



Safety Data Sheet

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Material Name : Ethylene Glycol Industrial Grade  
Product Code : U1284  
Other Identifier : Ethane diol 1,2, MEG, Glycol, Dihydroxy ethane 1,2, Ethylene Glycol  
REACH Registration No. : 01-2119456816-28-0001, 01-2119456816-28-0002

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

Product use : Please refer to Ch16 and/or the annexes for the registered uses under REACH.

1.3 Details of the supplier of the substance or mixture

Manufacturer/Supplier : Shell Chemicals Europe B.V.  
PO Box 8610  
3009 AP Rotterdam  
Netherlands

Local Contact : Shell Chemicals UK  
Telephone : +31 (0)10231 7425  
Fax : +31 (0)10231 7115  
Email contact for MSDS : sccmsds@shell.com

1.4 Emergency Telephone Number

: +44 (0) 1235 239 670

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2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Regulation (EC) No 1272/2008 (CLP)	
Hazard Class & Category	Hazard statement
ACUTE TOXICITY - ORAL, Category 4	H302
Specific target organ toxicity - repeated exposure, Category 2; Kidneys	H373


67/548/EEC or 1999/45/EC	
Hazard characteristics	R-phrase(s)
Harmful.	R22

2.2 Label Elements

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Label Name : MONOETHYLENE GLYCOL  
EC Number : 203-473-3  
EC Annex I Number : 603-027-00-1

**Labeling according to Regulation (EC) No 1272/2008**

Symbol(s) : 

**Signal Words** : Warning

**CLP Hazard statements** : **PHYSICAL HAZARDS:**  
Not classified as a physical hazard under CLP criteria.  
**HEALTH HAZARDS:**  
H302: Harmful if swallowed.  
H373: May cause damage to organs or organ systems through prolonged or repeated exposure.  
Kidney.  
**ENVIRONMENTAL HAZARDS:**  
Not classified as environmental hazard according to CLP criteria.

**CLP Precautionary statements**

**Prevention** : P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
P264: Wash hands thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.

**Response** : P301+P312: IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.  
P330: Rinse mouth.  
P314: Get medical advice/attention if you feel unwell.

**Disposal** : P501: Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

**Labeling according to Directive 1999/45/EC**

EC Symbols : Xn Harmful.



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EC Classification : Harmful.  
EC Risk Phrases : R22 Harmful if swallowed.  
EC Safety Phrases : S2 Keep out of the reach of children.

**2.3 Other Hazards**

**Health Hazards** : Inhalation of vapours or mists may cause irritation to the respiratory system. May cause drowsiness and dizziness. Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s): Kidney.

**Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Kidney.

**Safety Hazards** : Not classified as flammable but will burn.

**Other Information** : For a list of REACH registered uses, please refer to: [www.shell.com/chemicals/reachuses](http://www.shell.com/chemicals/reachuses)

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**3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substance**

**Material Formal Name** : 1,2-Ethane diol.  
**Synonyms** : Ethane diol 1,2  
MEG  
Glycol  
Dihydroxy ethane 1,2  
Ethylene Glycol

**CAS No.** : 107-21-1  
**INDEX No.** : 603-027-00-1  
**EC Number** : 203-473-3  
**EINECS No.** : 203-473-3

**3.2 Mixtures****Hazardous Components****Classification of components according to Regulation (EC) No 1272/2008**

Chemical Name	CAS No.	EINECS	REACH Registration No.	Conc.
Ethylene Glycol	107-21-1	203-473-3	01-2119456816-28	99.90 - 100.00%
Diethylene Glycol	111-46-6	203-872-2	01-2119457857-21	0.00 - < 1.00%

Chemical Name	Hazard Class & Category	Hazard statement
Ethylene Glycol	Acute Tox., 4; STOT RE, 2;	H302, H373,
Diethylene Glycol	Acute Tox., 4; STOT RE, 2;	H302, H373,

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**4. FIRST AID MEASURES****4.1 Description of first aid measures**

- Inhalation** : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
- Eye Contact** : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.
- Ingestion** : DO NOT DELAY. Do not induce vomiting. If victim is alert, rinse mouth and drink 1/2 to 1 glass of water to help dilute the material. Do not give liquids to a drowsy, convulsing, or unconscious person. Transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

- 4.2 Most important symptoms/effects, acute & delayed** : Kidney toxicity may be recognized by blood in the urine or increased or decreased urine flow. Other signs and symptoms can include nausea, vomiting, abdominal cramps, diarrhoea, lumbar pain shortly after ingestion, and possibly narcosis and death. Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.

- 4.3 Indication of immediate medical attention and special treatment needed** : May cause significant renal, respiratory, and CNS toxicity. May cause significant acidosis. Call a doctor or poison control center for guidance.

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**5. FIRE FIGHTING MEASURES**

- 5.1 Extinguishing Media** : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- 5.2 Special hazards arising from substance or mixture** : Material will not burn unless preheated. Carbon monoxide may be evolved if incomplete combustion occurs. Containers exposed to intense heat from fires should be cooled with large quantities of water.
- 5.3 Advice for fire-fighters** : Wear full protective clothing and self-contained breathing apparatus.
- Additional Information** : Evacuate the area of all non-essential personnel. Keep adjacent containers cool by spraying with water.

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**6. ACCIDENTAL RELEASE MEASURES**

- 6.1 Personal Precautions, Protective Equipment and** : Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this

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- Emergency Procedures** : Material Safety Data Sheet.
- 6.2 Environmental Precautions** : Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Use appropriate containment to avoid environmental contamination. Ventilate contaminated area thoroughly.
- 6.3 Methods and Material for Containment and Clean Up** : Contain run-off from residue flush and dispose of properly. Soak up residue with an absorbent such as clay, sand or other suitable material.  
For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- Additional Advice** : See Chapter 13 for information on disposal. Observe all relevant local regulations. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Dike and contain spill water.

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**7. HANDLING AND STORAGE**

- General Precautions** : Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. On guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- 7.1 Precautions for Safe Handling** : Use local exhaust extraction over processing area. Handle and open container with care in a well-ventilated area. Do not empty into drains. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Handling Temperature: Ambient. 60 °C maximum
- 7.2 Conditions for safe storage, including any incompatibilities** : Tanks must be clean, dry and rust-free. Keep container tightly closed. Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat. Cleaning, inspection and maintenance of storage tanks is a specialist operation which requires the implementation of strict procedures and precautions. Drums should be stacked to a maximum of 3 high. Storage Temperature: Ambient. 60 °C maximum
- 7.3 Specific End Uses** : Please refer to Ch16 and/or the annexes for the registered uses under REACH.
- Additional Information** : Ensure that all local regulations regarding handling and storage facilities are followed.
- Product Transfer** : Keep containers closed when not in use. Do not pressurize drum containers to empty.
- Recommended Materials** : Stainless steel. Mild steel. Carbon steel



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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

**8.1 Control Parameters**

**Occupational Exposure Limits**

UK Workplace Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Ethylene Glycol	ACGIH	Ceiling		100 mg/m3	
	Aerosol.				
	EH40 WEL	TWA		10 mg/m3	
	Particulate.				
	EH40 WEL	TWA	20 ppm	52 mg/m3	
	Vapor.				
	EH40 WEL	STEL	40 ppm	104 mg/m3	
	Vapor.				
	EH40 WEL	SKIN_DES			Can be absorbed through the skin.
	Particulate.				
	EH40 WEL	SKIN_DES			Can be absorbed through the skin.
	Vapor.				

**Additional Information** : Wash hands before eating, drinking, smoking and using the toilet. Launder contaminated clothing before re-use.

**Derived No Effect Levels (DNEL)**

Component	Exposure Route	Exposure Type (long/short)	Application Area	Value
Ethylene Glycol	Dermal	long term, systemic effects	Worker	106mg/kg/d
	Inhalation	long term, local effects	Worker	35 mg/m3
	Dermal	long term, systemic effects	Consumer	53mg/kg/d
	Inhalation	long term, local effects	Consumer	7 mg/m3
	Oral	Not applicable	Consumer	

**Predicted No Effect Concentration (PNEC)**

Component	Exposure Route	Value	Remark
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Ethylene Glycol			Exposure assessments have not been presented for the environment therefore PNEC values not required.
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**8.2 Exposure Controls**

**General Information** : Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.

No exposure controls are ordinarily required under normal conditions of use. It is good general industrial hygiene practice to minimize exposure to the material.

**Occupational Exposure Controls**

**Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.  
**Eye Protection** : Chemical splash goggles (chemical monogoggles).  
**Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739, AS/NZS:2161) made from the following materials may provide suitable chemical protection: Longer term protection: PVC. Neoprene rubber. Nitrile rubber. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

**Body protection** : Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.  
 : Skin protection not ordinarily required beyond standard issue work clothes. Chemical resistant gloves/gauntlets, boots, and apron.

**Respiratory Protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)] meeting EN14387 (AS/NZS:1716).

**Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended air monitoring methods are given below or contact supplier. Further national methods may be available. National Institute of

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Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods,  
<http://www.cdc.gov/niosh/nmam/nmammenu.html>.  
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods,  
<http://www.osha-slc.gov/dts/sltc/methods/toc.html>. Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances,  
<http://www.hsl.gov.uk/publications/mdhs.aspx>.  
Berufsgenossenschaftliches Institut für Arbeitssicherheit (BIA), Germany <http://www.hvbg.de/d/bia/index.html>. L'Institut National de Recherche et de Sécurité, (INRS), France [http://www.inrs.fr/securete/hygiene\\_securite\\_travail.html](http://www.inrs.fr/securete/hygiene_securite_travail.html).

**Environmental Exposure Controls**

**Environmental exposure control measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Exhaust emission systems should be designed in accordance with local conditions; the air should always be moved away from the source of vapour generation and the person working at this point. Eye washes and showers for emergency use. Firewater monitors and deluge systems are recommended.  
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

Appearance	: Colourless. Slightly viscous liquid.
Odour	: Mild.
Odour threshold	: 25 ppm
pH	: Data not available.
Boiling point	: 196 - 200 °C / 385 - 392 °F
Melting / freezing point	: < -12.5 °C / 9.5 °F
Flash point	: 116 °C / 241 °F (PMCC / ASTM D93)
Explosion / Flammability limits in air	: 3.2 - 28 %(V)
Ignition temperature	: Data not available.
Auto-ignition temperature	: 417 °C / 783 °F
Vapour pressure	: < 10 Pa at 20 °C / 68 °F
Specific gravity	: 1.12
Density	: Typical 1,130 kg/m <sup>3</sup> at 20 °C / 68 °F (ASTM D-4052)
Water solubility	: Completely Soluble
Solubility in other solvents	: Data not available.
n-octanol/water partition coefficient (log Pow)	: -1.93at 20 °C / 68 °F
Dynamic viscosity	: Data not available.
Kinematic viscosity	: 24.8 mm <sup>2</sup> /s at 20 °C / 68 °F

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Vapour density (air=1) : 2.2  
Evaporation rate (nBuAc=1) : Data not available.  
Surface tension : 48.4 mN/m at 20 °C / 68 °F

**9.2 Other Information**

State of aggregation : Liquid.  
Stability : Stable.  
Other information : Data not available.

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**10. STABILITY AND REACTIVITY**

**10.1 Reactivity** : Stable under normal conditions of use.  
**10.2 Stability** : Stable under normal conditions of use. Reacts with strong oxidising agents.  
**10.3 Possibility of Hazardous Reactions** : Data not available.  
**10.4 Conditions to Avoid** : High Temperature.  
**10.5 Materials to Avoid** : Strong oxidising agents. Strong acids. Strong bases.  
**10.6 Hazardous Decomposition Products** : Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

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**11. TOXICOLOGICAL INFORMATION****11.1 Information on Toxicological effects**

**Basis for Assessment** : Information given is based on product testing.  
**Routes of Exposure** : Skin and eye contact are the primary routes of exposure although exposure may occur through inhalation or following accidental ingestion.  
**Acute Oral Toxicity** : Harmful if swallowed. LD50 >300 - <=2000 mg/kg  
**Acute Dermal Toxicity** : Expected to be of low toxicity: LD50 >5000 mg/kg  
**Acute Inhalation Toxicity** : Low toxicity if inhaled.  
**Skin Irritation** : Slightly irritating to skin.  
**Eye Irritation** : Slightly irritating to the eye.  
**Respiratory Irritation** : Repeated inhalation of vapours and mists is expected to cause irritation of the respiratory tract.  
**Sensitisation** : Not expected to be a sensitiser.  
**Mutagenicity** : No evidence of mutagenic activity.  
**Carcinogenicity** : Not carcinogenic in animal studies.  
**Reproductive and Developmental Toxicity** : Does not impair fertility.  
Not a developmental toxicant. Causes foetotoxicity in animals; considered to be secondary to maternal toxicity.  
**Specific target organ toxicity - single exposure** : Ingestion may cause drowsiness and dizziness. Inhalation of vapours or mists may cause irritation to the respiratory system.  
**Specific target organ toxicity - repeated exposure** : Repeated exposure may give rise to kidney damage.



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**Additional Information** : There is a marked difference in acute oral toxicity between animals and man, man being more susceptible than animals. The estimated fatal dose for man is 100 millilitres (1/2 cup).

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### 12. ECOLOGICAL INFORMATION

**Basis for Assessment** : Information given is based on product testing.

**12.1 Toxicity**

**Acute Toxicity**

**Fish** : Practically non toxic: LL/EL/IL50 > 100 mg/l

**Aquatic Invertebrates** : Practically non toxic: LL/EL/IL50 > 100 mg/l

**Algae** : Practically non toxic: LL/EL/IL50 > 100 mg/l

**Microorganisms** : Practically non toxic: LL/EL/IL50 > 100 mg/l

**Chronic Toxicity**

**Fish** : NOEC/NOEL > 100 mg/l (based on test data)

**Aquatic Invertebrates** : NOEC/NOEL > 100 mg/l (based on test data)

**12.2 Persistence and degradability** : Readily biodegradable.

**12.3 Bioaccumulative Potential** : Does not bioaccumulate significantly.

**12.4 Mobility** : Dissolves in water.  
If product enters soil, one or more constituents will be mobile and may contaminate groundwater.

**12.5 Result of the PBT assessment** : The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

**12.6 Other Adverse Effects** : Data not available.

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### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste Treatment Methods

**Material Disposal** : Recover or recycle if possible. Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. Remove all packaging for recovery or waste disposal.  
Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.

**Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

**Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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### 14. TRANSPORT INFORMATION

**ADR**



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This material is not classified as dangerous under ADR regulations.

### RID

This material is not classified as dangerous under RID regulations.

### Sea transport (IMDG Code):

This material is not classified as dangerous under IMDG regulations.

### Air transport (IATA):

This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

### Sea (Annex II of MARPOL 73/78 and the IBC code)

Pollution Category : Y  
Ship Type : 3  
Product Name : Ethylene glycol  
Special Precaution : Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

**Additional Information** : This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

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## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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

#### Other regulatory Information

#### Chemical Inventory Status

AICS : Listed.  
DSL : Listed.  
INV (CN) : Listed.  
ENCS (JP) : Listed. (2)-230  
TSCA : Listed.  
EINECS : Listed. 203-473-3  
KECI (KR) : Listed. KE-13169  
PICCS (PH) : Listed.

#### National Legislation

ECMON : 53650  
Listed.



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**15.2 Chemical Safety Assessment** : A Chemical Safety Assessment was performed for all substances of this product.

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**16. OTHER INFORMATION**

**R-phrases**

R22 Harmful if swallowed.

**CLP Hazard statements**

H302 Harmful if swallowed.

H373 May cause damage to organs or organ systems through prolonged or repeated exposure.

**Identified Uses according to the Use Descriptor System**

**Uses - Worker**

Title : Manufacture of substance  
- Industrial

**Uses - Worker**

Title Use as an intermediate  
- Industrial

**Uses - Worker**

Title Distribution of substance  
- Industrial

**Uses - Worker**

Title Formulation & (re)packing of substances and mixtures  
- Industrial

**Uses - Worker**

Title Uses in Coatings  
- Industrial

**Uses - Worker**

Title Uses in Coatings  
- Professional

**Uses - Worker**

Title Use in Cleaning Agents  
- Industrial

**Uses - Worker**

Title Use in Cleaning Agents  
- Professional

**Uses - Worker**

Title Lubricants  
- Industrial



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**Uses - Worker**

Title Metal working fluids / rolling oils  
- Industrial

**Uses - Worker**

Title Metal working fluids / rolling oils  
- Professional

**Uses - Worker**

Title Use in Agrochemicals uses  
- Professional

**Uses - Worker**

Title Functional Fluids  
- Industrial

**Uses - Worker**

Title Functional Fluids  
- Professional

**Uses - Worker**

Title De-icing and anti-icing applications  
- Professional

**Uses - Worker**

Title Use in laboratories  
- Industrial

**Uses - Worker**

Title Use in laboratories  
- Professional

**Uses - Worker**

Title Water treatment chemicals  
- Industrial

**Uses - Consumer**

Title : Uses in Coatings  
- Consumer

**Uses - Consumer**

Title : Use in Cleaning Agents  
- Consumer

**Uses - Consumer**

Title : De-icing and anti-icing applications  
- Consumer



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### Uses - Consumer

Title : Other Consumer Uses  
- Consumer

### Other Information

Further information : For a list of REACH registered uses, please refer to:  
[www.shell.com/chemicals/reachuses](http://www.shell.com/chemicals/reachuses)

MSDS Version Number : 3.0

MSDS Effective Date : 09.03.2011

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation : The content and format of this safety data sheet is in accordance with Regulation 1907/2006/EC.

MSDS Distribution : The information in this document should be made available to all who may handle the product

Disclaimer : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



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Exposure Scenario - Worker

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Manufacture of substance - Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3, SU8, SU9 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 <b>Environmental Release Categories:</b> ERC 1, ERC 4
<b>Scope of process</b>	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
General exposures (closed systems) elevated temperature Continuous process	No specific measures identified
General exposures (closed systems) with occasional controlled exposure. elevated temperature Continuous process	Provide extract ventilation to points where emissions occur
General exposures. Use in contained batch processes	No specific measures identified



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General exposures. Batch process	No specific measures identified
Process sampling elevated temperature	Use a sampling system designed to control exposure
Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance
Bulk transfers Dedicated facility	Use in semi-automated and predominantly enclosed filling lines
Bulk product storage (closed systems)	No specific measures identified
Laboratory activities	No specific measures identified

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



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Exposure Scenario - Worker

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Use as an intermediate - Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3, SU8, SU9 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 <b>Environmental Release Categories:</b> ERC 6A
<b>Scope of process</b>	Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
General exposures (closed systems) Continuous process	No specific measures identified
General exposures (closed systems) with occasional controlled exposure. Continuous process	No specific measures identified
General exposures. Use in contained batch processes	No specific measures identified
General exposures. Batch process	No specific measures identified

**Safety Data Sheet**

Process sampling	Ensure dedicated sample points are provided
Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Bulk product storage (closed systems)	No specific measures identified
Laboratory activities	No specific measures identified

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



Safety Data Sheet

Exposure Scenario - Worker

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	Distribution of substance - Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3, SU8, SU9 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 15 <b>Environmental Release Categories:</b> ERC 1, ERC 2, ERC 3, ERC 4, ERC 5, ERC 6A, ERC 6B, ERC 6C, ERC 6D, ERC 7
<b>Scope of process</b>	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.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Worker Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

Contributing scenarios	Risk Management Measures
General exposures (closed systems) Continuous process	No specific measures identified
General exposures (closed systems) with occasional controlled exposure. Continuous process	No specific measures identified
General exposures. Use in contained batch processes	No specific measures identified
General exposures. Batch process	No specific measures identified



**Safety Data Sheet**

Product sampling	Ensure dedicated sample points are provided
Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Drum/batch transfers Dedicated facility	No specific measures identified
Drum and small package filling	Fill containers/cans at dedicated fill points supplied with local extract ventilation
Bulk product storage (closed systems)	No specific measures identified
Laboratory activities	No specific measures identified

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



Safety Data Sheet

Exposure Scenario - Worker

SECTION 1		EXPOSURE SCENARIO TITLE
<b>Title</b>	Formulation & (re)packing of substances and mixtures - Industrial	
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3, SU 10 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 <b>Environmental Release Categories:</b> ERC 2	
<b>Scope of process</b>	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.	

SECTION 2		OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.	

Section 2.1		Control of Worker Exposure
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);	
<b>Frequency and Duration of Use</b>		
Covers daily exposures up to 8 hours (unless stated differently)		
<b>Other Operational Conditions affecting worker Exposure.</b>		
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

Contributing scenarios	Risk Management Measures
General exposures (closed systems) Continuous process	No specific measures identified
General exposures (closed systems) with occasional controlled exposure. Continuous process	No specific measures identified
General exposures. Use in contained batch processes	No specific measures identified
General exposures. Batch process	No specific measures identified

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Mixing operations (open systems)	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Production or preparation of articles by tableting, compression, extrusion or pelletisation	No specific measures identified
Product sampling	Ensure dedicated sample points are provided
Equipment cleaning and maintenance	Drain down and flush system prior to equipment break-in or maintenance
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Drum/batch transfers Dedicated facility	No specific measures identified
Drum and small package filling	Fill containers/cans at dedicated fill points supplied with local extract ventilation
Bulk product storage (closed systems)	No specific measures identified
Laboratory activities	No specific measures identified

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>	

**Safety Data Sheet****Section 4.2 -Environment**

No exposure assessment presented for the environment.



Safety Data Sheet

**Exposure Scenario - Worker**

<b>SECTION 1</b>		<b>EXPOSURE SCENARIO TITLE</b>	
<b>Title</b>	Uses in Coatings - Industrial		
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13, PROC 15 <b>Environmental Release Categories:</b> ERC 4		
<b>Scope of process</b>	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.		

<b>SECTION 2</b>		<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>	
<b>Additional Information</b>	No exposure assessment presented for the environment.		

<b>Section 2.1</b>		<b>Control of Worker Exposure</b>	
<b>Product Characteristics</b>			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);		
<b>Frequency and Duration of Use</b>			
Covers daily exposures up to 8 hours (unless stated differently)			
<b>Other Operational Conditions affecting worker Exposure.</b>			
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).			

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
General exposures (closed systems)	No specific measures identified
General exposures (closed systems) with sample collection	No specific measures identified
Film formation - force drying, stoving and other technologies.	No specific measures identified
Film formation - air drying	No specific measures identified
Mixing operations (closed)	No specific measures identified

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systems)	
Mixing operations (open systems) Preparation of material for application	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Material transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Drum/batch transfers	Use drum pumps or carefully pour from container
Spraying (automatic/robotic)	Carry out in a vented booth or extracted enclosure Ensure the ventilation system is regularly maintained and tested Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin
Manual Spraying	Carry out in a vented booth or extracted enclosure Ensure the ventilation system is regularly maintained and tested Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin
Roller, spreader, flow application	Use long handled brushes and rollers where possible. Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Dipping, immersion and pouring	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Laboratory activities	No specific measures identified
Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	



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**Section 3.2 -Environment**

No exposure assessment presented for the environment.

**SECTION 4**

**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**

**Section 4.1 - Health**

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.

**Section 4.2 -Environment**

No exposure assessment presented for the environment.

**Safety Data Sheet**
**Exposure Scenario - Worker**

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Uses in Coatings - Professional
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 22 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 <b>Environmental Release Categories:</b> ERC 8A, ERC 8D
<b>Scope of process</b>	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.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
Filling / preparation of equipment from drums or containers.	No specific measures identified
General exposures (closed systems) Use in contained systems	No specific measures identified
Preparation of material for application	No specific measures identified
Film formation - air drying	No specific measures identified
Film formation - force	No specific measures identified

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drying, stoving and other technologies.	
Material transfers Drum/batch transfers Non-dedicated facility	Use drum pumps or carefully pour from container
Material transfers Drum/batch transfers Dedicated facility	No specific measures identified
Roller, spreader, flow application	Provide extract ventilation to points where emissions occur Use long handled brushes and rollers where possible. Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Manual Spraying	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin Carry out in a vented booth or extracted enclosure , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better
Dipping, immersion and pouring	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Hand application - fingerpaints, pastels, adhesives	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Laboratory activities	No specific measures identified
Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	

<b>Section 3.2 -Environment</b>
No exposure assessment presented for the environment.



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<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	
<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



Safety Data Sheet

Exposure Scenario - Worker

SECTION 1	
EXPOSURE SCENARIO TITLE	
<b>Title</b>	Use in Cleaning Agents - Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13 <b>Environmental Release Categories:</b> ERC 4
<b>Scope of process</b>	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.

SECTION 2	
OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	
Control of Worker Exposure	
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

Contributing scenarios	Risk Management Measures
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Use in contained systems Automated process with (semi) closed systems.	No specific measures identified
Drum/batch transfers	Use drum pumps or carefully pour from container
Filling / preparation of equipment from drums or containers. Dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Use in contained batch	Provide extract ventilation to points where emissions occur

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processes Treatment by heating	
Degreasing small objects in cleaning station	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Cleaning with low-pressure washers	Use long handled tools where possible Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Cleaning with high pressure washers	Carry out in a vented booth or extracted enclosure Ensure the ventilation system is regularly maintained and tested Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin
Manual Cleaning Surfaces no spraying	Use long handled tools where possible Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



Safety Data Sheet

Exposure Scenario - Worker

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Use in Cleaning Agents - Professional
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 22 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13 <b>Environmental Release Categories:</b> ERC 8A, ERC 8D
<b>Scope of process</b>	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).

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
Filling / preparation of equipment from drums or containers. Dedicated facility	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Use in contained systems Automated process with (semi) closed systems.	No specific measures identified
Drum/batch transfers	Use drum pumps or carefully pour from container
Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)	No specific measures identified

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Filling / preparation of equipment from drums or containers. Non-dedicated facility	Use drum pumps or carefully pour from container
Manual Cleaning Surfaces Dipping, immersion and pouring	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Cleaning with low-pressure washers	Use long handled tools where possible Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Cleaning with high pressure washers	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin Carry out in a vented booth or extracted enclosure , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better
Manual Cleaning Surfaces Spraying	Provide extract ventilation to points where emissions occur Use long handled brushes and rollers where possible. Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Ad hoc manual application via trigger sprays, dipping, etc. Rolling, Brushing	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Application of cleaning products in closed systems	No specific measures identified
Cleaning of medical devices	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	

**Safety Data Sheet****Section 3.2 -Environment**

No exposure assessment presented for the environment.

**SECTION 4****GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO****Section 4.1 - Health**

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.

**Section 4.2 -Environment**

No exposure assessment presented for the environment.



Safety Data Sheet

Exposure Scenario - Worker

SECTION 1		EXPOSURE SCENARIO TITLE
<b>Title</b>	Lubricants - Industrial	
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17, PROC 18 <b>Environmental Release Categories:</b> ERC 4, ERC 7	
<b>Scope of process</b>	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.	

SECTION 2		OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.	

Section 2.1		Control of Worker Exposure
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);	
<b>Frequency and Duration of Use</b>		
Covers daily exposures up to 8 hours (unless stated differently)		
<b>Other Operational Conditions affecting worker Exposure.</b>		
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

Contributing scenarios	Risk Management Measures
General exposures (closed systems)	No specific measures identified
General exposures (open systems)	Wear suitable gloves tested to EN374.
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Filling / preparation of equipment from drums or containers.	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.

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Initial factory fill of equipment	Use in semi-automated and predominantly enclosed filling lines
Operation and lubrication of high energy open equipment with potential for aerosol generation.	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Manual Rolling, Brushing	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Use long handled brushes and rollers where possible.
Treatment by dipping and pouring	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Spraying	Carry out in a vented booth or extracted enclosure Ensure the ventilation system is regularly maintained and tested Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin
Maintenance (of larger plant items) and machine set up	No specific measures identified
Engine lubricant service	Handle substance within a closed system
Maintenance of small items	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Remanufacture of reject articles	Provide extract ventilation to points where emissions occur
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	

<b>Section 3.2 -Environment</b>
No exposure assessment presented for the environment.

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
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**Safety Data Sheet**

**Section 4.1 - Health**

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.

**Section 4.2 -Environment**

No exposure assessment presented for the environment.



Safety Data Sheet

Exposure Scenario - Worker

SECTION 1		EXPOSURE SCENARIO TITLE
<b>Title</b>	Metal working fluids / rolling oils - Industrial	
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17 <b>Environmental Release Categories:</b> ERC 4	
<b>Scope of process</b>	Covers the use in formulated 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.	

SECTION 2		OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.	

Section 2.1		Control of Worker Exposure
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);	
<b>Frequency and Duration of Use</b>		
Covers daily exposures up to 8 hours (unless stated differently)		
<b>Other Operational Conditions affecting worker Exposure.</b>		
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

Contributing scenarios	Risk Management Measures
General exposures (closed systems)	No specific measures identified
General exposures (open systems)	Wear suitable gloves tested to EN374.
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Filling / preparation of equipment from drums or containers.	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.

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Product sampling	Use dedicated equipment Wear suitable gloves tested to EN374.
Metal machining operations	Provide extract ventilation to points where emissions occur Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Treatment by dipping and pouring	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Spraying	Carry out in a vented booth or extracted enclosure Ensure the ventilation system is regularly maintained and tested Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin
Manual Rolling, Brushing	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Use long handled brushes and rollers where possible.
Automated metal rolling/forming	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings
Semi-automated metal rolling/forming	Provide extract ventilation to points where emissions occur Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Equipment cleaning and maintenance	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	

<b>Section 3.2 -Environment</b>
No exposure assessment presented for the environment.

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	

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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.

**Section 4.2 -Environment**

No exposure assessment presented for the environment.



Safety Data Sheet

Exposure Scenario - Worker

SECTION 1		EXPOSURE SCENARIO TITLE
<b>Title</b>	Metal working fluids / rolling oils - Professional	
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 22 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17 <b>Environmental Release Categories:</b> ERC 8A, ERC 8D	
<b>Scope of process</b>	Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.	

SECTION 2		OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.	

Section 2.1		Control of Worker Exposure
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);	
<b>Frequency and Duration of Use</b>		
Covers daily exposures up to 8 hours (unless stated differently)		
<b>Other Operational Conditions affecting worker Exposure.</b>		
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

Contributing scenarios	Risk Management Measures
General exposures (closed systems)	No specific measures identified
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Filling / preparation of equipment from drums or containers. Dedicated facility	No specific measures identified

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Filling / preparation of equipment from drums or containers. Non-dedicated facility	Ensure material transfers are under containment or extract ventilation Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Product sampling	Use dedicated equipment Wear suitable gloves tested to EN374.
Metal machining operations	Provide extract ventilation to points where emissions occur Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Manual Rolling, Brushing	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Use long handled brushes and rollers where possible.
Treatment by dipping and pouring	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Spraying	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin Carry out in a vented booth or extracted enclosure , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better
Equipment cleaning and maintenance Dedicated facility	No specific measures identified
Equipment cleaning and maintenance Non-dedicated facility	Provide extract ventilation to points where emissions occur Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	

<b>Section 3.2 -Environment</b>
No exposure assessment presented for the environment.

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE</b>
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**Safety Data Sheet**

<b>SCENARIO</b>	
<b>Section 4.1 - Health</b>	
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.	
<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



Safety Data Sheet

Exposure Scenario - Worker

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	Use in Agrochemicals uses - Professional
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 22 <b>Process Categories:</b> PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 <b>Environmental Release Categories:</b> ERC 8A, ERC 8D
<b>Scope of process</b>	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Worker Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

Contributing scenarios	Risk Management Measures
Transfer from/pouring from containers Dedicated facility	No specific measures identified
Mixing operations (open systems)	Use drum pumps or carefully pour from container Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Spraying/fogging by manual application	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin Carry out in a vented booth or extracted enclosure , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better
Spraying/fogging by machine application	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20

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Ad hoc manual application via trigger sprays, dipping, etc.	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Equipment cleaning and maintenance	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Disposal of wastes	Retain drain downs in sealed storage pending disposal or for subsequent recycle
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.</p> <p>For some of the Contributing Scenarios workplace exposures have been estimated from measured data.</p>	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



Safety Data Sheet

Exposure Scenario - Worker

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Functional Fluids - Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9 <b>Environmental Release Categories:</b> ERC 7
<b>Scope of process</b>	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Filling of articles/equipment	Fill containers/cans at dedicated fill points supplied with local extract ventilation Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Filling / preparation of equipment from drums or containers.	Use dedicated equipment Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
General exposures.	No specific measures identified



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(closed systems)	
General exposures. (open systems)	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Equipment maintenance	Drain down system prior to equipment break-in or maintenance Wear suitable gloves tested to EN374.
Remanufacture of reject articles	Drain down system prior to equipment break-in or maintenance Wear suitable gloves tested to EN374.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



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Exposure Scenario - Worker

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	Functional Fluids - Professional
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 22 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 8a, PROC 9, PROC 20 <b>Environmental Release Categories:</b> ERC 9A, ERC 9B
<b>Scope of process</b>	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Worker Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

Contributing scenarios	Risk Management Measures
Drum/batch transfers	Use drum pumps or carefully pour from container Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Transfer from/pouring from containers	Use drum pumps or carefully pour from container Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Filling / preparation of equipment from drums or containers.	Use drum pumps or carefully pour from container Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
General exposures. (closed systems)	No specific measures identified
Remanufacture of reject articles	Drain down system prior to equipment break-in or maintenance Wear suitable gloves tested to EN374.



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Equipment maintenance	Drain down system prior to equipment break-in or maintenance Wear suitable gloves tested to EN374.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



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Exposure Scenario - Worker

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	De-icing and anti-icing applications - Professional
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 22 <b>Process Categories:</b> PROC 1, PROC 2, PROC 8a, PROC 8b, PROC 11 <b>Environmental Release Categories:</b> ERC 8D
<b>Scope of process</b>	Ice prevention and de-icing of vehicles, aircraft and other equipment by spraying.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Worker Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

Contributing scenarios	Risk Management Measures
bulk open unloading	Use dedicated equipment , or: Ensure material transfers are under containment or extract ventilation
Filling / preparation of equipment from drums or containers.	Use drum pumps or carefully pour from container Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
General exposures. (closed systems)	No specific measures identified
Material transfers elevated temperature	Use dedicated equipment , or: Ensure material transfers are under containment or extract ventilation
Spraying/fogging by machine application	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20

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elevated temperature	
Spraying/fogging by manual application	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training. Wear suitable coveralls to prevent exposure to the skin Carry out in a vented booth or extracted enclosure , or: Wear a respirator conforming to EN140 with Type A/P2 filter or better
Equipment maintenance	Drain down system prior to equipment break-in or maintenance Wear suitable gloves tested to EN374.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. For some of the Contributing Scenarios workplace exposures have been estimated from measured data.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



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**Exposure Scenario - Worker**

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Use in laboratories - Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3 <b>Process Categories:</b> PROC 15 <b>Environmental Release Categories:</b> ERC 2, ERC 4
<b>Scope of process</b>	Use of the substance within laboratory settings, including material transfers and equipment cleaning.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
Laboratory activities small scale	No specific measures identified

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	



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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.

**Section 4.2 -Environment**

No exposure assessment presented for the environment.

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**Exposure Scenario - Worker**

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Use in laboratories - Professional
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 22 <b>Process Categories:</b> PROC 15 <b>Environmental Release Categories:</b> ERC 8A
<b>Scope of process</b>	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

<b>Contributing scenarios</b>	<b>Risk Management Measures</b>
Laboratory activities small scale	No specific measures identified

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	



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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.

**Section 4.2 -Environment**

No exposure assessment presented for the environment.



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Exposure Scenario - Worker

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	Water treatment chemicals - Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 3 <b>Process Categories:</b> PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 <b>Environmental Release Categories:</b> ERC 3, ERC 4
<b>Scope of process</b>	Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Worker Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
<b>Concentration of substance in product</b>	Covers percentage substance in the product up to 100 % (unless stated differently);
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently)	
<b>Other Operational Conditions affecting worker Exposure.</b>	
Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature (unless stated differently).	

Contributing scenarios	Risk Management Measures
General exposures (closed systems)	No specific measures identified
General exposures (open systems)	Wear suitable gloves tested to EN374.
Bulk transfers Dedicated facility	No specific measures identified
Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation
Drum/batch transfers	Use drum pumps or carefully pour from container Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Pouring from small containers	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.

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Dipping, immersion and pouring	Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance Wear chemically resistant gloves (tested to EN374) in combination with #basic# employee training.
Storage	Store substance within a closed system

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



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Exposure Scenarios - Consumer

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	Uses in Coatings - Consumer
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 21 <b>Product Categories:</b> PC1, PC9a, PC15, PC18, PC31, PC32 <b>Environmental Release Categories:</b> ERC 8A, ERC 8D
<b>Scope of process</b>	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Consumer Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure > 10 Pa at STP
<b>Concentration of substance in product</b>	Unless otherwise stated:
	Covers concentration up to (%): 5 %
<b>Amounts used</b>	
Unless otherwise stated:	
For each use event, covers amount up to (g):	9,000
<b>Frequency and Duration of Use</b>	
Unless otherwise stated:	
Covers use up to (days/year):	365
Covers use up to (times/day of use):	1
Covers use up to (hours/event):	10

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, Sealants. Glues DIY-use (carpet glue, tile glue, wood parquet glue).	Covers concentrations up to 0.1 %
	For each use event, covers amount up to 9,000 g
	Covers use up to 0.25 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 1.25 hours/event
	Covers skin contact area 110 cm <sup>2</sup>
	Covers use in room size of 58 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Coatings and Paints, Thinners, paint removers Waterborne latex wall paint.	Covers concentrations up to 5 %



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	For each use event, covers amount up to 1,250 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 2.20 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 20 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Coatings and Paints, Thinners, paint removers Solvent rich, high solid, water borne paint.	Covers concentrations up to 5 %
	For each use event, covers amount up to 1,250 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 2.20 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 20 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Coatings and Paints, Thinners, paint removers Aerosol spray can.	Covers concentrations up to 5 %
	For each use event, covers amount up to 1,250 g
	Covers use up to 2 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 0.25 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in a one car garage (34 m <sup>3</sup> ) under typical ventilation.
	Covers use at ambient temperatures.
Coatings and Paints, Thinners, paint removers Removers (paint-, glue-, wall paper-, sealant-remover).	Covers concentrations up to 5 %
	For each use event, covers amount up to 1,250 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 2.20 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 20 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Non-metal-surface treatment products. Waterborne latex wall paint.	Covers concentrations up to 5 %
	For each use event, covers amount up to 1,250 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 2.20 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 20 m <sup>3</sup>



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	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Non-metal-surface treatment products. Solvent rich, high solid, water borne paint.	Covers concentrations up to 5 %
	For each use event, covers amount up to 1,250 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 2.20 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 20 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Non-metal-surface treatment products. Aerosol spray can.	Covers concentrations up to 5 %
	For each use event, covers amount up to 1,250 g
	Covers use up to 2 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 0.25 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in a one car garage (34 m <sup>3</sup> ) under typical ventilation.
	Covers use at ambient temperatures.
Non-metal-surface treatment products. Removers (paint-, glue-, wall paper-, sealant-remover).	Covers concentrations up to 5 %
	For each use event, covers amount up to 1,250 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 2.20 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 20 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Ink and Toners	Covers concentrations up to 5 %
	For each use event, covers amount up to 50 g
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 10 hours/event
	Covers skin contact area 215 cm <sup>2</sup>
	Covers use in room size of 25 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Polishes and Wax Blends Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 2.5 %
	For each use event, covers amount up to 550 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use



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	Covers exposure up to 4 hours/event
	Covers skin contact area 430 cm <sup>2</sup>
	Covers use in room size of 58 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Polymer Preparations and Compounds.	Covers concentrations up to 5 %
	For each use event, covers amount up to 825 g
	Covers use up to 0.2 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 0.5 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 58 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



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Exposure Scenarios - Consumer

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	Use in Cleaning Agents - Consumer
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 21 <b>Product Categories:</b> PC35 <b>Environmental Release Categories:</b> ERC 8A, ERC 8D
<b>Scope of process</b>	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.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Consumer Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure > 10 Pa at STP

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Washing and Cleaning Products (including solvent based products). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 20 %
	For each use event, covers amount up to 500 g
	Covers use up to 104 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 0.01 hours/event
	Covers skin contact area 215 cm <sup>2</sup>
	Covers use in room size of 1 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Washing and Cleaning Products (including solvent based products). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 4 %
	For each use event, covers amount up to 400 g
	Covers use up to 104 days/year
	Covers use up to 1 times/day of use



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	Covers exposure up to 4 hours/event
	Covers skin contact area 215 cm <sup>2</sup>
	Covers use in room size of 58 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Washing and Cleaning Products (including solvent based products). Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	Covers concentrations up to 5 %
	For each use event, covers amount up to 19 g
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 1 hours/event
	Covers skin contact area 1,900 cm <sup>2</sup>
	Covers use in room size of 15 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



Safety Data Sheet

Exposure Scenarios - Consumer

SECTION 1	EXPOSURE SCENARIO TITLE
<b>Title</b>	De-icing and anti-icing applications - Consumer
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 21 <b>Product Categories:</b> PC4 <b>Environmental Release Categories:</b> ERC 8D
<b>Scope of process</b>	De-icing of vehicles and similar equipment by spraying.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
<b>Additional Information</b>	No exposure assessment presented for the environment.

Section 2.1	Control of Consumer Exposure
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure > 10 Pa at STP
<b>Concentration of substance in product</b>	Unless otherwise stated:
	Covers concentration up to (%): 100 %
<b>Amounts used</b>	
Unless otherwise stated:	
For each use event, covers amount up to (g):	5,000
<b>Frequency and Duration of Use</b>	
Unless otherwise stated:	
Covers use up to (days/year):	365
Covers use up to (hours/event):	4

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Anti-Freeze and De-icing products. Washing car window.	Covers concentrations up to 100 %
	For each use event, covers amount up to 33 g
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 4 hours/event
	Covers skin contact area 215 cm <sup>2</sup>
	Covers use in room size of 58 m <sup>3</sup>
	Covers use under typical household ventilation.
	Covers use at ambient temperatures.
Anti-Freeze and De-icing products. Pouring into radiator.	Covers concentrations up to 30 %
	For each use event, covers amount up to 5,000 g
	Covers use up to 1 days/year
	Covers use up to 1 times/day of use
	Covers exposure up to 0.25 hours/event



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	Covers skin contact area 960 cm <sup>2</sup>
	Covers use in a one car garage (34 m <sup>3</sup> ) under typical ventilation.
	Covers use at ambient temperatures.

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
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.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	



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Exposure Scenarios - Consumer

<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	Other Consumer Uses - Consumer
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU 21 <b>Product Categories:</b> PC28, PC39 <b>Environmental Release Categories:</b> ERC 8A, ERC 8D
<b>Scope of process</b>	Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for human health. No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Consumer Exposure</b>
<b>Product Characteristics</b>	

<b>Product Categories</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
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<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
No exposure assessment presented for human health.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
No exposure assessment presented for human health.	

<b>Section 4.2 -Environment</b>	
No exposure assessment presented for the environment.	