management	Dilution Factor (River)	10	
	Dilution Factor (Coastal Areas)	100	
	Emission or Release Factor: Air	0,5 %	
Other given operational	Emission or Release Factor: Water	1 %	
conditions affecting environmental exposure	Emission or Release Factor: Soil	0,01 %	
·	Indoor use.		
	Processing temperature: A	mbient temperature	
	Processing pressure: Amb	ient pressure.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Air	Use containment measures to reduce fugitive emissions., Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation, Use appropriate emission	
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## Ethyl acetate

Version 2.0 Print Date 02.02.2017

releases to soil Organizational measures to		abatement equipment from LEV systems if required by local legislation.		
prevent/limit release from the site	Keep container tightly closed. Store in a bounded area.			
	Water	Onsite wastewater treatment required, Do not release wastewater directly into environment.		
	Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %)		
		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.		
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d		
to sewage treatment plant	Percentage removed from waste water	87 %		
	Sludge Treatment	Disposal or recovery		
Conditions and measures related to external treatment of waste for	Waste treatment	Hazardous waste incineration., Dispose for use in recycled fuels.		
disposal	Disposal methods	Dispose of waste product or used containers according to local regulations.		
2.2 Contributing scenario co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	98 hPa		
Amount used	n.a. in tier 1 TRA MODEL			
	Frequency of use	< 240 days/year		
	Frequency of use	> 4 days/week		
Frequency and duration of use	Exposure duration per day	> 240 min(PROC3, PROC4)		
	Exposure duration per day	60 - 240 min(PROC8a, PROC8b)		
Human factors not influenced by	Exposed skin areas	Palms of both hands 480 cm <sup>2</sup> (PROC3, PROC4)		
risk management	Exposed skin areas	Two hands 960 cm <sup>2</sup> (PROC8a, PROC8b)		
Other operational conditions affecting workers exposure	Indoor use.			
Technical conditions and measures to control dispersion from source towards the worker	General exposures Use in contained batch processes	Handle substance within a predominantly closed system provided with extract ventilation. Ensure material transfers are under containment or extract ventilation.		
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## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

		Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC3)
	General exposures Use in contained batch processes with sample collection	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC4)
	Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation.  Provide extract ventilation to points where emissions occur.  Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).  Use drum pumps or carefully pour from container.  Locate bulk storage outdoors.(PROC8a)
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors.(PROC8b)
Conditions and measures related		ed to EN374) and eye protection.
to personal protection, hygiene	Butyl rubber gloves offer go	ood protection
and health evaluation		

#### 3. Exposure estimation and reference to its source

#### **Environment**

ERC1: EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1		Fresh water	PEC	0,0106mg/L	0,041
ERC1		Marine water	PEC	0,0010mg/L	0,041
ERC1		Fresh water sediment	PEC	0,0141mg/kg	0,050
ERC1		Marine sediment	PEC	0,0014mg/kg	0,005
ERC1		Soil	PEC	0,0031mg/kg	0,014
ERC1		Sewage treatment plant (STP)	PEC	0,0778mg/L	< 0,001
ERC1		Total daily intake via local environment	PEC	0,0004mg/kg bw/day	< 0,001



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

#### Workers

PROC3, PROC4, PROC8a, PROC8b: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC3		Worker - inhalative, long- term - local	36,71mg/m³	0,050
PROC3		Worker - dermal, long- term - systemic	0,03mg/kg bw/day	< 0,001
PROC4		Worker - inhalative, long- term - local 36,71mg/m³		0,050
PROC4		Worker - dermal, long- term - systemic	I U hyma/ka hw/aav	
PROC8a		Worker - inhalative, long- term - local	55,06mg/m <sup>3</sup>	0,075
PROC8a		Worker - dermal, long- term - systemic 0,14mg/kg bw/day		0,0022
PROC8b		Worker - inhalative, long- term - local 9,91mg/m <sup>3</sup>		0,014
PROC8b		Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated \* (local emission fraction) \* (local WWTP flow rate fraction) \* (local river flow rate fraction) \* (local STP efficiency fraction)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1. Short title of Exposure Sc	enario 10: Hees in coatir	nge -			
1. Short title of Exposure 30		<u> </u>			
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)				
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available				
Environmental Release Categories		door use of processing aids in open systems utdoor use of processing aids in open systems			
		exposure for: ERC8a, ERC8d			
2.1 Contributing Section Co		·			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).			
Amount used	Daily amount per site	3 kg			
	Fraction used at the main local source.	0,002			
	Annually total	5000 tonnes			
Frequency and duration of use	Continuous exposure	365 days/year			
Environment factors not	Flow rate of receiving surface water	18.000 m3/d			
influenced by risk management	Dilution Factor (River)	10			
	Dilution Factor (Coastal Areas)	100			
	Emission or Release Factor: Air	90 %			
Other given operational	Emission or Release Factor: Water	90 %			
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %			
	Indoor use.				
	Processing temperature: A	mbient temperature			
	Processing pressure: Amb	ient temperature			
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation			
measures to reduce or limit discharges, air emissions and releases to soil	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.			
Organizational measures to	Water	Treat onsite wastewater (prior to receiving water			
PA100623 001	52/69	FI			



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

prevent/limit release from the site		discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %)
		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d
to sewage treatment plant	Percentage removed from waste water	87 %
	Sludge Treatment	Disposal or recovery
Conditions and measures related to external treatment of waste for	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
disposal	Disposal methods	Dispose of waste product or used containers according to local regulations.
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC1, PROC2, PROC8a, PROC8b,
PROC10, PROC11, PROC	13, PROC19	, , , , , , , , , , , , , , , , , , , ,
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
Product characteristics	Physical Form (at time of use)	liquid, spray aerosol
	Vapour pressure	98 hPa
Amount used	n.a. in tier 1 TRA MODEL	
	Frequency of use	< 300 days/year
	Frequency of use	> 4 days/week
Frequency and duration of use	Exposure duration per day	> 240 min(PROC1, PROC2)
Trequency and duration of use	Exposure duration per day	60 - 240 min(PROC10, PROC11, PROC13)
	Exposure duration per day	15 - 60 min(PROC8a, PROC8b, PROC19)
Human factors not influenced by risk management	Exposed skin areas	Hands and forearms. 1500 cm <sup>2</sup>
Other operational conditions	Indoor use.	
affecting workers exposure	Outdoor use.(PROC1)	
	General exposures Continuous process	Clear spills immediately. Ensure operation is undertaken outdoors.(PROC1)
Technical conditions and measures to control dispersion from source towards the worker	General exposures Continuous process with sample collection	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC2)
	Bulk transfers	Ensure material transfers are under containment or



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	Non-dedicated facility	extract ventilation. Provide extract ventilation to points where emissions occur. Use drum pumps or carefully pour from container. Locate bulk storage outdoors. Clear spills immediately.(PROC8a)		
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation.  Provide extract ventilation to points where emissions occur.  Clear transfer lines prior to de-coupling.  Retain drain downs in sealed storage pending disposal or for subsequent recycle.  Locate bulk storage outdoors.  Clear spills immediately.(PROC8b)		
	Roller, spreader, flow application cleaning Machine Manual	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC10)		
	Treatment by dipping and pouring Machine Manual	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC13)		
	Spraying/fogging by manual application with potential for aerosol generation	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Ensure that a spraying booth is used. Clear spills immediately.(PROC11)		
	Transfer from/pouring from containers Mixing operations (closed systems) Manual without local exhaust ventilation Indoor.	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC19)		
Conditions and measures related to personal protection, hygiene and health evaluation	to personal protection, hygiene Wear a respirator conforming to EN140 with Type A filter or better.			
Butyl rubber gloves offer good protection				

### 3. Exposure estimation and reference to its source

#### **Environment**

ERC8a, ERC8d: EUSES 2.1

### Brenntag S.p.A.



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8d		Fresh water	PEC	0,139mg/L	0,535
ERC8a, ERC8d		Marine water	PEC	0,014mg/L	0,535
ERC8a, ERC8d		Fresh water sediment	PEC	0,186mg/kg	0,664
ERC8a, ERC8d		Marine sediment	PEC	0,019mg/kg	0,066
ERC8a, ERC8d		Soil	PEC	0,0002mg/kg	< 0,001
ERC8a, ERC8d		Sewage treatment plant (STP)	PEC	1,369mg/L	0,002
ERC8a, ERC8d		Total daily intake via local environment	PEC	0,003mg/kg bw/day	< 0,001

#### Workers

PROC1, PROC2, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC19: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Worker - inhalative, long- term - local	0,154mg/m³	< 0,001
PROC1		Worker - dermal, long- term - systemic	0,342mg/kg bw/day	0,0054
PROC2		Worker - inhalative, long- term - local	22,03mg/m³	0,03
PROC2		Worker - dermal, long- term - systemic	0,137mg/kg bw/day	0,0022
PROC8a		Worker - inhalative, long- term - local	44,05mg/m³	0,06
PROC8a		Worker - dermal, long- term - systemic	0,137mg/kg bw/day	0,0022
PROC8b		Worker - inhalative, long- term - local	11,01mg/m³	0,015
PROC8b		Worker - dermal, long- term - systemic	0,686mg/kg bw/day	0,011
PROC10		Worker - inhalative, long- term - local	132,15mg/m³	0,18
PROC10		Worker - dermal, long- term - systemic	1,37mg/kg bw/day	0,022
PROC11		Worker - inhalative, long- term - local	264,3mg/m³	0,36
PROC11		Worker - dermal, long- term - systemic	2,14mg/kg bw/day	0,034
PROC13		Worker - inhalative, long- term - local		
PROC13		Worker - dermal, long-	0,69mg/kg bw/day	0,011



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	term - systemic		
PROC19	 Worker - inhalative, long- term - local	220,25mg/m <sup>3</sup>	0,30
PROC19	 Worker - dermal, long- term - systemic	28,28mg/kg bw/day	0,45

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated \* (local emission fraction) \* (local WWTP flow rate fraction) \* (local river flow rate fraction) \* (local STP efficiency fraction)

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

#### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Short title of Exposure Someone     Main User Groups  Process categories	SU 22: Professional uses: entertainment, services, cr PROC2: Use in closed, co PROC4: Use in batch and exposure arises PROC8a: Transfer of subs	Public domain (administration, education, aftsmen) entinuous process with occasional controlled exposure				
·	PROC2: Use in closed, co PROC4: Use in batch and exposure arises PROC8a: Transfer of subs	ntinuous process with occasional controlled exposure				
Process categories	PROC4: Use in batch and exposure arises PROC8a: Transfer of subs					
	PROC8b: Transfer of subsvessels/ large containers a PROC11: Non industrial s	PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring				
Environmental Release Categories	ERC8c: Wide dispersive in ERC8d: Wide dispersive of	ndoor use of processing aids in open systems ndoor use resulting in inclusion into or onto a matrix outdoor use of processing aids in open systems utdoor use resulting in inclusion into or onto a matrix				
	-	exposure for: ERC8a, ERC8c, ERC8d, ERC8				
Amount used	Daily amount per site	2,7 kg				
Frequency and duration of use	Continuous exposure	365 days/year				
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d				
	Dilution Factor (River)	10				
	Dilution Factor (Coastal Areas)	100				
Other given enerational	Emission or Release Factor: Air	0,9				
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Water	0,01				
<u> </u>	Emission or Release Factor: Soil	0,09				
Technical conditions and measures at process level		prevent soil and water pollution in the event of spillage charge consistent with regulatory requirements.				
(source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	,					
Conditions and measures related	Domestic sewage treatme	nt is not assumed.				
to sewage treatment plant		External treatment and disposal of wests should				
Conditions and measures related to external treatment of waste for disposal	Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.					
•	ontrolling worker exposi	ure for: PROC2, PROC4, PROC8a, PROC8b,				
Product characteristics	Concentration of the	Covers percentage substance in the product up to				
PA100623_001	57/69	F				



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	Substance in Mixture/Article	25 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amount used	n.a. in tier 1 TRA MODEL	
	Frequency of use	< 240 days/year
	Frequency of use	> 4 days/week
Frequency and duration of use	Exposure duration per day	> 240 min
	Exposure duration per day	< 60 min(PROC8a, PROC13)
Technical conditions and measures to control dispersion from source towards the worker	Spraying/fogging by manual application Indoor. with local exhaust ventilation with potential for aerosol generation	Carry out in a vented booth or extracted enclosure. Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20.(PROC11)
	Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8a)
Conditions and measures related to personal protection, hygiene	Spraying/fogging by manual application Indoor. with local exhaust ventilation with potential for aerosol generation	Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin.(PROC11)
and health evaluation	Spraying/fogging by manual application Outdoor. with potential for aerosol generation	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin.(PROC11)
	Outdoor. with potential for aerosol	Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin.(PROC11)

#### 3. Exposure estimation and reference to its source

#### **Environment**

**EUSES 2.1** 

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
		Fresh water	PEC	0,66μg/L	0,00254
		Marine water	PEC	0,117μg/L	0,0045
		Fresh water	PEC	3,97µg/kg dry	0,00318



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	sediment		weight (d.w.)	
 	Marine sediment	PEC	0,703μg/kg dry weight (d.w.)	0,00562
 	Soil	PEC	0,247μg/kg dry weight (d.w.)	0,00103
 	Sewage treatment plant (STP)	PEC	0,165μg/L	< 0,0001

ESVOC spERC 8.11a.v1 has been used to evaluate the exposure for the environment.

#### Workers

PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2		Inhalation worker exposure	12ppm	0,06
PROC2		Dermal worker exposure	0,822mg/kg/day	0,013
PROC4		Inhalation worker exposure	30ррт	0,15
PROC4		Dermal worker exposure	4,116mg/kg/day	0,065
PROC8a		Inhalation worker exposure	1 12nnm	
PROC8a		Dermal worker exposure	8,226mg/kg/day	0,131
PROC8b		Inhalation worker exposure	30ррт	0,15
PROC8b		Dermal worker exposure	4,116mg/kg/day	0,065
PROC11		Inhalation worker exposure	worker 30ppm	
PROC11		Dermal worker exposure	12,857mg/kg/day	0,204
PROC13		Inhalation worker exposure	12ppm	0,06
PROC13		Dermal worker exposure	8,226mg/kg/day	0,131

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

#### Additional good practice advice beyond the REACH Chemical Safety Assessment



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)			
Chemical product category	PC1: Adhesives, sealants			
	PC9a: Coatings and paints	·		
Environmental Release Categories	ERC8a: Wide dispersive in	door use of processing aids in open systems		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a		
Product characteristics	Concentration of the Substance in Substance in Mixture/Article  Covers percentage substance in the product 25 %.			
	Daily amount per site	0,3 kg		
Amount used	Fraction used at the main local source.	0,002		
	Annually total	500 tonnes		
requency and duration of use	Continuous exposure	365 days/year		
	Flow rate of receiving surface water	18.000 m3/d		
Environment factors not nfluenced by risk management	Dilution Factor (River)	10		
mideriood by not management	Dilution Factor (Coastal Areas)	100		
	Emission or Release Factor: Air	90 %		
Other given operational	Emission or Release Factor: Water	90 %		
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %		
	Indoor use.			
	Processing temperature: Ambient temperature			
	Processing pressure: Ambient pressure.			
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related o sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d		
	Degradation efficiency	70 %		
	Sludge Treatment	Disposal or recovery		
Conditions and measures related o external treatment of waste for				
disposal 2.2 Contributing scenario co	ntrolling consumer expe	osure for: PC1: Glues, hobby use		
Activity	spray application	Journal of Glado, Hobby add		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.		



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amount used	Amount used per event	150 g
	Frequency of use	0 - 5 events/year
Frequency and duration of use	Exposure duration per event	60 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m3

# 2.3 Contributing scenario controlling consumer exposure for: PC1: Glues DIY-use (carpet glue, tile glue, wood parquet glue)

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amount used	Amount used per event	150 g
	Frequency of use	0 - 5 events/year
Frequency and duration of use	Exposure duration per event	60 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m3

# 2.4 Contributing scenario controlling consumer exposure for: PC9a: Solvent rich, high solid, water borne paint

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amazunturaad	A management are and management	150 -
Amount used	Amount used per event	150 g
	Frequency of use	0 - 5 events/year
Frequency and duration of use	Exposure duration per event	60 min
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>
risk management		
Other given operational	Room size	20 m3
conditions affecting consumers		

### Brenntag S.p.A.



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

2.5 Contributing scenario controlling consumer exposure for: PC9a: Aerosol spray can

Concentration of the Covers percentage substance in the pro-

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amount used	Amount used per event	150 g
	Frequency of use	0 - 5 events/year
Frequency and duration of use	Exposure duration per event	25 min
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>
risk management		
Other given operational	Room size	20 m3
conditions affecting consumers		

#### 3. Exposure estimation and reference to its source

#### **Environment**

exposure

ERC8a: EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC	0,0044mg/L	0,017
ERC8a		Marine water	PEC	0,0004mg/L	0,017
ERC8a		Fresh water sediment	PEC	0,0059mg/kg	0,021
ERC8a		Marine sediment	PEC	0,0005mg/kg	0,002
ERC8a		Soil	PEC	0,0001mg/kg	< 0,001
ERC8a		Sewage treatment plant (STP)	PEC	0,0161mg/L	< 0,001
ERC8a		Total daily intake via local environment	PEC	0,0001mg/kg bw/day	< 0,001

#### Consumers

PC1, PC9a: Solvent rich, high solid, water borne paint, PC9a: Aerosol spray can: ConsExpo 4.1

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC1		Consumer inhalation exposure	29,9mg/m³	0,245
PC1		Consumer dermal exposure	0,04mg/kg bw/day	0,00108
PC9a: Solvent		Consumer inhalation	0,03mg/m <sup>3</sup>	0,000246



### Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

rich, high solid, water borne paint	exposure		
PC9a: Solvent rich, high solid, water borne paint	 Consumer dermal exposure	0,02mg/kg bw/day	0,000541
PC9a: Aerosol spray can	 Consumer inhalation exposure	1,3mg/m³	0,0107
PC9a: Aerosol spray can	 Consumer dermal exposure	0,02mg/kg bw/day	0,000541

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra

For further information on the assessment method, see:

http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

1. Short title of Exposure So Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial			
Process categories	PROC2: Use in closed, cor PROC3: Use in closed bate PROC4: Use in batch and exposure arises PROC5: Mixing or blending and articles (multistage and PROC7: Industrial spraying PROC8a: Transfer of subsivessels/ large containers at PROC8b: Transfer of subsivessels/ large containers at PROC10: Roller application PROC13: Treatment of arti PROC15: Use as laborator PROC9: Transfer of substafilling line, including weighin	tance or preparation (charging/ discharging) from/ to non-dedicated facilities tance or preparation (charging/ discharging) from/ to dedicated facilities or brushing cles by dipping and pouring y reagent ance or preparation into small containers (dedicated		
Environmental Release Categories	ERC4: Industrial use of propart of articles	cessing aids in processes and products, not becomin		
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC4		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 100%		
	Regional use tonnage:	0,1		
Amount used	Fraction used at the main local source.	0,05		
	Annually total	60000 tonnes		
Frequency and duration of use	Continuous exposure	300 days/year		
Environment factors not	Dilution Factor (River)	10		
influenced by risk management	Dilution Factor (Coastal Areas)	100		
	Emission or Release Factor: Air	98 %		
Other given operational conditions affecting	Emission or Release Factor: Water	2 %		
environmental exposure	Emission or Release Factor: Soil	0 %		
	Indoor use.			
Technical conditions and		Use containment measures to reduce fugitive emissions. (Efficiency: > 80 %)		
measures at process level (source) to prevent release	Air	emissions. (Efficiency: > 80 %)		



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		purposes of REACH compliance but may be needed to comply with other environmental legislation, Use appropriate emission abatement equipment from LEV systems if required by local legislation., Use of technical measures such as catalytic or thermal oxidation to reduce emissions to air.	
	Water	Onsite wastewater treatment required, If discharging to domestic sewage treatment plant, no onsite wastewater treatment required., Do not release wastewater directly into environment.	
	Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 88 %)	
		event soil and water pollution in the event of spillage. harge consistent with regulatory requirements.	
	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d	
to sewage treatment plant	Percentage removed from waste water	87 %	
	Sludge Treatment	Disposal or recovery	
Conditions and managers related	Waste treatment	Treat all waste as hazardous waste	
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Hazardous waste incineration., Dispose of waste used sacks/containers according to local regulations. (Efficiency: 99,98 %)	
		ire for: PROC1, PROC2, PROC3, PROC4, C10, PROC13, PROC14, PROC15	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 100 hPa	
Frequency and duration of use	Frequency of use	8 hours/day	
Other operational conditions affecting workers exposure	Indoor use.		
and any marries of page and	General exposures	Handle substance within a closed system.(PROC1)	
Technical conditions and measures to control dispersion from source towards the worker	Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Use drum pumps or carefully pour from container. Locate bulk storage outdoors.(PROC8a)	
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation.	



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

j		Durante autoritation to a late advant
		Provide extract ventilation to points where emissions occur. Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors.(PROC8b)
	Film formation - force drying (50-100 ℃). Stoving (>100 ℃). UV/EB radiation curing	Use ventilation to extract vapours from freshly coated articles/objects.(PROC2)
	Film formation - air drying	Use ventilation to extract vapours from freshly coated articles/objects.(PROC4)
	Provide extract ventilation to	to points where emissions occur.(PROC5)
		or extracted enclosure.(Automatic/robotic PROC7)
	Carry out in a vented booth or extracted enclosure.(Manual PROC7)	
	Provide extract ventilation to material transfer points and other openings.(PROC8a)  Ensure material transfers are under containment or extract ventilation.(PROC8b)	
	Ensure material transfers a	,
	Indoor.	Provide extract ventilation to points where emissions occur.(PROC10)
	Indoor.	Provide extract ventilation to points where emissions occur.(PROC13)
	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC14)	
Organisational measures to prevent /limit releases, dispersion and exposure	Bulk transfers Non-dedicated facility	If technical measures not practical: Avoid carrying out operation for more than 1 hour.(PROC8a)
	Bulk transfers Dedicated facility	If technical measures not practical: Avoid carrying out operation for more than 1 hour.(PROC8b)
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Butyl rubber gloves offer good protection	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear respiratory protection Wear face protection. Wear a full face respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(Manual PROC7)	
	with local exhaust ventilation	(Efficiency: 90 %)(PROC2, PROC5, PROC8a, PROC9, PROC13, PROC14)
	with local exhaust ventilation	(Efficiency: 95 %)(PROC7)
	with local exhaust ventilation	(Efficiency: 97 %)(PROC8b)

#### 3. Exposure estimation and reference to its source



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

#### **Environment**

**ERC4: ECETOC TRA** 

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4		Fresh water sediment	PEC	0,718mg/kg dry weight (d.w.)	
ERC4		Marine water	PEC	0,012mg/L	
ERC4		Marine sediment	PEC	0,0719mg/kg dry weight (d.w.)	
ERC4	180 days	Soil	PEC	0,0413mg/kg dry weight (d.w.)	
ERC4	30 days	Soil	PEC	0,082mg/kg dry weight (d.w.)	
ERC4	180 days	Grassland	PEC	0,0435mg/kg dry weight (d.w.)	
ERC4	Annual average	Air	PEC	0,224mg/m <sup>3</sup>	

### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	General exposures (closed systems)	Inhalation worker exposure	0,01ppm	< 0,001
PROC1	General exposures (closed systems)	Dermal worker exposure	0,03mg/kg bw/day	< 0,001
PROC2	General exposures (closed systems), Use in contained systems, with sample collection	Inhalation worker exposure	25ppm	0,125
PROC2	General exposures (closed systems), Use in contained systems, with sample collection	Consumer dermal exposure	1,3mg/kg bw/day	0,022
PROC2	Film formation - force drying (50-100 °C). Stoving (>100 °C). UV/EB radiation curing	Inhalation worker exposure	12,5ppm	0,063
PROC2	Film formation - force drying (50-100 ℃). Stoving (>100 ℃). UV/EB	Dermal worker exposure	1,3mg/kg bw/day	0,022



Print Date 02.02.2017

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## Ethyl acetate

Version 2.0

Revision date / valid from 16.02.2017

	radiation curing			
PROC3	Mixing operations (closed systems), General exposures	Inhalation worker exposure	50ppm	0,25
PROC3	Mixing operations (closed systems), General exposures	Dermal worker exposure	0,69mg/kg bw/day	0,011
PROC4	Film formation - air drying	Inhalation worker exposure	10ppm	0,05
PROC4	Film formation - air drying	Dermal worker exposure	6,8mg/kg bw/day	0,109
PROC5	Preparation of material for application, Mixing operations (open systems)	Inhalation worker exposure	25ppm	0,125
PROC5	Preparation of material for application, Mixing operations (open systems)	Dermal worker exposure	14mg/kg bw/day	0,218
PROC7	Spraying (automatic/robotic)	Inhalation worker exposure	25ppm	0,125
PROC7	Spraying (automatic/robotic)	Dermal worker exposure	43mg/kg bw/day	0,68
PROC7	Spraying	Inhalation worker exposure	25ppm	0,125
PROC7	Spraying	Dermal worker exposure	43mg/kg bw/day	0,68
PROC8a	Non-dedicated facility	Dermal worker exposure	14mg/kg bw/day	0,218
PROC8a	Non-dedicated facility	Inhalation worker exposure	25ppm	0,125
PROC8b	material transfers, Dedicated facility	Dermal worker exposure	14mg/kg bw/day	0,218
PROC8b	material transfers, Dedicated facility	Inhalation worker exposure	4,5ppm	0,023
PROC10	Roller, spreader, flow application	Dermal worker exposure	27mg/kg bw/day	0,435
PROC10	Roller, spreader, flow application	Inhalation worker exposure	25ppm	0,125
PROC13	Dipping, immersion and pouring	Dermal worker exposure	14mg/kg bw/day	0,218
PROC13	Dipping, immersion and pouring	Inhalation worker exposure	25ppm	0,125
PROC15	Laboratory activities	Dermal worker exposure	0,34mg/kg bw/day	0,005
PROC15	Laboratory activities	Inhalation worker exposure	50ppm	0,25
PROC9	material transfers, Drum/batch transfers, Transfer from/pouring from containers	Inhalation worker exposure	20ppm	0,1



## Ethyl acetate

Version 2.0 Print Date 02.02.2017

Revision date / valid from 16.02.2017

PROC9	material transfers, Drum/batch transfers, Transfer from/pouring from containers	Dermal worker exposure	6,8mg/kg bw/day	0,109
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation	Dermal worker exposure	3,4mg/kg bw/day	0,054
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation	Inhalation worker exposure	25ppm	0,125

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### acetone

Version 2.0 Print Date 09.05.2016

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environm ental Release Category (ERC)	Article Category (AC)	Specified
1	Distribution of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7846
2	Formulation & (re)packing of substances and mixtures	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES13324
3	Polymer processing	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7684
4	Polymer processing	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7743
5	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 19	4	NA	ES7686
6	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 19	8a, 8d	NA	ES7745
7	Use in Cleaning Agents	21	NA	3, 4, 9a, 9b, 9c, 24, 35, 38	NA	8a, 8d	NA	ES8831
8	Use in laboratories	3	NA	NA	10, 15, 19	4	NA	ES7670
9	Use in laboratories	22	NA	NA	10, 15, 19	8a	NA	ES7735
10	Use in de-icing and anti-icing applications	22	NA	NA	1, 2, 8b, 11, 19	8d	NA	ES7751
11	Use in de-icing and anti-icing applications	21	NA	4	NA	8d	NA	ES8832
12	Use in oil and gas field drilling and production operations	3	NA	NA	1, 2, 3, 4, 8a, 8b	4	NA	ES7688
13	Use in oil and gas field drilling and production operations	22	NA	NA	1, 2, 3, 4, 8a, 8b	8d	NA	ES7747
14	Explosives manufacture & use	22	NA	NA	1, 3, 5, 8a, 8b	8d	NA	ES7753
15	Use as processing aid	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7845
16	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 15, 19	4	NA	ES7672



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### acetone

Version 2.0 Print Date 09.05.2016

Use as binders and release agents	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13	5	NA	ES7678
Rubber production and processing	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14	6d	NA	ES7680
Polymer production	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7682
Use as blowing agents	3	NA	NA	1, 2, 3, 8b, 9, 12	4, 10a	NA	ES7690
Uses in coatings	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 15, 19	8a, 8c, 8d, 8f	NA	ES7737
Use as binders and release agents	22	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11	8a, 8b, 8c, 8d, 8e, 8f	NA	ES7739
Polymer production	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7741
Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13, 19	8a, 8d	NA	ES7749
Uses in coatings	21	NA	1, 4, 9a, 9b, 9c, 15, 24, 31	NA	8a, 8c, 8d, 8f	NA	ES8830
	release agents  Rubber production and processing  Polymer production  Use as blowing agents  Uses in coatings  Use as binders and release agents  Polymer production  Use in agrochemicals	Rubber production and processing 3  Polymer production 3  Use as blowing agents 3  Uses in coatings 22  Use as binders and release agents 22  Polymer production 22  Use in agrochemicals 22	Rubber production and processing 3 NA  Rubber production and processing 3 NA  Polymer production 3 NA  Use as blowing agents 3 NA  Uses in coatings 22 NA  Use as binders and release agents 22 NA  Polymer production 22 NA  Use in agrochemicals 22 NA	Rubber production and processing 3 NA NA NA  Rubber production and processing 3 NA NA NA  Polymer production 3 NA NA  Use as blowing agents 3 NA NA  Uses in coatings 22 NA NA  Polymer production 22 NA NA  Use in agrochemicals 22 NA NA  Use in agrochemicals 22 NA NA  Uses in coatings 21 NA NA  I, 4, 9a, 9b, 9c, 15, 24,	Use as binders and release agents         3         NA         NA         5, 6, 7, 8a, 8b, 9, 10, 13           Rubber production and processing         3         NA         NA         NA         1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14           Polymer production         3         NA         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15           Use as blowing agents         3         NA         NA         NA         1, 2, 3, 4, 5, 68a, 8b, 9, 10, 13, 14, 15           Uses in coatings         22         NA         NA         NA         5, 8a, 8b, 9, 10, 11, 13, 15, 19           Use as binders and release agents         22         NA         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19           Polymer production         22         NA         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19           Use in agrochemicals         22         NA         NA         NA         1, 2, 8a, 8b, 9, 10, 11, 11, 13, 19           Uses in coatings         21         NA         NA         NA         1, 2, 4, 8a, 8b, 9, 14           Uses in coatings         21         NA         NA         NA         NA         11, 13, 19	Use as binders and release agents         3         NA         NA         5, 6, 7, 8a, 8b, 9, 10, 13         5           Rubber production and processing         3         NA         NA         NA         1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14         6d           Polymer production         3         NA         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15         6d           Use as blowing agents         3         NA         NA         NA         1, 2, 3, 4, 5, 8a, 8b, 9, 10, 13, 14, 15         4, 10a           Uses in coatings         22         NA         NA         NA         1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 8d, 8f         8a, 8c, 8d, 8f           Use as binders and release agents         22         NA         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 8d, 8f         8a, 8b, 9, 10, 11, 13, 15, 19           Polymer production         22         NA         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 8d, 8f         8a, 8b, 9, 10, 11, 13, 15, 19           Use in agrochemicals         22         NA         NA         NA         1, 2, 8a, 8b, 9, 10, 8d, 8f         8a, 8c, 8d, 8f           Uses in coatings         21         NA         NA         NA         1, 2, 4, 8a, 8d, 8d, 8d         8a, 8c, 8d, 8f	Use as binders and release agents         3         NA         NA         5, 6, 7, 8a, 8b, 9, 10, 13         5         NA           Rubber production and processing         3         NA         NA         1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14         6d         NA           Polymer production         3         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15         6d         NA           Use as blowing agents         3         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15         4, 10a         NA           Use as blowing agents         3         NA         NA         1, 2, 3, 4, 5, 8a, 8b, 9, 12         4, 10a         NA           Use as blowing agents         22         NA         NA         1, 2, 3, 4, 5, 8a, 8b, 9, 12         8a, 8c, 8d, 8d, 8f         NA           Use as binders and release agents         22         NA         NA         1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19         8a, 8b, 9, 10, 11, 11, 13, 15, 19           Polymer production         22         NA         NA         1, 2, 3, 4, 8a, 8b, 9, 10, 8c, 8d, 8d, 8d, 8d, 8d, 8d, 8d, 8d, 8d, 8d



### acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco					
Main User Groups	SU 3: Industrial uses: Uses sites	s of substances as such or in preparations at industria			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent				
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of				
	intermediates)	aning in manufacture of another substance (use of			
2.1 Contributing scenario co	intermediates)	exposure for: ERC1, ERC2, ERC4, ERC6a			
2.1 Contributing scenario co  Substance is a unique structure, F	intermediates) ntrolling environmental	<u> </u>			
	intermediates) ntrolling environmental	<u> </u>			
Substance is a unique structure, F	intermediates)  ntrolling environmental  Readily biodegradable.	<u> </u>			
Substance is a unique structure, F Amount used	intermediates)  ntrolling environmental  Readily biodegradable.  To be defined by site	exposure for: ERC1, ERC2, ERC4, ERC6a			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	intermediates)  ntrolling environmental  Readily biodegradable.  To be defined by site  Continuous exposure	exposure for: ERC1, ERC2, ERC4, ERC6a			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	intermediates)  ntrolling environmental  Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.	exposure for: ERC1, ERC2, ERC4, ERC6a  360 days/year  Treat air emission to provide a typical removal			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	intermediates)  ntrolling environmental  Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air	exposure for: ERC1, ERC2, ERC4, ERC6a  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air	exposure for: ERC1, ERC2, ERC4, ERC6a  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air	exposure for: ERC1, ERC2, ERC4, ERC6a  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	intermediates)  Introlling environmental  Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary access and access a	exposure for: ERC1, ERC2, ERC4, ERC6a  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to	intermediates)  Introlling environmental Readily biodegradable.  To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air Common practices vary accestimates used.	exposure for: ERC1, ERC2, ERC4, ERC6a  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release este in accordance with environmental legislation and			



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
Technical conditions and measures to control dispersion	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.			
from source towards the worker  Sample via a closed loop or other system to avoid exposure.  Handle substance within a closed system.(PROC1, PROC2, PROC3)				
Conditions and measures related to personal protection, hygiene and health evaluation				

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15: FCFTOC TRA

LULIUU INA				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PA100058_001		15/98		EN



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC9	 Inhalation	200ppm	0,40
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



### acetone

Version 2.0 Print Date 09.05.2016

Main User Groups	SU 3: Industrial uses: Use	& (re)packing of substances and mixtures es of substances as such or in preparations at industria			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent				
Environmental Release Categories	PROC15: Use as laboratory reagent  ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)				
2.1 Contributing scenario co	ntrolling environmenta	al exposure for: ERC1, ERC2, ERC4, ERC6a			
Substance is a unique structure, F	Readily biodegradable.				
Amount used	To be defined by site				
Frequency and duration of use	Continuous exposure	360 days/year			
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.				
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)			
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers			
measures to reduce or limit	Air	or, Charcoal adsorbers			
discharges, air emissions and releases to soil Organizational measures to	Common practices vary a estimates used.	cross sites thus conservative process release			
prevent/limit release from the					
site					
Conditions and measures related to external treatment of waste for disposal  Conditions and measures related					



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15					
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).			
	Physical Form (at time of use)	liquid			
	Vapour pressure	> 10 kPa			
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).			
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.				
from source towards the worker	Sample via a closed loop or other system to avoid exposure.  Handle substance within a closed system.(PROC1, PROC2, PROC3)				
Conditions and measures related to personal protection, hygiene and health evaluation					

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15: ECETOC TRA

202100 1101				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30
l				



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

Ш	PROC8b PROC9	 Dermal	6,86mg/kg/day	0,037
	PROC9	 Inhalation	200ppm	0,40
	PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

 $\label{lem:consortium} ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx$ 

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



### acetone

Version 2.0 Print Date 09.05.2016

	enario 3: Polymer proces	33119	
Main User Groups	SU 3: Industrial uses: Uses sites	s of substances as such or in preparations at industria	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent		
Environmental Release	ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers		
Categories	production of resins, rubber	rs, polymers	
	production of resins, rubber	rs, polymers	
Categories	production of resins, rubber	rs, polymers	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F	production of resins, rubber	rs, polymers	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used	production of resins, rubber ntrolling environmental Readily biodegradable.	rs, polymers	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure	ntrolling environmental Readily biodegradable. To be defined by site	exposure for: ERC6d	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure	exposure for: ERC6d	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release	production of resins, rubber  ntrolling environmental  Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.	exposure for: ERC6d  360 days/year  Treat air emission to provide a typical removal	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release  Technical onsite conditions and	production of resins, rubber ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air	exposure for: ERC6d  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to	production of resins, rubber ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air	exposure for: ERC6d  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to prevent/limit release from the site	production of resins, rubber ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air Common practices vary ac estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to prevent/limit release from the site  Conditions and measures related to external treatment of waste for disposal	production of resins, rubber ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air Common practices vary ac estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to prevent/limit release from the site  Conditions and measures related to external treatment of waste for disposal  Conditions and measures related	production of resins, rubber  ntrolling environmental  Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary ac estimates used.  Contain and dispose of was according to local regulation	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Categories  2.1 Contributing scenario co  Substance is a unique structure, F Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste  2.2 Contributing scenario co	production of resins, rubber ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air Common practices vary ac estimates used.  Contain and dispose of was according to local regulatio If recycling is not practicable ntrolling worker exposu	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release este in accordance with environmental legislation and ons.	



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Substance in Mixture/Article	100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
from source towards the worker	Sample via a closed loop or other system to avoid exposure.  Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15; ECETOC TRA

Inhalation Dermal	0,01ppm 0,34mg/kg/day	0,00002 0,002
	0,34mg/kg/day	0,002
Inhalation	50ppm	0,10
Dermal	1,37mg/kg/day	0,01
Inhalation	100ppm	0,20
Dermal	6,86mg/kg/day	0,04
Dermal	13,71mg/kg/day	0,07
Dermal	27,43mg/kg/day	0,15
Inhalation	250ppm	0,50
Inhalation	150ppm	0,30
Dermal	6,86mg/kg/day	0,037
 Inhalation	200ppm	0,40
 Dermal	13,71mg/kg/day	0,074
	Dermal Inhalation Dermal	Dermal 6,86mg/kg/day Inhalation 200ppm



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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acetone	
Version 2.0 Print Date 09.05.	.2016
Revision date / valid from 09.05.2016	
PROC14, Dermal 0,34mg/kg/day 0,00	

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



### acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco	enario 4: Polymer proce	ssing	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
2.2 Contributing scenario co PROC9, PROC14	ntrolling worker exposu	re for: PROC1, PROC2, PROC8a, PROC8b,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
PA100058_001	23/98	EN	



### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Tashniag anditions and	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2)
Technical conditions and measures to control dispersion	Ensure material transfers are under containment or extract ventilation.
from source towards the worker	or
nom source towards the worker	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
	Ensure material transfers are under containment or extract ventilation.
	or
	Avoid carrying out operation for more than 4 hours.(PROC14)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC14: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC14		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	20ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC8a, PROC14	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a, PROC14	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8b, PROC9		Inhalation	250ppm	0,50
PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC14		Dermal	3,43mg/kg/day	0,02
•				



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

 $ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx$ 

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

ssumes a good basic standard of occupational hygiene is implemented.			



### acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sci	enario 5: Use in Cleanin	g Agents	
Main User Groups	SU 3: Industrial uses: Use sites	s of substances as such or in preparations at industrial	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	-	ocessing aids in processes and products, not becoming	
2.1 Contributing scenario co	ntrolling environmental	ovnesure for EDC4	
2.1 Continuating Scenario Co		exposure for: EnC4	
Substance is a unique structure, F		exposure for: EnC4	
<u> </u>		exposure for: EnC4	
Substance is a unique structure, F	Readily biodegradable.	360 days/year	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting	Readily biodegradable.  To be defined by site	•	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	Readily biodegradable.  To be defined by site  Continuous exposure	•	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.	360 days/year  Treat air emission to provide a typical removal	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air	360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary according to the continuous of	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary accestimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary acceptimates used.  Contain and dispose of was according to local regulation.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary acceptimates used.  Contain and dispose of was according to local regulation.  If recycling is not practicabentrolling worker exposurates.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons.  The for: PROC1, PROC2, PROC3, PROC4,	



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.  Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3) Ensure material transfers are under containment or extract ventilation. or		
Conditions and measures related to personal protection, hygiene	employee training.		
and health evaluation	If above technical/organisational control measures are not feasible, then adopt following PPE:  Wear a respirator conforming to EN140 with Type A filter or better.(PROC7)		

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC8a, PROC10, PROC13, PROC19		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7		Dermal	2,14mg/kg/day	0,01
PA100058 001		27/98		FN



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC7		Inhalation	350ppm	0,70
PROC7	Outdoor use., 30% efficiency	Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC10		Dermal	27,43mg/kg/day	0,15
PROC13		Dermal	13,71mg/kg/day	0,074
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

 $\label{lem:consortium} ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx$ 

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



### acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sc	enario 6: Use in Cleanin	g Agents		
Main User Groups		SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available			
Environmental Release Categories	ERC8a: Wide dispersive in	ndoor use of processing aids in open systems autdoor use of processing aids in open systems		
2. I Contributina scenario co	introlling environmental			
Substance is a unique structure, F	Readily biodegradable.	exposure for: ERC8a, ERC8d		
Substance is a unique structure, F Amount used	Readily biodegradable.  To be defined by site	·		
Substance is a unique structure, F Amount used Frequency and duration of use	Readily biodegradable.	360 days/year		
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure	Readily biodegradable.  To be defined by site	·		
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level	Readily biodegradable.  To be defined by site  Continuous exposure	·		
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and neasures at process level source) to prevent release	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.	360 days/year  Treat air emission to provide a typical removal		
Substance is a unique structure, Famount used  Frequency and duration of use Other given operational conditions affecting environmental exposure  Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air	360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
Substance is a unique structure, Famount used  Frequency and duration of use Other given operational conditions affecting environmental exposure  Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers		
Substance is a unique structure, Information of use Description of the Programment of the	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary ac estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release		
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary acceptimates used.  Contain and dispose of was according to local regulation.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release		
Substance is a unique structure, It Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related o external treatment of waste for disposal Conditions and measures related o external recovery of waste	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary acceptimates used.  Contain and dispose of was according to local regulation.  If recycling is not practicate.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons.  Die, dispose of in compliance with local regulations.  Ire for: PROC1, PROC2, PROC3, PROC4,		



SAFETY D	41A SHEET	accord	ing to Reg	uiation	(EC) No. 1907/2	2006
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Version 2.0					Print	Date 09.05.2016
Revision date /	valid from 09 0	5 2016				
Tievision date /	valid from 05.0	3.2010				
		Physical Fuse)	Form (at time of	liquid		
		Vapour pr	essure	> 10 kPa		
Frequency and d	uration of use				unless stated differently	r).
		Provide a	etc. Controlled ve	general ve	ntilation. Natural ventilat ans air is supplied or rei	
					em to avoid exposure. em.(PROC1, PROC2, P	BOC3)
					ntainment or extract ver	
			eration is underta	aken outdoo	ors.(PROC5, PROC8a)	
Technical condition	ana and	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)				
measures to cont		Ensure material transfers are under containment or extract ventilation. or				
from source towards the worker	rds the worker	Limit the substance content in the mixture to 25 %.(PROC10)				
		or Avoid carrying out operation for more than 4 hours.(PROC10)				
		Ensure material transfers are under containment or extract ventilation.				
		or Limit the substance content in the mixture to 25 %.				
		Ensure operation is undertaken outdoors.				
		Avoid carrying out operation for more than 4 hours.(PROC11) or				
		Avoid carrying out operation for more than 1 hour.(PROC11)				
		Avoid carr	ying out operatio	n for more t	han 1 hour.(PROC19)	
		Use suitable eye protection.  Wear chemically resistant gloves (tested to EN374) in combination with 'basic'				
		employee training.				
Conditions and m		If above technical/organisational control measures are not feasible, then adopt following PPE:				
to personal protection and health evaluation		Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)				
and nearin evalue	Mon	If above technical/organisational control measures are not feasible, then adopt following PPE:				
		Limit the substance content in the mixture to 25 %.				
			able gloves tested	d to EN374.	(PROC19)	
3. Exposure e	estimation and	reference	to its source			
Environment						
No information a	vailable.					
Workers						
PROC1, PROC PROC19: ECE		OC4, PROC	5, PROC8a, PRO	C8b, PRO	C9, PROC10, PROC11,	PROC13,
Contributing	Specific con	ditions	Exposure r	outes	Level of Exposure	RCR

Scenario			
PA100058_001	30/98		EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### acetone

Version 2.0 Print Date 09.05.2016

PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3		Inhalation	100ppm	0,20
PROC4, PROC8b, PROC9, PROC13		Inhalation	250ppm	0,50
PROC4, PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5		Dermal	0,07mg/kg/day	0,00
PROC8b		Inhalation	350ppm	0,70
PROC5, PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC5, PROC8a, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC5	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC10		Dermal	1,37mg/kg/day	0,007
PROC10	Concentration of substance in product: 5% - 25%	Dermal	16,46mg/kg/day	0,09
PROC10		Dermal	27,43mg/kg/day	0,15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC11		Inhalation	300ppm	0,60
PROC11	half mask	Inhalation	100ppm	0,20



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

 $ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx \\$ 

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



### acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	onaria 7. Usa in Clasnin	a Agente	
Main User Groups			
Chemical product category	SU 21: Consumer uses: Private households (= general public = consumers)  PC3: Air care products PC4: Anti-freeze and de-icing products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC24: Lubricants, greases, release products PC35: Washing and cleaning products (including solvent based products) PC38: Welding and soldering products (with flux coatings or flux cores), flux products		
Environmental Release Categories		ndoor use of processing aids in open systems utdoor use of processing aids in open systems	
-		exposure for: ERC8a, ERC8d	
-			
Substance is a unique structure, F			
Amount used	To be defined by site	000 days 6	
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of wa according to local regulation	ste in accordance with environmental legislation and ons.	
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co sprays)	ntrolling consumer expo	osure for: PC3: Aircare, instant action (aeroso	
Donale et als aus de viets e	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	spray aerosol	
Amount used	Amount used per event	0,1 g	
	Exposure duration	0,25 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	4 Times per day	



		G. G
acetone		
Version 2.0		Print Date 09.05.2016
Revision date / valid from 09.0	05.2016	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.4 Contributing scenario co (solid & liquid)	ntrolling consumer expo	osure for: PC3: Aircare, continuous action
(come or inquity)	Concentration of the	
Product characteristics	Substance in Mixture/Article	Covers concentrations up to 1%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
	Physical Form (at time of use)	solid
Amount used	Amount used per event	0.49 a
Amount used	Amount used per event  Exposure duration	0,48 g 8 h
Frequency and duration of use	Frequency of use	365 days/year
requericy and duration of use	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 35,70 cm <sup>2</sup>
risk management	=/p0000 01 a. 000	
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.5 Contributing scenario co	ntrolling consumer expe	osure for: PC4: Washing car window
	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	0,5 g
	Exposure duration	0,02 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.	
	ntrolling consumer expe	osure for: PC4: Pouring into radiator
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
	Physical Form (at time of	liquid
PA100058_001	34/98	EN



acetone		
Version 2.0		Print Date 09.05.2016
Revision date / valid from 09.0	5.2016	
	use)	
	Vapour pressure	240 hPa
Amount used	Amount used per event	2000 g
	Exposure duration	0,17 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>
risk management Other given operational		
conditions affecting consumers	Room size	34 m3
exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.
2.7 Contributing scenario co	ntrolling consumer expo	osure for: PC4: Lock de-icer
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	4 g
	Exposure duration	0,25 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 214,4 cm <sup>2</sup>
Other given operational	Room size	34 m3
conditions affecting consumers	Covers use in a one car ga	urage (34m³) under typical ventilation.
2.8 Contributing scenario co		osure for: PC9a: Waterborne latex wall paint
2.5 Contributing Sociatio Co	Concentration of the Substance in	Covers concentrations up to 1,5%
Product characteristics	Mixture/Article Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2760 g
	Exposure duration	2,2 h
Frequency and duration of use	Frequency of use	4 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers		ousehold ventilation., Covers use at ambient
PA100058_001	35/98	EN

PA100058\_001



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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acetone		
Version 2.0		Print Date 09.05.2016
Revision date / valid from 09.0	15 2016	
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exposure	temperatures.	
2.9 Contributing scenario co	· ·	osure for: PC9a: Solvent rich, high solid,
water borne paint	<b>3</b>	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 27,5%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
		T
Amount used	Amount used per event	744 g
	Exposure duration	2,2 h
Frequency and duration of use	Frequency of use	6 days/year
Lluman factors not influenced by	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure		ousehold ventilation., Covers use at ambient
	temperatures.	Avnocure for BCOs. Askagal aprevious
2.10 Contributing scenario	Concentration of the	exposure for: PC9a: Aerosol spray can
Product characteristics	Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	spray aerosol
Amount used	Amount used per event	215 a
Amount used	Amount used per event  Exposure duration	215 g 0,33 min
Frequency and duration of use	Frequency of use	2 days/year
Troquoney and duration of doc	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm <sup>2</sup>
risk management		T
Other given operational conditions affecting consumers	Room size	34 m3
exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.
2.11 Contributing scenario wall paper-, sealant-remo		exposure for: PC9a: Removers (paint-, glue-,
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	491 g

36/98



Version 2.0		Print Date 09.05.20
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Revision date / valid from 09.0	5.2016	
	I Formation	0 h
Frequency and duration of use	Exposure duration Frequency of use	2 h 3 days/year
requericy and duration of use	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	nousehold ventilation., Covers use at ambient
2.12 Contributing scenario	controlling consumer e	exposure for: PC9b: Fillers and putty
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	85 g
	Exposure duration	4 h
Frequency and duration of use	Frequency of use	12 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	nousehold ventilation., Covers use at ambient
2.13 Contributing scenario equalizers	controlling consumer e	exposure for: PC9b: Plasters and floor
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	13800 g
iniount dood	Exposure duration	2 h
Frequency and duration of use	Frequency of use	12 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	nousehold ventilation., Covers use at ambient
2.14 Contributing scenario	controlling consumer e	exposure for: PC9b: Modelling clay



SAFETY DATA SHEET	Taccording to Reg	ulation (EC) No. 1907/2006	
acetone			
Version 2.0 Print Date 09.05.			
Revision date / valid from 09.0	5.2016		
	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%	
Product characteristics	Physical Form (at time of use)	solid	
Amount used	Amount used per event	1 g	
	Exposure duration	8 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 254,4 cm <sup>2</sup>		
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.15 Contributing scenario controlling consumer exposure for: PC9c: Finger paints			
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of	liquid	

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2.15 Contributing scenario controlling consumer exposure for: PC9c: Finger paints			
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	1,35 g	
	Exposure duration	8 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 254,4 cm <sup>2</sup>		
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Avoid using at a product concentration greater 5%		
2.16 Contributing scenario controlling consumer exposure for: PC24: Liquids			

2.16 Contributing scenario controlling consumer exposure for: PC24: Liquids			
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 100%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2200 g	
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PA100058_001	38/98	EN

PA100058\_001



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

		G. G
acetone		
Version 2.0		Print Date 09.05.2016
Revision date / valid from 09.0	5.2016	
	Exposure duration	0,17 h
Frequency and duration of use	Frequency of use	4 days/year
Troquency and advancer or acc	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 468 cm <sup>2</sup>
risk management Other given operational	Room size	34 m3
conditions affecting consumers		arage (34m³) under typical ventilation.
exposure	_	
2.17 Contributing scenario	Concentration of the	exposure for: PC24: Pastes
	Substance in Mixture/Article	Covers concentrations up to 20%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	34 g
	Exposure duration	8 h
Frequency and duration of use	Frequency of use	10 days/year
I leave a feet and a still a second leave	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.18 Contributing scenario	controlling consumer e	exposure for: PC24: Sprays
<b>D</b>	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	spray aerosol
Amount used	Amount used per event	73 g
	Exposure duration	0,17 h
Frequency and duration of use	Frequency of use	6 days/year
Human factors not influenced by	Frequency of use	1 Times per day
risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.19 Contributing scenarion washing products	controlling consumer e	exposure for: PC35: Laundry and dish
Product characteristics	Concentration of the Substance in	Covers percentage substance in the product up to 5 %.

39/98



SAFETY DATA SHEET	Taccording to Reg	ulation (EC) No. 1907/2006	
acetone			
Version 2.0		Print Date 09.05.2016	
Revision date / valid from 09.0	5.2016		
	Mixture/Article		
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	15 g	
	Exposure duration	0,5 h	
Frequency and duration of use	Frequency of use	365 days/year	
' '	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>	
risk management			
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
		exposure for: PC35: Cleaners, liquids (all ers, glass cleaners, carpet cleaners, metal	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	27 g	
Amount used	Amount used per event  Exposure duration	0,33 h	
Frequency and duration of use	Frequency of use	128 days/year	
requericy and duration of use	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>	
risk management	Exposed skill areas	Covers skin contact area up to 657,5 cm	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.21 Contributing scenario	controlling consumer e	exposure for: PC38	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%	
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	12 g	
Francisco de decesario de	Exposure duration	1 h	
Frequency and duration of use	Frequency of use	365 days/year	

Frequency of use

PA100058\_001

40/98



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm <sup>2</sup>
risk management		
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Consumers

No exposure assessment presented for human health.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the  ${\sf ES}$ 



### acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco	anario 8· Ilsa in laborato	oriae	
1. Short title of Exposure Sci			
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC4: Industrial use of propart of articles	ocessing aids in processes and products, not becoming	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC10, PROC15, PROC19	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection.  Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		
3. Exposure estimation and	reference to its source		
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### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

#### **Environment**

No information available.

#### Workers

PROC10, PROC15, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10, PROC19		Inhalation	250ppm	0,50
PROC10		Dermal	27,43mg/kg/day	0,15
PROC15		Inhalation	50ppm	0,10
PROC15		Dermal	0,34mg/kg/day	0,00
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



### acetone

Version 2.0 Print Date 09.05.2016

1 Short title of Evnesure See	onario O. Hoo in Johorato	rios	
1. Short title of Exposure Sce		Public domain (administration, education,	
Main User Groups	entertainment, services, craftsmen)		
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC10, PROC15, PROC19	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
measures to control dispersion from source towards the worker	Ensure material transfers are under containment or extract ventilation. or Limit the substance content in the mixture to 25 %.(PROC10)		
	or Avoid carrying out operation for more than 4 hours.(PROC10)		
	Avoid carrying out operation for more than 1 hour.(PROC19)		
PA100058_001	44/98	EN	



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

Use suitable eye protection.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

If above technical/organisational control measures are not feasible, then adopt following PPE:
Limit the substance content in the mixture to 25 %.

Wear suitable gloves tested to EN374.(PROC19)

## 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC10, PROC15, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC10		Dermal	1,37mg/kg/day	0,007
PROC15		Inhalation	50ppm	0,10
PROC15		Dermal	0,34mg/kg/day	0,002
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

PA100058\_001 45/98 EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 acetone Print Date 09.05.2016 Version 2.0 Revision date / valid from 09.05.2016 Assumes a good basic standard of occupational hygiene is implemented.



## acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	enario 10: Use in de-icin	g and anti-icing applications	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8d: Wide dispersive ou	utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	leadily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting	Indoor/Outdoor use.		
environmental exposure			
Fechnical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
neasures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of was according to local regulation	ste in accordance with environmental legislation and ns.	
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
	ntrolling worker exposu	re for: PROC1, PROC2, PROC8b, PROC11,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
requency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doo windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
Tom Jourde towards the Worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2)		
	Tidridic Substance Within a	ciocod oyotom (r rio o 1; r rio o 2)	



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Ensure material transfers are under containment or extract ventilation.
	or
	Limit the substance content in the mixture to 25 %.
	Ensure operation is undertaken outdoors.
	Avoid carrying out operation for more than 4 hours.(PROC11)
	or
	Avoid carrying out operation for more than 1 hour.(PROC11)
	Avoid carrying out operation for more than 1 hour.(PROC19)
	Use suitable eye protection.
	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
	employee training.
Conditions and measures related	If above technical/organisational control measures are not feasible, then adopt
to personal protection, hygiene	following PPE:
and health evaluation	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
and nearin evaluation	If above technical/organisational control measures are not feasible, then adopt
	following PPE:
	Limit the substance content in the mixture to 25 %.
	Wear suitable gloves tested to EN374.(PROC19)

## 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC8b, PROC11, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,10
PROC8b		Inhalation	250ppm	0,50
PROC8b		Dermal	6,86mg/kg/day	0,04
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC11		Dermal	107,14mg/kg/day	0,58
PROC11	half mask	Inhalation	100ppm	0,20
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

# acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sc	enario 11: Use in de-icin	g and anti-icing applications	
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)		
Chemical product category	PC4: Anti-freeze and de-ic	ing products	
Environmental Release	ERC8d: Wide dispersive o	utdoor use of processing aids in open systems	
Categories	·		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational	Indoor/Outdoor use.		
conditions affecting environmental exposure	mason catacon asc.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal	
(source) to prevent release	Λ:,,	efficiency of (%): (Efficiency: 90 %)	
Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	cross sites thus conservative process release	
Organizational measures to	estimates used.		
prevent/limit release from the site			
Conditions and measures related	Contain and dispose of wa	ste in accordance with environmental legislation and	
to external treatment of waste for	according to local regulations.		
disposal  Conditions and measures related			
to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
	ntrolling consumer exp	osure for: PC4: Washing car window	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	0,5 g	
	Exposure duration	0,02 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm <sup>2</sup>	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure			
	ntrolling consumer exp	osure for: PC4: Pouring into radiator	
Product characteristics	Concentration of the	Covers concentrations up to 10%	
PA100058_001		E	



## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Substance in Mixture/Article		
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2000 g	
	Exposure duration	0,17 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>	
risk management			
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.		

# 2.4 Contributing scenario controlling consumer exposure for: PC4: Lock de-icer

Continuating Contains Continuing Concerns Coxposition 1011 Continuing Continuing			
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	4 g	
	Exposure duration	0,25 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 214,4 cm <sup>2</sup>	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.		

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Consumers

No exposure assessment presented for human health.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the  ${\sf ES}$ 



# acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco	enario 12: Use in oil and	gas field drilling and production operations	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities		
Environmental Release Categories	ERC4: Industrial use of propart of articles	cessing aids in processes and products, not becoming	
2.1 Contributing scenario co	j.	exposure for: FRC4	
		exposure for Ene-	
Substance is a unique structure, F	, <u> </u>		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
prevent/limit release from the site Conditions and measures related	0		
to external treatment of waste for disposal	according to local regulatio	ste in accordance with environmental legislation and ns.	
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use		to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker		ors. f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a	
PA100058_001	52/98	EN	



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2, PROC3)
Conditions and measures related	
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b: ECETOC TRA

,,,,				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4		Dermal	6,86mg/kg/day	0,04
PROC8a		Inhalation	250ppm	0,50
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



# acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	enario 13: Use in oil and	gas field drilling and production operations	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities		
Environmental Release Categories	ERC8d: Wide dispersive or	utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Common practices vary across sites thus conservative process release estimates used.		
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation a		
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,	
Due divet also we storic time	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from door windows etc. Controlled ventilation means air is supplied or removed by a		



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2, PROC3)
	Ensure material transfers are under containment or extract ventilation.
	or
	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

## 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3		Inhalation	100ppm	0,20
PROC4, PROC8b		Inhalation	250ppm	0,50
PROC4, PROC8b		Dermal	6,86mg/kg/day	0,04
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx					
Health For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)					
Additional good practice advice beyond the REACH Chemical Safety Assessment					
ssumes a good basic standard of occupational hygiene is implemented.					



# acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco	enario 14: Explosives m	anufacture & use	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities		
Environmental Release Categories	ERC8d: Wide dispersive or	utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal			
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC8b	ntrolling worker exposu	re for: PROC1, PROC3, PROC5, PROC8a,	
Durado et alega de 1919	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use		to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoo Provide a good standard o	•	
PA100058_001	57/98	EN	



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC3)
	Ensure material transfers are under containment or extract ventilation.
	or
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)
sures related	Use suitable eye protection.
n, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
า	employee training.

Conditions and measi to personal protection and health evaluation

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC3, PROC5, PROC8a: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC3, PROC5		Inhalation	100ppm	0,20
PROC5		Dermal	0,07mg/kg/day	0,00
PROC5		Inhalation	350ppm	0,70
PROC5		Dermal	13,71mg/kg/day	0,07
PROC5		Inhalation	300ppm	0,60
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60

#### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the **Exposure Scenario**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivativesreachconsortium/phenol-derivatives-dossiers.aspx Health For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750) Additional good practice advice beyond the REACH Chemical Safety Assessment Assumes a good basic standard of occupational hygiene is implemented.



## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

1. Short title of Exposur	re Scenario 15: Use as processing aid	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)	

## 2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC6a

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers
measures to reduce or limit	Air	or, Charcoal adsorbers
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.	
Organizational measures to prevent/limit release from the site		
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.	
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.	



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15

		Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid		
		Vapour pressure	> 10 kPa	
	Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion		Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
	from source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
	Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection.  Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

#### 3. Exposure estimation and reference to its source

## **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15: ECETOC TRA

EGETOG HIA				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PA100058_001		61/98		EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC9	 Inhalation	200ppm	0,40
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



# acetone

Version 2.0 Print Date 09.05.2016

L SHOULING OF EXPOSITE SCA	enario 16: Uses in coati	nas	
-		s of substances as such or in preparations at industrial	
Main User Groups	sites		
Process categories	PROC2: Use in closed, cor PROC3: Use in closed bath PROC4: Use in batch and exposure arises PROC5: Mixing or blending and articles (multistage an PROC7: Industrial spraying PROC8a: Transfer of subsessels/large containers at PROC9: Transfer of subsessels/large containers at PROC10: Roller application PROC10: Roller application PROC13: Treatment of at PROC15: Use as laborated	g stance or preparation (charging/discharging) from/to non-dedicated facilities stance or preparation (charging/discharging) from/to dedicated facilities ance or preparation into small containers (dedicated ng) on or brushing ticles by dipping and pouring	
Environmental Dalagae	•	•	
Environmental Release Categories	part of articles	ocessing aids in processes and products, not becoming	
Substance is a unique structure, F Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Charcoal adsorbers, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to			
prevent/limit release from the site	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external treatment of waste for			
Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	according to local regulati	ons.  ole, dispose of in compliance with local regulations.	
Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste  2.2 Contributing scenario co	according to local regulati  If recycling is not practical  ntrolling worker expose	ons.	
Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste  2.2 Contributing scenario co	according to local regulati  If recycling is not practical  ntrolling worker expose	ons.  ole, dispose of in compliance with local regulations.  ure for: PROC1, PROC2, PROC3, PROC4,	



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Mixture/Article	
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).
Technical conditions and		ors. general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a
measures to control dispersion from source towards the worker		r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3)
	Ensure material transfers a or Ensure operation is underta	re under containment or extract ventilation.  aken outdoors.(PROC7)
Conditions and measures related to personal protection, hygiene and health evaluation	employee training.	gloves (tested to EN374) in combination with 'basic' tional control measures are not feasible, then adopt
	Wear a respirator conformi	ng to EN140 with Type A filter or better.(PROC7)

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

## Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC8a, PROC10, PROC13, PROC19		Inhalation	250ppm	0,50
PROC5, PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC7	with local exhaust	Inhalation	25ppm	0,05



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	ventilation, (95% efficiency)			
PROC7		Dermal	2,14mg/kg/day	0,01
PROC7	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC7		Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC10		Dermal	27,43mg/kg/day	0,15
PROC15		Dermal	0,34mg/kg/day	0,00
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sc	enario 17: Use as binde	rs and release agents
Main User Groups	SU 3: Industrial uses: Use sites	es of substances as such or in preparations at industria
Process categories	PROC2: Use in closed, cor PROC3: Use in closed bath PROC4: Use in batch and exposure arises PROC5: Mixing or blending and articles (multistage and PROC6: Calendering ope PROC7: Industrial spraying PROC8a: Transfer of subvessels/large containers and PROC9: Transfer of subvessels/large containers and PROC9: Transfer of subvessels/large containers and PROC9: Transfer of substilling line, including weigh PROC10: Roller application	rations ng stance or preparation (charging/discharging) from/to t non-dedicated facilities stance or preparation (charging/discharging) from/to t dedicated facilities tance or preparation into small containers (dedicated ing)
Environmental Release Categories		Iting in inclusion into or onto a matrix
2.1 Contributing scenario co	ontrolling environmenta	l exposure for: ERC5
<del>-</del>		I exposure for: ERC5
2.1 Contributing scenario co Substance is a unique structure, F Amount used		l exposure for: ERC5
Substance is a unique structure, F Amount used	Readily biodegradable.  To be defined by site	
Substance is a unique structure, F	Readily biodegradable.	I exposure for: ERC5  360 days/year
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	Readily biodegradable.  To be defined by site  Continuous exposure	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.	360 days/year  Treat air emission to provide a typical removal
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary a estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary a estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary a estimates used.  Contain and dispose of waccording to local regulation.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Common practices vary a estimates used.  Contain and dispose of waccording to local regulation of the contain and practical partrolling worker expositions.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons. ble, dispose of in compliance with local regulations. ure for: PROC1, PROC2, PROC3, PROC4,



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	windows etc. Controlled ve powered fan. Sample via a closed loop o Handle substance within a	r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3) re under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant of employee training. If above technical/organisa following PPE:	,

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

## Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a		Inhalation	250ppm	0,50
PROC5		Dermal	13,71mg/kg/day	0,07
PROC6		Dermal	27,43mg/kg/day	0,15
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7		Dermal	2,14mg/kg/day	0,01
PROC7		Inhalation	350ppm	0,70
PROC7		Dermal	42,86mg/kg/day	0,23



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC7	half mask	Inhalation	50ppm	0,10
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC10		Inhalation	250ppm	0,50
PROC10		Dermal	27,34mg/kg/day	0,15
PROC13		Inhalation	250ppm	0,50
PROC13		Dermal	13,71mg/kg/day	0,074

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## acetone

Version 2.0 Print Date 09.05.2016

	SII 3: Industrial uses: Hee	s of substances as such or in preparations at industria
Main User Groups	sites	s of substances as such of in preparations at industrie
Process categories	PROC2: Use in closed, co PROC3: Use in closed bat PROC4: Use in batch and exposure arises PROC5: Mixing or blending and articles (multistage and PROC6: Calendering oper PROC7: Industrial spraying PROC8a: Transfer of subst vessels/large containers at PROC8b: Transfer of subst vessels/large containers at PROC9: Transfer of subst filling line, including weighir PROC10: Roller applicatio PROC13: Treatment of art	rations g stance or preparation (charging/discharging) from/to non-dedicated facilities stance or preparation (charging/discharging) from/to dedicated facilities ance or preparation into small containers (dedicated ng)
Environmental Release	ERC6d: Industrial use of process regulators for polymerisation processes in	
	LICOU. IIIUUSIIIAI USE OI D	rocess regulators for polymerisation processes in
Categories	production of resins, rubber	rs, polymers
Categories  2.1 Contributing scenario co  Substance is a unique structure, F	production of resins, rubber ntrolling environmental Readily biodegradable.	rs, polymers
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used	production of resins, rubber ntrolling environmental Readily biodegradable. To be defined by site	rs, polymers  exposure for: ERC6a, ERC6b, ERC6c, ERC6
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure	production of resins, rubber ntrolling environmental Readily biodegradable.	rs, polymers
Categories  2.1 Contributing scenario co  Substance is a unique structure, Famount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Fechnical conditions and measures at process level	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure	exposure for: ERC6a, ERC6b, ERC6c, ERC6
Categories  2.1 Contributing scenario co  Substance is a unique structure, Famount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Fechnical conditions and measures at process level source) to prevent release	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.	exposure for: ERC6a, ERC6b, ERC6c, ERC6  360 days/year  Treat air emission to provide a typical removal
Categories  2.1 Contributing scenario co  Substance is a unique structure, Famount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Fechnical conditions and measures at process level source) to prevent release  Fechnical onsite conditions and	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air	exposure for: ERC6a, ERC6b, ERC6c, ERC6  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to prevent/limit release from the site	production of resins, rubber  ntrolling environmental  Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary accestimates used.	rs, polymers  exposure for: ERC6a, ERC6b, ERC6c, ERC6  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)  Closed system, or, Treated by scrubbers or, Charcoal adsorbers  cross sites thus conservative process release
Categories  2.1 Contributing scenario co  Substance is a unique structure, Famount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Fechnical conditions and measures at process level source) to prevent release  Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to prevent/limit release from the site conditions and measures related o external treatment of waste for disposal	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air Common practices vary acceptimates used.  Contain and dispose of wa according to local regulation	rs, polymers  exposure for: ERC6a, ERC6b, ERC6c, ERC6  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)  Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release  aste in accordance with environmental legislation and ons.
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Fechnical conditions and measures at process level (source) to prevent release  Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to orevent/limit release from the site  Conditions and measures related to external treatment of waste for disposal  Conditions and measures related	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air Common practices vary acceptimates used.  Contain and dispose of wa according to local regulation	rs, polymers  exposure for: ERC6a, ERC6b, ERC6c, ERC6  360 days/year  Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release
Categories  2.1 Contributing scenario co  Substance is a unique structure, F  Amount used  Frequency and duration of use  Other given operational conditions affecting environmental exposure  Technical conditions and measures at process level (source) to prevent release  Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil  Organizational measures to prevent/limit release from the site  Conditions and measures related to external treatment of waste for disposal  Conditions and measures related to external recovery of waste  2.2 Contributing scenario co	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.  Air Air Common practices vary ac estimates used.  Contain and dispose of wa according to local regulation If recycling is not practicab	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons.



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Substance in Mixture/Article	100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	windows etc. Controlled ve powered fan. Sample via a closed loop o Handle substance within a	r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3) re under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	employee training.  If above technical/organisa following PPE:	gloves (tested to EN374) in combination with 'basic' tional control measures are not feasible, then adopt ng to EN140 with Type A filter or better.(PROC7)

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14; ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
DA1000E0 001		70/00		



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7		Dermal	2,14mg/kg/day	0,01
PROC7	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC7		Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC13		Dermal	13,71mg/kg/day	0,074
PROC14		Dermal	0,34mg/kg/day	0,00

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



# acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	enario 19: Polymer prod	duction
Main User Groups	SU 3: Industrial uses: Use sites	es of substances as such or in preparations at industria
Process categories	PROC2: Use in closed, cor PROC3: Use in closed bath PROC4: Use in batch and exposure arises PROC5: Mixing or blending and articles (multistage and PROC6: Calendering ope PROC8a: Transfer of subvessels/large containers and PROC9: Transfer of substilling line, including weigh PROC10: Roller application PROC13: Treatment of and PROC13: Treatment of and PROC3: Use in closed batch and processes are contained by the processes are containe	rations stance or preparation (charging/discharging) from/to t non-dedicated facilities stance or preparation (charging/discharging) from/to t dedicated facilities tance or preparation into small containers (dedicated ing) on or brushing ticles by dipping and pouring reparations or articles by tabletting, compression,
Environmental Release Categories		process regulators for polymerisation processes in
2.1 Contributing econorio co		
2.1 Contributing Scenario Co	ntrolling environmenta	l exposure for: ERC6d
Substance is a unique structure, F		I exposure for: ERC6d
		I exposure for: ERC6d
Substance is a unique structure, F Amount used	Readily biodegradable.	I exposure for: ERC6d  360 days/year
Substance is a unique structure, F	Readily biodegradable.  To be defined by site	·
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	Readily biodegradable.  To be defined by site  Continuous exposure	·
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.	360 days/year  Treat air emission to provide a typical removal
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary a	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary a estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary a estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary a estimates used.  Contain and dispose of waccording to local regulation.  If recycling is not practical	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons. ble, dispose of in compliance with local regulations.
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste  2.2 Contributing scenario co	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary a estimates used.  Contain and dispose of w according to local regulation.  If recycling is not practica.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons.
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste  2.2 Contributing scenario co	Readily biodegradable.  To be defined by site  Continuous exposure  Indoor/Outdoor use.  Air  Air  Air  Common practices vary a estimates used.  Contain and dispose of w according to local regulation.  If recycling is not practica.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)  Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release  aste in accordance with environmental legislation and ons.  ble, dispose of in compliance with local regulations.  ure for: PROC1, PROC2, PROC3, PROC4,



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Substance in Mixture/Article	100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker		ors. f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a	
nom source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

## 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15; ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC13		Dermal	13,71mg/kg/day	0,074
PA100058 001		73/98	<del></del>	EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

acetone				
Version 2.0			Print	Date 09.05.2016
Revision date /	valid from 09.05.2016			
PROC14, PROC15		Dermal	0,34mg/kg/day	0,00

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



# acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco	enario 20: Use as blowin	g agents
Main User Groups	SU 3: Industrial uses: Uses sites	s of substances as such or in preparations at industrial
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC12: Use of blowing agents in manufacture of foam	
Environmental Release Categories	part of articles	ocessing aids in processes and products, not becoming outdoor use of long-life articles and materials with low
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4, ERC10a
Substance is a unique structure, F	Readily biodegradable.	
Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers
measures to reduce or limit	Air	or, Charcoal adsorbers
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	ross sites thus conservative process release
Organizational measures to prevent/limit release from the site		
Conditions and measures related to external treatment of waste for disposal		
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.
2.2 Contributing scenario co PROC9, PROC12	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC8b,
<b>B</b>	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion	Locate bulk storage outdoo	
		_
PA100058_001	75/98	EN



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

from source towards the worker	windows etc. Controlled ventilation means air is supplied or removed by a
	powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2, PROC3)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC8b, PROC9, PROC12: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC12		Inhalation	100ppm	0,20
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC9		Dermal	6,86mg/kg/day	0,04
PROC12		Dermal	0,34mg/kg/day	0,00

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

**Health** 

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

PA100058\_001 76/98 EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 acetone Print Date 09.05.2016 Version 2.0 Revision date / valid from 09.05.2016 Assumes a good basic standard of occupational hygiene is implemented.



## acetone

Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	enario 21: Uses in coat	ings	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		
2.1 Contributing scenario co	ntrolling environmenta	I exposure for: ERC8a, ERC8c, ERC6d, ERC8	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
to external treatment of waste for disposal			



## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
	windows etc. Controlled ve powered fan.	f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a	
	Handle substance within a	r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3)	
	Ensure material transfers are under containment or extract ventilation. or Ensure operation is undertaken outdoors.(PROC5, PROC8a)		
Technical conditions and	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)		
measures to control dispersion from source towards the worker	Ensure material transfers are under containment or extract ventilation. or Limit the substance content in the mixture to 25 %.(PROC10)		
	or Avoid carrying out operation for more than 4 hours.(PROC10)		
	Ensure material transfers are under containment or extract ventilation. or		
	Limit the substance content in the mixture to 25 %.		
	Ensure operation is undertaken outdoors.  Avoid carrying out operation for more than 4 hours.(PROC11)		
	or Avoid carrying out operation for more than 1 hour.(PROC11)		
	Avoid carrying out operatio	n for more than 1 hour.(PROC19)	
	employee training.	gloves (tested to EN374) in combination with 'basic'	
Conditions and measures related to personal protection, hygiene	following PPE:	tional control measures are not feasible, then adopt	
and health evaluation	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)  If above technical/organisational control measures are not feasible, then adopt following PPE:		
	Limit the substance conten Wear suitable gloves tested		

### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19: ECETOC TRA



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3, PROC15		Dermal	0,34mg/kg/day	0,002
PROC2, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3		Inhalation	100ppm	0,20
PROC4, PROC8b, PROC9, PROC13		Inhalation	250ppm	0,50
PROC4, PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5		Dermal	0,07mg/kg/day	0,00
PROC5, PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC5, PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC10		Dermal	1,37mg/kg/day	0,007
PROC11	with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09
PROC5, PROC8a, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC11	half mask	Inhalation	100ppm	0,20



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC19 Concentration of substance in product: 5% Inhalation 300ppm 0,60

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

1. Short title of Exposure Sc	enario 22: Use as binders and release agents
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

# 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f

Substance is a unique structure, Readily biodegradable.			
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
2.2 Contributing cooperio on	ntrolling worker expecu	ro for: DDOC1 DDOC2 DDOC4	

#### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4,



### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
	windows etc. Controlled ve powered fan.	rs. general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a r other system to avoid exposure.	
		closed system.(PROC1, PROC2, PROC3)	
		re under containment or extract ventilation.	
	or		
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)		
	Or  Avaid corruing out energtion for more than 4 hours (PROCE PROCEs)		
	Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)  Ensure operation is undertaken outdoors.		
Technical conditions and	or	aken outdoors.	
measures to control dispersion	• •	n for more than 4 hours.(PROC6)	
from source towards the worker		re under containment or extract ventilation.	
	or		
		t in the mixture to 25 %.(PROC10)	
	Or Avoid carrying out operation	n for more than 4 hours (PPOC10)	
	Avoid carrying out operation for more than 4 hours.(PROC10)  Ensure material transfers are under containment or extract ventilation.		
	or		
	Limit the substance content in the mixture to 25 %.		
	Ensure operation is underta	aken outdoors.	
	Avoid carrying out operatio	n for more than 4 hours.(PROC11)	
	or Avoid carrying out operation for more than 1 hour.(PROC11)		
Conditions and measures related to personal protection, hygiene	employee training.	gloves (tested to EN374) in combination with 'basic'	
and health evaluation	If above technical/organisational control measures are not feasible, then adopt following PPE:		
	Wear a respirator conformi	ng to EN140 with Type A filter or better.(PROC11)	

### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11: ECETOC TRA

PA100058_001	83/98	EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC8b		Inhalation	100ppm	0,20
PROC4		Inhalation	250ppm	0,50
PROC4		Dermal	6,86mg/kg/day	0,04
PROC5		Dermal	0,07mg/kg/day	0,00
PROC5, PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC6	Outdoor use., 30% efficiency	Inhalation	420ppm	0,84
PROC6		Dermal	27,43mg/kg/day	0,15
PROC6	during 1 - 4 hours	Inhalation	360ppm	0,72
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a		Dermal	13,71mg/kg/day	0,50
PROC8b		Inhalation	250ppm	0,50
PROC8b		Dermal	6,86mg/kg/day	0,04
PROC9		Inhalation	250ppm	0,50
PROC9		Dermal	6,86mg/kg/day	0,04
PROC11	half mask	Inhalation	100ppm	0,20
PROC10		Dermal	1,37mg/kg/day	0,007
PROC10	during 1 - 4 hours, Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
PROC10	Concentration of substance in product: 5% - 25%	Dermal	16,46mg/kg/day	0,09
PROC10		Dermal	27,43mg/kg/day	0,15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5%	Inhalation	252ppm	0,50
PA100058 001		84/98		



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	- 25%, Outdoor use., 30% efficiency			
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC5, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

1. Short title of Exposure Sce	enario 23: Polymer prod	uction	
Main User Groups	SU 22: Professional uses: entertainment, services, cra	Public domain (administration, education, ftsmen)	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation		
Environmental Release Categories	ERC8c: Wide dispersive in ERC8d: Wide dispersive or	door use of processing aids in open systems door use resulting in inclusion into or onto a matrix utdoor use of processing aids in open systems tdoor use resulting in inclusion into or onto a matrix	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8c, ERC8d, ERC8f	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal			
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC9, PROC14	ntrolling worker exposu	re for: PROC1, PROC2, PROC8a, PROC8b,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
PA100058_001	86/98	EN	



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	Locate bulk storage outdoors.  Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2)
Technical conditions and measures to control dispersion	Ensure material transfers are under containment or extract ventilation.
from source towards the worker	or
moni ocarco towardo trio women	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
	Ensure material transfers are under containment or extract ventilation.
	or
	Avoid carrying out operation for more than 4 hours.(PROC14)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC14: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC14		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC8a, PROC14	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8b, PROC9		Inhalation	250ppm	0,50
PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC14	during 1 - 4 hours	Inhalation	300ppm	0,002

### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the

PA100058_001	87/98	EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

#### **Exposure Scenario**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivativesreachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750) Additional good practice advice beyond the REACH Chemical Safety Assessment Assumes a good basic standard of occupational hygiene is implemented.



## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

1. Short title of Exposure Sce	enario 24: Use in agroch	emicals	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8a: Wide dispersive in ERC8d: Wide dispersive or	door use of processing aids in open systems utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
2.2 Contributing scenario co PROC8b, PROC11, PROC		re for: PROC1, PROC2, PROC4, PROC8a,	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use		to 8 hours (unless stated differently).	
Technical conditions and	Locate bulk storage outdoo	ors.	



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

measures to control dispersion from source towards the worker	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2)
	Ensure material transfers are under containment or extract ventilation.
	or
	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
	Ensure material transfers are under containment or extract ventilation.
	or
	Limit the substance content in the mixture to 25 %.
	Ensure operation is undertaken outdoors.
	Avoid carrying out operation for more than 4 hours.(PROC11)
	or
	Avoid carrying out operation for more than 1 hour.(PROC11)
	Avoid carrying out operation for more than 1 hour.(PROC19)
	Use suitable eye protection.
	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
Conditions and measures related to personal protection, hygiene and health evaluation	employee training.
	If above technical/organisational control measures are not feasible, then adopt
	following PPE:
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	If above technical/organisational control measures are not feasible, then adopt following PPE:
	Limit the substance content in the mixture to 25 %.

Wear suitable gloves tested to EN374.(PROC19)

### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Workers

PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC4, PROC8b, PROC13		Inhalation	250ppm	0,50
PROC4, PROC8b		Dermal	6,86mg/kg/day	0,04
PROC8a	with local exhaust ventilation, 80%	Inhalation	100ppm	0,20
PA100058_001		90/98		EN



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

	efficiency			
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC11	half mask	Inhalation	100ppm	0,20
PROC19	Concentration of substance in product: 5% - 25%	Dermal	16,97mg/kg/day	0,09
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

PA100058\_001 91/98 EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

1. Short title of Exposure Sce	enario 25: Uses in coatir	ngs	
Main User Groups		rivate households (= general public = consumers)	
Chemical product category	PC1: Adhesives, sealants PC4: Anti-freeze and de-icing products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC15: Non-metal-surface treatment products PC24: Lubricants, greases, release products PC31: Polishes and wax blends		
Environmental Release Categories	ERC8c: Wide dispersive in ERC8d: Wide dispersive or	idoor use of processing aids in open systems door use resulting in inclusion into or onto a matrix utdoor use of processing aids in open systems utdoor use resulting in inclusion into or onto a matrix	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8c, ERC8d, ERC8f	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal			
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glues, hobby use	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	9 g	
	Exposure duration	< 4 h	
Frequency and duration of use	Frequency of use	< 365 days/year	

PA100058\_001



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SAFETY DATA SHEE	i according to Reg	ulation (EC) No. 1907/2006		
acetone				
Version 2.0		Print Date 09.05.2016		
Revision date / valid from 09.0	95.2016			
	Frequency of use	1 Times per day		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical h temperatures.	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.3 Contributing scenario co tile glue, wood parquet g		osure for: PC1: Glues DIY-use (carpet glue,		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	6390 g		
	Exposure duration	6 h		
Frequency and duration of use	Frequency of use	1 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm <sup>2</sup>		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.			
2.4 Contributing scenario co	ntrolling consumer expe	osure for: PC1: Glue from spray		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%		
Product characteristics	Physical Form (at time of use)	spray aerosol		
Amount used	Amount used per syent	95.05.a		
Amount used	Amount used per event	85,05 g		
Frequency and duration of use	Exposure duration Frequency of use	6 days/year		
requericy and duration of use	Frequency of use	1 Times per day		
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>		
risk management	Ехрозей экіп агеаз	Oovers skin contact area up to 55,75 cm		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.			
2.5 Contributing scenario co	entrolling consumer expe	osure for: PC4: Washing car window		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 1 %.		

93/98

PA100058\_001



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SAFETY DATA SHEET	T according to Reg	ulation (EC) No. 1907/2006
acetone		
Version 2.0		Print Date 09.05.2016
Revision date / valid from 09.0	95.2016	
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	0,5 g
Amount asea	Exposure duration	0,02 h
Frequency and duration of use	Frequency of use	365 days/year
Troquency and daration or doc	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm <sup>2</sup>
risk management	Exposed skiil drods	COVOIC SKIII CONTACT AIR AP TO COCC SKII
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.
	ntrolling consumer expe	osure for: PC4: Pouring into radiator
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2000 g
	Exposure duration	0,17 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>
risk management Other given operational	Room size	34 m3
conditions affecting consumers		arage (34m³) under typical ventilation.
exposure		
2.7 Contributing scenario co		Usure for: PC4: Lock de-icer
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	4 g
	Exposure duration	0,25 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 214,4 cm <sup>2</sup>
Other given operational	Room size	34 m3

94/98



acetone				
Version 2.0 Print Date 09.05.2016				
Revision date / valid from 09.05.2016				
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conditions affecting consumers exposure	Covers use in a one car ga	trage (34m³) under typical ventilation.		
•	ntrolling consumer expo	osure for: PC9a: Waterborne latex wall paint		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1,5%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	2760 g		
	Exposure duration	2,2 h		
Frequency and duration of use	Frequency of use	4 days/year		
Human factors not influenced by	Frequency of use	1 Times per day		
risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.			
2.9 Contributing scenario co water borne paint, PC15:		osure for: PC9a: Solvent rich, high solid,		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 27,5%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	744 g		
	Exposure duration	2,2 h		
Frequency and duration of use	Frequency of use	6 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 482,75 cm <sup>2</sup>		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient		
2.10 Contributing scenario controlling consumer exposure for: PC9a: Aerosol spray can, PC15: Aerosol spray can				
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
	Physical Form (at time of use)	spray aerosol		
PA100058_001	95/98	EN		



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

Amount used	Amount used per event	215 g
	Exposure duration	0,33 h
Frequency and duration of use	Frequency of use	2 days/year
	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm <sup>2</sup>
risk management		
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.	

# 2.11 Contributing scenario controlling consumer exposure for: PC9a: Removers (paint-, glue-, wall paper-, sealant-remover), PC15: Removers (paint-, glue-, wall paper-, sealant remover)

	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	491 g	
	Exposure duration	2 h	
Frequency and duration of use	Frequency of use	3 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		

### 2.12 Contributing scenario controlling consumer exposure for: PC9b: Fillers and putty

Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
Physical Form (at time of use)	liquid
Vapour pressure	240 hPa
Amount used per event	85 g
Exposure duration	4 h
Frequency of use	12 days/year
Frequency of use	1 Times per day
Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>
Room size	20 m3
Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure  Amount used per event Exposure duration Frequency of use Frequency of use Exposed skin areas  Room size Covers use under typical h



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

2.13 Contributing scenario controlling consumer exposure for: PC9b: Plasters and floor equalizers				
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	13800 g		
	Exposure duration	2 h		
Frequency and duration of use	Frequency of use	12 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>		
risk management				
Other given operational conditions affecting consumers	Room size	20 m3		
exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.			
2.14 Contributing scenario	controlling consumer e	exposure for: PC9c: Finger paints		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	1,35 g		
	Frequency of use	365 days/year		
Frequency and duration of use	Frequency of use	1 Times per day		
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 254,4 cm <sup>2</sup>		
risk management				
Other given operational conditions affecting consumers	Room size	20 m3		
exposure	temperatures.	ousehold ventilation., Covers use at ambient		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using at a product concentration greater than 5%		
2.15 Contributing scenario controlling consumer exposure for: PC24: Sprays				
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
Product characteristics	Physical Form (at time of use)	spray aerosol		
PA100058_001 97/98 EN				



#### acetone

Version 2.0 Print Date 09.05.2016

Revision date / valid from 09.05.2016

Amount used	Amount used per event	73 g
	Exposure duration	0,17 h
Frequency and duration of use	Frequency of use	6 days/year
	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>
risk management		
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	

# 2.16 Contributing scenario controlling consumer exposure for: PC31: Polishes, spray (furniture, shoes)

silves)			
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	142 g	
	Exposure duration	1,23 h	
Frequency and duration of use	Frequency of use	29 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 430 cm <sup>2</sup>	
risk management			
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		

#### 3. Exposure estimation and reference to its source

#### **Environment**

No information available.

#### Consumers

No exposure assessment presented for human health.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environm ental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 15	1, 4	NA	ES600
2	Distribution of substance	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 9, 15	1, 2, 3, 4, 5, 6a, 7	NA	ES628
3	Formulation & (re)packing of substances and mixtures	3	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15	2	NA	ES630
4	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15	4	NA	ES632
5	Uses in coatings	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15, 19	8a, 8d	NA	ES229
6	Uses in coatings	21	NA	1, 4, 8, 9a, 9b, 15, 18, 23, 24, 31, 34	NA	8a, 8d	NA	ES363
7	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 10, 13	4	NA	ES636
8	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 8a, 8b, 10, 11, 13	8a, 8b, 8d	NA	ES319
9	Use in Cleaning Agents	21	NA	9a, 9b, 24, 35	NA	8a, 8d	NA	ES392
10	Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13	8a, 8d	NA	ES322
11	Use in agrochemicals	21	NA	12, 27	NA	8a, 8d	NA	ES481
12	Use as a fuel	3	NA	NA	1, 2, 3, 8a, 8b, 16	7	NA	ES189
13	Use as a fuel	22	NA	NA	1, 2, 3, 8a, 8b, 16	8b, 8e, 9a, 9b	NA	ES326
14	Use as a fuel	21	NA	13	NA	9a, 9b	NA	ES485
15	Use as lubricants	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 9, 10, 13, 17, 18	4, 7	NA	ES177
16	Use as lubricants	21	NA	1, 24, 31	NA	8a, 8d, 9a, 9b	NA	ES471
17	Use in laboratories	3	NA	NA	10, 15	2, 4	NA	ES217

PA100144\_001 11/79 EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0

Print Date 15.03.2013

Revision Date 15.03.2013

18	Use in laboratories	22	NA	NA	10, 15	8a	NA	ES329
19	Use in metal working fluids / rolling oils	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 17	4	NA	ES183



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 1: Manufacture of substance

Main User Groups  SU 3: Industrial uses: Uses of substances as such or in preparation sites		
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC1: Manufacture of substances ERC4: Industrial use of processing aids in processes and products, not becoming part of articles	
Activity	Manufacture of substance or use as an intermediate, process chemical or extracting agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).	

#### 2.1 Contributing scenario controlling environmental exposure for: ERC1

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
	Assumes use at not more than 20 ℃ above ambient temperature.			
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
Technical conditions and	Storage	Store substance within a closed system.(PROC1, PROC2)		
measures to control dispersion from source towards the worker	Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.(PROC8a)		
PA100144_001	13/79	EN		



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

Conditions and measures related to personal protection, hygiene and health evaluation Use suitable eye protection.

Avoid direct eye contact with product, also via contamination on hands.

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### **Workers**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

#### 1. Short title of Exposure Scenario 2: Distribution of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC3: Formulation in materials ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates) ERC7: Industrial use of substances in closed systems
Activity	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, distribution and associated laboratory activities.

#### 2.1 Contributing scenario controlling environmental exposure for: ERC1

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15

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Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).				
Physical Form (at time of use)	liquid				
Vapour pressure	> 10 kPa				
Assumes use at not more than 20 ℃ above ambient temperature.					
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure				



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
	General exposures (closed systems)	Handle substance within a closed system.(PROC1)		
	General exposures (closed systems)	Clear transfer lines prior to de-coupling.(PROC4)		
Technical conditions and measures to control dispersion	Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.(PROC8a)		
from source towards the worker	Bulk transfers (closed systems)	Handle substance within a closed system.(PROC8b)		
	Drum and small package filling	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)		
Conditions and measures related to personal protection, hygiene and health evaluation	d Use suitable eye protection.			

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 3: Formulation & (re)packing of substances and mixtures

· ·	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations
Activity	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

,,,,					
	Physical Form (at time of use)	liquid			
Due di cat ale que ete vietica	Vapour pressure	> 10 kPa			
Product characteristics	Assumes use at not more than 20 ℃ above ambient temperature.				
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).				
Technical conditions and	General exposures (closed systems)	Handle substance within a closed system.(PROC2, PROC3)			
measures to control dispersion from source towards the worker	Storage	Store substance within a closed system. Transfer via enclosed lines. Locate bulk storage outdoors.(PROC1, PROC2)			
PA100144_001	17/79	EN			



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	Provide extraction ventilation at points where emissions occur.(PROC5, PROC14)			
	Transfer from/pouring from containers Manual	Use drum pumps or carefully pour from container.(PROC8a, PROC8b)		
	Drum/batch transfers	Drain down and flush system prior to equipment opening or maintenance.(PROC8a)		
	Drum and small package filling	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection.  Avoid direct eye contact with product, also via contamination on hands.  Wear a respirator conforming to EN140 with Type A filter or better.(PROC PROC14)			

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 4: Uses in coatings

•	•
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

#### 2.1 Contributing scenario controlling environmental exposure for: ERC4

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

111000,111001,1110002,1110000,1110010,1110010,1110011						
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).					
Physical Form (at time of use)	liquid					
Vapour pressure	> 10 kPa					
Assumes use at not more than 20 ℃ above ambient temperature.						
	Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure					



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
	General exposures (closed systems)	Handle substance within a closed system.(PROC1, PROC2, PROC3)		
	Ensure material transfers are under containment or extract ventilation.(PROC2, PROC3)			
		Provide extraction ventilation at points where emissions occur.(PROC4, PROC5, PROC13, PROC14, PROC15)		
	Spraying (automatic/robotic)	Carry out in a vented booth provided with laminar airflow.(PROC7)		
	Spraying/fogging by manual application	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC7)		
Technical conditions and	Clear transfer lines prior to de-coupling.(PROC8a, PROC8b)			
measures to control dispersion from source towards the worker	Material transfers Drum/batch transfers Transfer from/pouring from containers	Provide extract ventilation to material transfer points and other openings.(PROC9)		
	Roller, spreader, flow application	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC10)		
	Production of preparations or articles by tabletting, compression, extrusion, pelettisation	Avoid manual contact with wet work pieces.(PROC13)		
Conditions and measures related	Use suitable eye protection.  Avoid direct eye contact with product, also via contamination on hands.			
to personal protection, hygiene and health evaluation	Spraying/fogging by manual application	Wear a respirator conforming to EN140 with Type A filter or better.(PROC7)		

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that

PA100144\_001 20/79 EN

Brenntag S.p.A.	BRENNTAG
SAFETY DATA SHEET according to Regulation	on (EC) No. 1907/2006
butanone	
Version 1.0	Print Date 15.03.2013
Revision Date 15.03.2013	
risks are managed to at least equivalent levels.	
Additional good practice advice beyond the REACH Chemical Sat	fety Assessment
Assumes a good basic standard of occupational hygiene is implement	ted.

21/79

ΕN

PA100144\_001



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 5: Uses in coatings

·	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation) and equipment cleaning, maintenance and associated laboratory activities.

#### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
	Assumes use at not more than 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Other operational conditions	Avoid carrying out operation for more than 4 hours.	

PA100144_001	22/79	ΕN



## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

affecting workers exposure	General exposures (closed systems) Filling / preparation of equipment from drums or containers	Handle substance within a closed system.(PROC1, PROC2)
	Filling / preparation of equipment from drums or containers	Ensure material transfers are under containment or extract ventilation.(PROC2)
	Preparation of material for application	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC3)
Technical conditions and	Film formation - air drying Indoor	Provide extraction ventilation at points where emissions occur. Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC4)
	Preparation of material for application Indoor	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC5)
	Drum/batch transfers	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC8a)
measures to control dispersion from source towards the worker	Material transfers Drum/batch transfers	Provide extract ventilation to material transfer points and other openings.(PROC8b)
	Roller, spreader, flow application Indoor	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC10)
	Spraying/fogging by manual application Indoor	Carry out in a vented booth or extracted enclosure.(PROC11)
	Dipping, immersion and pouring Indoor	Provide extraction ventilation at points where emissions occur. Avoid manual contact with wet work pieces.(PROC13)
	Dipping, immersion and pouring Outdoor.	Ensure operation is undertaken outdoors. Avoid manual contact with wet work pieces.(PROC13)
	Laboratory activities	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC15)
	Hand application - finger paints, pastels, Adhesives Indoor	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC19)
	Hand application - finger	Ensure operation is undertaken outdoors.(PROC19)



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

		paints, pastels, Adhesives Outdoor.		
		Use suitable eye protection.  Avoid direct eye contact with product, also via contamination on hands.		
	Film formation - air drying Outdoor.	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC4)		
		Preparation of material for application Indoor	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC5)	
Conditions and measures related to personal protection, hygiene	Drum/batch transfers	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC8a)		
	and health evaluation	Spraying/fogging by manual application Outdoor.	Avoid carrying out operation for more than 4 hours.(PROC11)	
		Preparation of material for application	Wear a respirator conforming to EN140 with Type A filter or better.(PROC5, PROC10, PROC11, PROC19)	
		Spraying/fogging by manual application Hand application - finger paints, pastels, Adhesives Outdoor.	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11, PROC19)	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Brenntag S.p.A.	BR	ENNTAG
SAFETY DATA SHEET according to Regulation (EC)	No.	1907/2006
butanone		
Version 1.0		Print Date 15.03.2013
Revision Date 15.03.2013		
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Additional good practice advice beyond the REACH Chemical Safety Assess Assumes a good basic standard of occupational hygiene is implemented.	sment	

25/79

ΕN

PA100144\_001



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

#### 1. Short title of Exposure Scenario 6: Uses in coatings

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC1: Adhesives, sealants PC4: Anti-freeze and de-icing products PC8: Biocidal products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC15: Non-metal-surface treatment products PC18: Ink and toners PC23: Leather tanning, dye, finishing, impregnation and care products PC24: Lubricants, greases, release products PC31: Polishes and wax blends PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems	
Activity  Covers the use in coatings (paints, inks, adhesives, etc) including during use (including product transfer and preparation, application by hand or similar methods) and equipment cleaning.		

#### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

### 2.2 Contributing scenario controlling consumer exposure for: PC1: Glues, hobby use

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%
	Physical Form (at time of use)	liquid
Troddot shardsteristics	Vapour pressure	> 10 kPa
Amount used	Amount used per event	9 g
7 timedia deed		
	Exposure duration per day	4 h
Frequency and duration of use	Frequency of use	365 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>
Other given operational	Room size	20 m3
PA100144_001	26/79	EI



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

butanone			
Version 1.0		Print Date 15.03.2013	
Revision Date 15.03.2013			
conditions affecting consumers exposure	Covers use under typical h	ousehold ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk manageme conditions stated.	ent measure identified beyond those operational	
		osure for: PC1: Glues DIY-use (carpet glue,	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	6,390 kg	
	Exposure duration per day	6 h	
Frequency and duration of use	Frequency of use	1 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.5 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glue from spray	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteristics	Vapour pressure	> 10 kPa	
Amount used	Amount used per event	85,05 g	
Frequency and duration of use	Exposure duration per	4 h	
PA100144_001	27/79	EN	
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## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	day	
	Frequency of use	6 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	
2.6 Contributing scenario controlling consumer exposure for: PC1: Sealants		

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	75 g	
Frequency and duration of use	Exposure duration per day	1 h	
	Frequency of use	365 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>	
Other given operational conditions affecting consumers exposure	Room size	34 m3	
	Ventilation rate per hour	0,6	
	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

### 2.7 Contributing scenario controlling consumer exposure for: PC4: Washing car window

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 1 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa

PA100144_001	28/79	EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

Frequency and duration of use

Amount used	Amount used per event	0,5 g
	Exposure duration per day	0,02 h
Frequency and duration of use	Frequency of use	365 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

# 2.8 Contributing scenario controlling consumer exposure for: PC4: Pouring into radiator Concentration of the Substance in Concentration of substance in product: 0% - 10%

Product characteristics	Mixture/Article	p	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	

Amount used	Amount used per event	2 kg
	Exposure duration per	0,17 h

Frequency of use

Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>

risk management		
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure		(0.4 0)

365 days/year

cxpocuro	Covers use in a one car garage (34 m3) under typical ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

ntrolling concumer over	noure for BC9. Classers liquida
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.
Physical Form (at time of use)	liquid
Vapour pressure	> 10 Pa
Amount used per event	27 g
Exposure duration per day	0,33 h
Frequency of use	128 days/year
Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Room size	20 m3
Ventilation rate per hour	0,6
Covers use under typical household ventilation.	
No specific risk management measure identified beyond those operational conditions stated.	
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure  Amount used per event  Exposure duration per day Frequency of use Exposed skin areas  Room size Ventilation rate per hour Covers use under typical h

# 2.10 Contributing scenario controlling consumer exposure for: PC8: Cleaners, trigger sprays

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 15	%
Product characteristics	Physical Form (at time of use)	liquid	
Troddot characteriolics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	35 g	
_	Exposure duration per day	0,17 h	
Frequency and duration of use	Frequency of use	128 days/year	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>	
PA100144_001	30/79		EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

bu	tar	101	ne

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

risk management		
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical h	ousehold ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

# 2.11 Contributing scenario controlling consumer exposure for: PC9a: Solvent rich, high solid, water borne paint

	Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 25 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	0,744 kg
	Exposure duration per day	2,2 h
Frequency and duration of use	Frequency of use	6 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

### 2.12 Contributing scenario controlling consumer exposure for: PC9a: Aerosol spray can

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Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
	Physical Form (at time of use)	liquid	
Troduct orial action close	Vapour pressure	> 10 Pa	



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

Amount used	Amount used per event	0,215 kg	
	Exposure duration per day	0,33 h	
Frequency and duration of use	Frequency of use	2 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>	
Other given operational	Room size	34 m3	
conditions affecting consumers	Ventilation rate per hour	1,5	
exposure	Covers use in a one car garage (34 m3) under typical ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

# 2.13 Contributing scenario controlling consumer exposure for: PC9a: Removers (paint-, glue-, wall paper-, sealant-remover)

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
	Physical Form (at time of use)	liquid	
1 Todact characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	0,491 kg	
Frequency and duration of use	Exposure duration per day	2 h	
	Frequency of use	3 days/year	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 857,5 cm <sup>2</sup>		
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

2.15	Contributing scenario	controlling consumer e	xposure for: PC9b: Fillers and putty
		Concentration of the Substance in	Concentration of substance in product : 0%

		Substance in Mixture/Article	Concentration of substance in product : 0% - 2%
Product characteristics	Physical Form (at time of use)	liquid	
	Troduct characteriolics	Vapour pressure	> 10 Pa

Amount used	Amount used per event	85 g	
Frequency and duration of use	Exposure duration per day	4 h	
	Frequency of use	12 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

No specific risk management measure identified beyond those operational conditions stated.

# 2.16 Contributing scenario controlling consumer exposure for: PC9b: Plasters and floor equalizers

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 2%
Product characteristics	Physical Form (at time of use)	liquid
Troduct orial actorical of	Vapour pressure	> 10 Pa
Amount used	Amount used per event	13,8 kg
	Exposure duration per day	2 h
Frequency and duration of use	Frequency of use	12 days/year

PA100144\_001 33/79 EN

Amount used



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SAFETY DATA SHEET	according to Reg	ulation (EC) No. 1907/2006	
butanone			
Version 1.0		Print Date 15.03.2013	
Revision Date 15.03.2013			
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical h	ousehold ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.17 Contributing scenario water borne paint	controlling consumer e	exposure for: PC15: Solvent rich, high solid,	
Product characteristics	Physical Form (at time of use)	liquid	
Product characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	0,744 kg	
Francisco and direction of the	Exposure duration per day	2,2 h	
Frequency and duration of use	Frequency of use	6 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical h	ousehold ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.18 Contributing scenario	controlling consumer e	exposure for: PC15: Aerosol spray can	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	

PA	A100144_001	34/79	EN

Amount used per event

0,215 kg



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	Exposure duration per day	0,33 h	
Frequency and duration of use	Frequency of use	2 days/year	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 857,5 cm <sup>2</sup>		
Other given operational	Room size	34 m3	
conditions affecting consumers	Ventilation rate per hour 1,5		
exposure	Covers use in a one car ga	rage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

# 2.19 Contributing scenario controlling consumer exposure for: PC15: Removers (paint-, glue-, wall paper-, sealant remover)

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	0,491 kg	
Frequency and duration of use	Exposure duration per day	2 h	
	Frequency of use	3 days/year	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 857,5 cm²		
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.20 Contributing scenario controlling consumer exposure for: PC18			

### 2.20 Contributing scenario controlling consumer exposure for: PC18

Product characteristics	Concentration of the	Concentration of substance in product : 0% - 10%
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# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

bu	tar	10	ne

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	Substance in Mixture/Article		
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	40 g	
Frequency and duration of use	Exposure duration per day	2,2 h	
	Frequency of use	365 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 71,4 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

# 2.21 Contributing scenario controlling consumer exposure for: PC23: Polishes, wax/cream (floor, furniture, shoes)

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
Troduct characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	56 g
,	Exposure duration per day	1,23 h
Frequency and duration of use	Frequency of use	29 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm <sup>2</sup>
Other given operational conditions affecting consumers	Room size	20 m3
PA100144_001	36/79	EN

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SAFETY DATA SHEET	according to Reg	ulation (EC) No. 1907/2006		
butanone				
Version 1.0		Print Date 15.03.2013		
Revision Date 15.03.2013				
exposure	Ventilation rate per hour	0,6		
	Covers use under typical household ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
2.22 Contributing scenario shoes)	controlling consumer e	exposure for: PC23: Polishes, spray (furniture,		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 Pa		
Amount used	Amount used per event	56 g		
Frequency and duration of use	Exposure duration per day	0,33 h		
Frequency and duration of use	Frequency of use	8 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm <sup>2</sup>		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical h			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
2.23 Contributing scenario	controlling consumer e	exposure for: PC24: Liquids		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 Pa		
Amount used	Amount used per event	2,2 kg		

37/79



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

Frequency and duration of use	Exposure duration per day	0,17 h	
	Frequency of use	4 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm <sup>2</sup>	
Other given operational	Room size	34 m3	
conditions affecting consumers	Ventilation rate per hour	1,5	
exposure	Covers use in a one car garage (34 m3) under typical ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.24 Contributing econgric controlling consumer exposure for: PC24: Pastes			

2.24	Contributing	scenario	controlling	consumer ex	posure for:	PC24: Pastes
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	<u> </u>	_ •	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 20%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	34 g	
Frequency and duration of use	Exposure duration per day	6 h	
	Frequency of use	10 days/year	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 468 cm <sup>2</sup>		
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

### 2.25 Contributing scenario controlling consumer exposure for: PC24: Sprays

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa

PA100144_001 38/79
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## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

Amount used	Amount used per event	73 g	
	Exposure duration per day	0,17 h	
Frequency and duration of use	Frequency of use	6 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

# 2.26 Contributing scenario controlling consumer exposure for: PC31: Polishes, wax / cream (floor, furniture, shoes)

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteriolics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	142 g	
Frequency and duration of use	Exposure duration per day	1,23 h	
	Frequency of use	29 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SAFETY DATA SHEET	according to Reg	ulation (EC) No. 1907/2006	
butanone			
Version 1.0		Print Date 15.03.2013	
Revision Date 15.03.2013			
protection and hygiene)			
2.27 Contributing scenario shoes)	controlling consumer e	exposure for: PC31: Polishes, spray (furniture,	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct orial action close	Vapour pressure	> 10 Pa	
	Amount used per event	35 g	
Amount used	Amount used per event	33 g	
Frequency and duration of use	Exposure duration per day	0,33 h	
	Frequency of use	8 days/year	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 430 cm <sup>2</sup>		
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical h		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.28 Contributing scenario	controlling consumer e	exposure for: PC34	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 10%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	0,115 kg	

PA100144\_001 40/79 EN

365 days/year

Exposure duration per

Frequency of use

Frequency and duration of use



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical h	ousehold ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### **Consumers**

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

### 1. Short title of Exposure Scenario 7: Use in Cleaning Agents

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

### 2.1 Contributing scenario controlling environmental exposure for: ERC4

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
	Assumes use at not more t	han 20 ℃ above ambient temperature.
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion	Filling / preparation of equipment from drums or containers	Ensure material transfers are under containment or extract ventilation.(PROC8b)
from source towards the worker	Provide extraction ventilation PROC13)	on at points where emissions occur.(PROC4,
PA100144_001	42/79 EN	



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC7, PROC10)	
	Use suitable eye protection.  Avoid direct eye contact with product, also via contamination on hands.	
Conditions and measures related to personal protection, hygiene and health evaluation	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC2)	
	Avoid carrying out operation for more than 1 hour. or	
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC3, PROC7, PROC10)	
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC7, PROC10)	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

### 1. Short title of Exposure Scenario 8: Use in Cleaning Agents

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems	
Activity	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).	

### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8d

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
	Assumes use at not more than 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Surfaces cleaning Manual	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC10)
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PA100144\_001 44/79 EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	Semi-automated process (e.g.: Semi-automatic application of floor care and maintenance products)	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC4)
	Cleaning of medical devices	Provide extraction ventilation at points where emissions occur.(PROC4)
	Filling / preparation of equipment from drums or containers	Ensure operation is undertaken outdoors.(PROC8a)
	Filling / preparation of equipment from drums or containers	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC8b)
	Cleaning with low- pressure washers Rolling, Brushing	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC10)
	Surfaces cleaning Manual	Ensure doors and windows are opened.(PROC10)
	Ad hoc manual application via trigger sprays, dipping, etc	Provide extraction ventilation at points where emissions occur.(PROC10)
	Cleaning with high pressure washers Spraying Indoor	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC11)
	Use suitable eye protection.  Avoid direct eye contact with product, also via contamination on hands.	
Conditions and measures related to personal protection, hygiene and health evaluation	Surfaces cleaning Manual	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
	Automated process with (semi) closed systems	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC2, PROC3)
	Semi-automated process (e.g.: Semi-automatic application of floor care and maintenance products)	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC4)
	Application of cleaning products in closed systems	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A
PA100144 001	45/79	FN



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	filter or better.(PROC4)		
Cleaning of medical devices	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC4)		
Filling / preparation of equipment from drums or containers	Wear a respirator conforming to EN140 with Type A filter or better.(PROC8a)		
Filling / preparation of equipment from drums or containers	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC8b)		
Surfaces cleaning Manual	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)		
Ad hoc manual application via trigger sprays, dipping, etc	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)		
Cleaning with high pressure washers Spraying Outdoor.	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)		

### 3. Exposure estimation and reference to its source

### **Environment**

No exposure assessment presented for the environment.

### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

PA100144\_001 46/79 EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

### 1. Short title of Exposure Scenario 9: Use in Cleaning Agents

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC24: Lubricants, greases, release products PC35: Washing and cleaning products (including solvent based products)	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems	
Activity	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.	

### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling consumer exposure for: PC9a: Solvent rich, high solid, water borne paint

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	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up 25 %.	to
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	0,744 kg	
	Exposure duration per event	2 h	
Frequency and duration of use	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		
PA100144_001 47/79 EN			EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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Version 1.0		Print Date 15.03.2013
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Revision Date 15.03.2013		
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protection and hygiene)		
2.3 Contributing scenario co	ntrolling consumer expo	osure for: PC9a: Aerosol spray can
	Concentration of the	
	Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
Troduct characteristics	Vapour pressure	> 10 Pa
	Amount used per event	0,215 kg
Amount used	7 tillount abou por overit	0,210 Ng
	Exposure duration per	0,33 h
Frequency and duration of use	event Eraguanay of usa	2 dayahrar
	Frequency of use Frequency of use	2 days/year  1 Times per day
Lluman factors not influenced by	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Human factors not influenced by risk management	Exposed skill areas	Govers skill contact area up to 657,5 cm
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure	Covers use in a one car ga	rage (34 m3) under typical ventilation.
Conditions and measures related to protection of consumer (e.g.	140 Specific fisk management measure identified beyond those operational	
behavioural advice, personal	conditions stated.	
protection and hygiene)		
2.4 Contributing scenario co paper-, sealant-remover)	ntrolling consumer expo	osure for: PC9a: Removers (paint-, glue-, wall
paper , coalain remeter,	Concentration of the	
	Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of	liquid
Product characteristics	use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	0,491 kg
Frequency and duration of use	Exposure duration per	2 h
	event	
PA100144_001	48/79	EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	Frequency of use	3 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

### 2.5 Contributing scenario controlling consumer exposure for: PC9b

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Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 2%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	13,8 kg
	Exposure duration per event	2 h
Frequency and duration of use	Frequency of use	12 days/year
,	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Ventilation rate per hour	0,6
	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

### 2.6 Contributing scenario controlling consumer exposure for: PC24: Liquids

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of use)	liquid
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PA100144_001	49/79	EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	Vapour pressure	> 10 Pa
Amount used	Amount used per event	2,2 kg
	Exposure duration per event	0,17 h
Frequency and duration of use	Frequency of use	4 days/year
, ,	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm <sup>2</sup>
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

## 2.7 Contributing scenario controlling consumer exposure for: PC24: Pastes

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up 20 %.	to
	Physical Form (at time of use)	liquid	
Troddet characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	34 g	
	Exposure duration per event	2,2 h	
Frequency and duration of use	Frequency of use	10 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation.		
Conditions and measures related	No specific risk management measure identified beyond those operational		
PA100144_001	50/79 E		EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

butanone		
Version 1.0		Print Date 15.03.2013
Revision Date 15.03.2013		
to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	conditions stated.	
2.8 Contributing scenario co	ntrolling consumer expo	sure for: PC24: Sprays
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 20%
Product characteristics	Physical Form (at time of use)	liquid
1 Toddet Griaracteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	73 g
	Exposure duration per event	0,17 min
Frequency and duration of use	Frequency of use	6 days/year
,	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical h	ousehold ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk manageme conditions stated.	nt measure identified beyond those operational
protection and hygiene)	ntvolling consumer ever	source for DC25. Classers limited (all murross
		osure for: PC35: Cleaners, liquids (all purpose cleaners, carpet cleaners, metal cleaners)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 5%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	27 g
PA100144_001	51/79	EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	Exposure duration per event	0,33 min
Frequency and duration of use	Frequency of use	128 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational conditions affecting consumers	Room size	20 m3
	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

# 2.10 Contributing scenario controlling consumer exposure for: PC35: Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 15%
	Physical Form (at time of use)	liquid
Troduct orial action stillo	Vapour pressure	> 10 Pa
Amount used	Amount used per event	35 g
	Exposure duration per event	0,17 min
Frequency and duration of use	Frequency of use	128 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

3. Exposure estimation and reference to its source

### **Environment**

No exposure assessment presented for the environment.

#### **Consumers**

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

### 1. Short title of Exposure Scenario 10: Use in agrochemicals

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
	Assumes use at not more than 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Storage	Store substance within a closed system.(PROC1, PROC2)
Technical conditions and measures to control dispersion from source towards the worker	Mixing operations (open systems) Transfer from/pouring from containers Ad hoc manual application via trigger sprays, dipping, etc	Ensure operation is undertaken outdoors.(PROC4, PROC8b, PROC13)



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

	Disposal of wastes	Ensure operation is undertaken outdoors.(PROC8a)
	Spraying (automatic/robotic)	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20.(PROC11)
Organisational measures to prevent /limit releases, dispersion and exposure	Disposal of wastes	Avoid carrying out operation for more than 1 hour.(PROC8a)
	Equipment cleaning and maintenance	Avoid carrying out operation for more than 1 hour.(PROC8a)
	Disposal of wastes	Wear suitable gloves tested to EN374.(PROC8a)
Conditions and measures related to personal protection, hygiene and health evaluation	Equipment cleaning and maintenance	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC8a)
	Spraying/fogging by machine application	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	Ad hoc manual application via trigger sprays, dipping, etc	Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better.(PROC13)

### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

### 1. Short title of Exposure Scenario 11: Use in agrochemicals

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC12: Lawn and garden preparations, including fertilizers (- Fertilizers) PC27: Plant protection products
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Covers the consumer use of agrochemicals in liquid and solid forms.

### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC12, PC27

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 5%	
Product characteristics	Physical Form (at time of use)	liquid	
Amount used	Amount used per event	50 g	
	Exposure duration per event	0,5 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures  Avoid using at a product concentration greater 2.5%(PC27)		

### 3. Exposure estimation and reference to its source

### **Environment**

No exposure assessment presented for the environment.

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# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

### Consumers

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

### 1. Short title of Exposure Scenario 12: Use as a fuel

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC16: Using material as fuel sources, limited exposure to unburned product to be expected
Environmental Release Categories	ERC7: Industrial use of substances in closed systems
Activity	Covers the use as a fuel (or fuel additive), and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

### 2.1 Contributing scenario controlling environmental exposure for: ERC7

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
	Assumes use at not more than 20 ℃ above ambient temperature.		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system. Transfer via enclosed lines. Ensure operation is undertaken outdoors.(PROC1, PROC2) Handle substance within a closed system.(PROC1, PROC2, PROC3, PROC16) Drain down and flush system prior to equipment opening or maintenance. Apply vessel entry procedures including use of supplied compressed air.(PROC8a) Bulk transfers Handle substance within a closed system.		



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

	Drum/batch transfers	Use drum pumps or carefully pour from container.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Avoid direct eye contact wi	n. th product, also via contamination on hands.

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

### 1. Short title of Exposure Scenario 13: Use as a fuel

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposu PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC16: Using material as fuel sources, limited exposure to unburned produ be expected	
Environmental Release Categories	ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems	
Activity	Covers the use as a fuel (or fuel additive), and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	

### 2.1 Contributing scenario controlling environmental exposure for: ERC8b, ERC8e, ERC9a, ERC9b

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
	Assumes use at not more t	han 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
	Storage	Store substance within a closed system.(PROC1, PROC2)	
Technical conditions and	Handle substance within a closed system.(PROC1, PROC2, PROC3, PROC16)		
measures to control dispersion from source towards the worker	Drain down and flush system prior to equipment opening or maintenance.  Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8a)		
	Vessel and container cleaning	Apply vessel entry procedures including use of supplied compressed air.(PROC8a)	



### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

	Bulk transfers	Handle substance within a closed system. Clear transfer lines prior to de-coupling.(PROC8b)
	Drum/batch transfers	Use drum pumps or carefully pour from container.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that

risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

### 1. Short title of Exposure Scenario 14: Use as a fuel

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC13: Fuels
Environmental Release Categories	ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity	Covers consumer uses in liquid fuels.

### 2.1 Contributing scenario controlling environmental exposure for: ERC9a

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling consumer exposure for: PC13: Liquid: Automotive Refuelling, PC13: Liquid: Scooter Refuelling

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	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Amount used per event	37,5 kg (PC13)	
Amount used	Amount used per event	3,75 kg (PC13)	
Frequency and duration of use	Exposure duration per event	0,05 h(PC13)	
	Exposure duration per event	0,03 h(PC13)	
	Frequency of use	52 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 210 cm²		
Other given operational	Room size	100 m3	
conditions affecting consumers exposure	Ventilation rate per hour 0,6		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

### 2.3 Contributing scenario controlling consumer exposure for: PC13: Liquid: Garden Equipment -

PA100144_001	62/79	EN



# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

Use, PC13: Liquid: Garde			
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
Amount used	Amount used per event	0,750 kg	
Frequency and duration of use	Exposure duration per event	2 h(PC13)	
	Exposure duration per event	0,03 h(PC13)	
	Frequency of use	26 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 420 cm <sup>2</sup>	
	Room size	100 m3(PC13)	
Other given operational conditions affecting consumers exposure	Ventilation rate per hour	0,6(PC13)	
	Covers use under typical household ventilation.(PC13)		
	Room size	34 m3(PC13)	
	Ventilation rate per hour	1,5(PC13)	
	Covers use in a one car garage (34 m3) under typical ventilation.(PC13)		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.4 Contributing scenario co	ntrolling consumer expo	osure for: PC13: Liquid: Lamp oil	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
Amount used	Amount used per event	0,100 kg	
PA100144 001	63/79	E	
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## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

Frequency and duration of use	Exposure duration per event	0,01 h
	Frequency of use	1 Times per day
	Frequency of use	52 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 210 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### **Consumers**

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 15: Use as lubricants

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open process PROC18: Greasing at high energy conditions
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC7: Industrial use of substances in closed systems
Activity	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.
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#### 2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC7

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18

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	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
Troddot sharastonesios	Vapour pressure	> 10 kPa	
	Assumes use at not more than 20°C above ambient temperature.		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Other operational conditions affecting workers exposure	Operation is carried out at elevated temperature (> 20 °C above ambient temperature).(PROC8b)		
PA100144 001	65/79 EN		



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Spraying	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC7)	
Maintenance of small items	Avoid carrying out operation for more than 4 hours.(PROC8a)	
Filling / preparation of equipment from drums or containers	Transfer via enclosed lines. Use drum pumps or carefully pour from container.(PROC8a, PROC8b)	
Maintenance (of larger plant items) and machine set up	Clear lines prior to de-coupling. Provide extract ventilation to emission points when contact with warm (>50oC) product is likely.(PROC8b)	
Remanufacture of reject articles	Avoid carrying out operation for more than 4 hours.(PROC9)	
Ensure material transfers are under containment or extract ventilation.(PROC9)		
Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC10)		
Restrict area of openings to equipment.(PROC13, PROC17, PROC18)		
Use suitable eye protection.  Avoid direct eye contact with product, also via contamination on hands.		
Maintenance (of larger plant items) and machine set up	Wear suitable gloves tested to EN374.(PROC8b)	
	Alaintenance of small tems filling / preparation of equipment from drums or ontainers  Maintenance (of larger plant items) and machine et up  Remanufacture of reject priciples Ensure material transfers a provide a good standard of equipment from the provide and provide a good standard of equipment of pour (PROC10)  Restrict area of openings to be suitable eye protection would direct eye contact with a faintenance (of larger elant items) and machine	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users shown that the property of the conditions are adopted.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

PA100144_001	66/79	EN



ΕN

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

PA100144\_001

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

#### 1. Short title of Exposure Scenario 16: Use as lubricants

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC1: Adhesives, sealants PC24: Lubricants, greases, release products PC31: Polishes and wax blends
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity	Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

#### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC9a, ERC9b

No exposure assessment presented for the environment.

#### 2.2 Contributing scenario controlling consumer exposure for: PC1: Glues, hobby use

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	9 g	
	Exposure duration per event	4 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		

67/79

PA100144\_001



ΕN

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SAFETY DATA SHEET	according to Reg	ulation (EC) No. 1907/2006	
butanone			
Version 1.0		Print Date 15.03.2013	
Revision Date 15.03.2013			
protection and hygiene)			
2.3 Contributing scenario co tile glue, wood parquet g		osure for: PC1: Glues DIY-use (carpet glue,	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
1 Toddet characteristics	Vapour pressure	> 10 Pa	
		,	
Amount used	Amount used per event	6,390 kg	
	Exposure duration per event	6 h	
Frequency and duration of use	Frequency of use	1 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk manageme conditions stated.	ent measure identified beyond those operational	
2.4 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glue from spray	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
1 Toddet characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	85,05 g	
Frequency and duration of use	Exposure duration per event	4 h	

68/79



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

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	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm <sup>2</sup>	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical he	ousehold ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.5 Contributing scenario co	ntrolling consumer expo	sure for: PC1: Sealants	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.	
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Product characteristics	Physical Form (at time of use)	liquid	
Product characteristics	Physical Form (at time of		
Product characteristics	Physical Form (at time of use)  Vapour pressure	liquid > 10 Pa	
Product characteristics  Amount used	Physical Form (at time of use)	liquid	
	Physical Form (at time of use)  Vapour pressure	liquid > 10 Pa	
	Physical Form (at time of use)  Vapour pressure  Amount used per event  Exposure duration per	liquid > 10 Pa	

# Human factors not influenced by risk management Other given operational conditions affecting consumers exposure Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene) Exposed skin areas Covers skin contact area up to 35,73 cm² 20 m3 Avoid using at a product concentration greater than ....

2.6 Contributing scenario controlling consumer exposure for: PC24: Liquids			
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	

PA100	144_001	69/79	EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

Amount used	Amount used per event	2,2 kg
	Exposure duration per event	0,17 h
Frequency and duration of use	Frequency of use	4 days/year
	Frequency of use	1 Times per day
		•
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm <sup>2</sup>
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

#### 2.7 Contributing scenario controlling consumer exposure for: PC24: Pastes

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 20%
Product characteristics	Physical Form (at time of use)	liquid
Troduct characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	34 g
	Exposure duration per event	6 h
Frequency and duration of use	Frequency of use	10 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g.	No specific risk management measure identified beyond those operational conditions stated.	

PA100144\_001 70/79 EN

Frequency and duration of use



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

SAFETY DATA SHEET 	according to Reg	ulation (EC) No. 1907/2006
butanone		
Version 1.0		Print Date 15.03.2013
Revision Date 15.03.2013		
behavioural advice, personal protection and hygiene)		
2.8 Contributing scenario co	ntrolling consumer expo	osure for: PC24: Sprays
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
Froduct characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	73 g
	Exposure duration per event	0,17 h
Frequency and duration of use	Frequency of use	6 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	
2.9 Contributing scenario co furniture, shoes)	ntrolling consumer expo	osure for: PC31: Polishes, wax / cream (floor,
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
Product characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	142 g

PA100144\_001 71/79 EN

1,23 h

Exposure duration per



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

	event	
	Frequency of use	29 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Ventilation rate per hour	0,6
	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

# 2.10 Contributing scenario controlling consumer exposure for: PC31: Polishes, spray (furniture, shoes)

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	35 g
	Exposure duration per event	0,33 h
Frequency and duration of use	Frequency of use	8 days/year
, ,	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm <sup>2</sup>
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Ventilation rate per hour	0,6
	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

#### 3. Exposure estimation and reference to its source

#### **Environment**

PA100144_001	72/79	EN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

No exposure assessment presented for the environment.

#### **Consumers**

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 17: Use in laboratories

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Use of the substance within laboratory settings, including material transfers and equipment cleaning

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4

No exposure assessment presented for the environment.

#### 2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
	Assumes use at not more than 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	cleaning Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC10)	
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure the ventilation system is regularly maintained and tested.	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

PA100144_001	74/79	ΕN



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## butanone

Version 1.0 Print Date 15.03.2013

Revision Date 15.03.2013

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Exposure Scenario		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.		
Additional good practice advice beyond the REACH Chemical Safety Assessment		
Assumes a good basic standard of occupational hygiene is implemented.		



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 18: Use in laboratories

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems	
Activity	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.	

#### 2.1 Contributing scenario controlling environmental exposure for: ERC8a

No exposure assessment presented for the environment.

#### 2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15

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Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
Troduct orial action clied	Vapour pressure	> 10 kPa
	Assumes use at not more than 20 °C above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	cleaning	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC10)
O	Ensure the ventilation system is regularly maintained and tested.	
Organisational measures to prevent /limit releases, dispersion and exposure	cleaning	Avoid carrying out operation for more than 1 hour.(PROC10)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

PA100144_001	76/79	EN

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#### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Additional good practice advice beyond the REACH Chemical Safety Assessment Assumes a good basic standard of occupational hygiene is implemented.



## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

#### 1. Short title of Exposure Scenario 19: Use in metal working fluids / rolling oils

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Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open process
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use in formulated MWFs (MWFs)/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

#### 2.1 Contributing scenario controlling environmental exposure for: ERC4

No exposure assessment presented for the environment.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
	Assumes use at not more than 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and	Handle substance within a closed system.(PROC1, PROC2, PROC3)	
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#### SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

#### butanone

Version 1.0 Print Date 15.03.2013

**Revision Date 15.03.2013** 

measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers	Use drum pumps or carefully pour from container.(PROC5, PROC8b, PROC9)
	Spraying	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC7)
	Bulk transfers	Provide enhanced general ventilation by mechanical means. or Ensure operation is undertaken outdoors. Clear transfer lines prior to de-coupling.(PROC8b)
	Process sampling	Use dedicated equipment.(PROC8b)
	Provide enhanced general ventilation by mechanical means.(PROC10, PROC13)	
	Metal machining operations	Provide extraction ventilation at points where emissions occur. Restrict area of openings to equipment.(PROC17)
	Semi-automated metal rolling/forming	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC17)
Organisational measures to prevent /limit releases, dispersion and exposure	Bulk transfers	Avoid carrying out operation for more than 1 hour.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

#### 3. Exposure estimation and reference to its source

#### **Environment**

No exposure assessment presented for the environment.

#### Workers

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

PA100144_001	79/79	EN