

## MOLYKOTE(R) D-7409 ANTI-FRICTION COATING

Version 1.1      Revision Date: 01.04.2015      MSDS Number: 731227-00002      Date of last issue: 10.11.2014  
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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name : MOLYKOTE(R) D-7409 ANTI-FRICTION COATING  
Product code : 000000000004090125

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

Use of the Sub-stance/Mixture : Lubricants and lubricant additives

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

Company : Dow Corning Europe S.A.  
rue Jules Bordet - Parc Industriel - Zone C  
B-7180 Seneffe

Telephone : English Tel: +49 611237507  
Deutsch Tel: +49 611237500  
Français Tel: +32 64511149  
Italiano Tel: +32 64511170  
Español Tel: +32 64511163

E-mail address of person responsible for the SDS : sdseu@dowcorning.com

#### 1.4 Emergency telephone number

Dow Corning (Barry U.K. 24h) Tél: +44 1446732350  
Dow Corning (Wiesbaden 24h) Tél: +49 61122158  
Dow Corning (Seneffe 24h) Tel: +32 64 888240

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Reproductive toxicity, Category 1B	H360D: May damage the unborn child.
Specific target organ toxicity - single exposure, Category 3	H335: May cause respiratory irritation.
Specific target organ toxicity - repeated	H373: May cause damage to organs through pro-

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exposure, Category 2

longed or repeated exposure.

### Classification (67/548/EEC, 1999/45/EC)

Flammable

R10: Flammable.

Toxic to Reproduction Category 1

R61: May cause harm to the unborn child.

Harmful

R20/21: Harmful by inhalation and in contact with skin.

Irritant

R41: Risk of serious damage to eyes.

R37/38: Irritating to respiratory system and skin.

## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



Signal word

: Danger

Hazard statements

:

H226  
H315  
H318  
H335  
H360D  
H373

Flammable liquid and vapour.  
Causes skin irritation.  
Causes serious eye damage.  
May cause respiratory irritation.  
May damage the unborn child.  
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

:

#### Prevention:

P201  
P210

Obtain special instructions before use.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260  
P271

Do not breathe spray.  
Use only outdoors or in a well-ventilated area.

P280

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

#### Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Hazardous components which must be listed on the label:

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N-Ethyl-2-pyrrolidone

Xylene

### Additional Labelling:

Restricted to professional users.

### 2.3 Other hazards

Vapours may form explosive mixture with air.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Inorganic and organic compounds  
Mixture

#### Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
N-Ethyl-2-pyrrolidone	2687-91-4 220-250-6	Repr.Cat.2; R61 Xi; R41	Eye Dam. 1; H318 Repr. 1B; H360D	>= 30 - < 50
Xylene	1330-20-7 215-535-7 01- 2119488216-32	R10 Xn; R65-R20/21 Xi; R36/37/38	Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT RE 2; H373 Asp. Tox. 1; H304	>= 20 - < 25
Ethylbenzene	100-41-4 202-849-4	F; R11 Xn; R20-R65- R48/20	Flam. Liq. 2; H225 Acute Tox. 4; H332 STOT RE 2; H373 Asp. Tox. 1; H304 Aquatic Chronic 3; H412	>= 2.5 - < 10

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.

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- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention immediately.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention.  
Rinse mouth thoroughly with water.

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

- Risks : Causes skin irritation.  
Causes serious eye damage.  
May cause respiratory irritation.  
May damage the unborn child.  
May cause damage to organs through prolonged or repeated exposure.

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

- Treatment : Treat symptomatically and supportively.
- 

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Dry chemical  
Carbon dioxide (CO<sub>2</sub>)
- Unsuitable extinguishing media : High volume water jet

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

- Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.

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Flash back possible over considerable distance.  
Vapours may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NOx)  
Metal oxides  
Sulphur oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

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## SECTION 6: Accidental release measures

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

Personal precautions : Remove all sources of ignition.  
Use personal protective equipment.  
Follow safe handling advice and personal protective equipment recommendations.

### 6.2 Environmental precautions

Environmental precautions : Discharge into the environment must be avoided.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

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

Methods for cleaning up : Non-sparking tools should be used.  
Soak up with inert absorbent material.  
Suppress (knock down) gases/vapours/mists with a water spray jet.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and dis-

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posal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- |                         |   |   |
|-------------------------|---|---|
| Technical measures      | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.   |
| Local/Total ventilation | : | Use with local exhaust ventilation.<br>Use only in an area equipped with explosion proof exhaust ventilation.   |
| Advice on safe handling | : | Do not get on skin or clothing.<br>Do not breathe vapours or spray mist.<br>Do not swallow.<br>Do not get in eyes.<br>Handle in accordance with good industrial hygiene and safety practice.<br>Non-sparking tools should be used.<br>Keep container tightly closed.<br>Keep away from heat and sources of ignition.<br>Take precautionary measures against static discharges.<br>Take care to prevent spills, waste and minimize release to the environment. |
| Hygiene measures        | : | Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.  |

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

- |   |   |   |
|---|---|---|
| Requirements for storage areas and containers | : | Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.                                       |
| Advice on common storage                      | : | Do not store with the following product types:<br>Strong oxidizing agents<br>Organic peroxides<br>Flammable solids<br>Pyrophoric liquids<br>Pyrophoric solids<br>Self-heating substances and mixtures<br>Substances and mixtures, which in contact with water, emit |

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flammable gases  
Explosives  
Gases

**7.3 Specific end use(s)**

Specific use(s) : These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.  
For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry ([www.SEHSC.com](http://www.SEHSC.com)) or contact the Dow Corning customer service group.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Xylene	1330-20-7	TWA	50 ppm 220 mg/m3	GB EH40
Further information	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	100 ppm 441 mg/m3	GB EH40
Further information	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		TWA	50 ppm 221 mg/m3	2000/39/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	100 ppm 442 mg/m3	2000/39/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
Molybdenum sulfide	1317-33-5	TWA	10 mg/m3 (Molybdenum)	GB EH40
		STEL	20 mg/m3 (Molybdenum)	GB EH40
Ethylbenzene	100-41-4	TWA	100 ppm 442 mg/m3	2000/39/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	200 ppm 884 mg/m3	2000/39/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
		TWA	100 ppm 441 mg/m3	GB EH40
Further information	Can be absorbed through skin. The assigned substances are those for which			

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	there are concerns that dermal absorption will lead to systemic toxicity.		
	STEL	125 ppm 552 mg/m <sup>3</sup>	GB EH40
Further information	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
Graphite	7782-42-5	TWA (inhalable dust)	10 mg/m <sup>3</sup> GB EH40
Further information	<p>For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m<sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m<sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used</p>		
	TWA (Respirable dust)	4 mg/m <sup>3</sup>	GB EH40
Further information	<p>For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust, The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m<sup>-3</sup> 8-hour TWA of inhalable dust or 4 mg.m<sup>-3</sup> 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit., Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3., Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with., Where no specific short-term exposure limit is listed,</p>		



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a figure three times the long-term exposure should be used

**Biological occupational exposure limits**

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Xylene	1330-20-7	methyl hippuric acid: 650 mmol/mol creatinine (Urine)	Post shift	GB EH40 BAT

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

N-Ethyl-2-pyrrolidone : End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 11 mg/m3  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term local effects  
Value: 13 mg/m3  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Acute local effects  
Value: 26 mg/m3  
End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Long-term systemic effects  
Value: 4 mg/kg bw/day

Xylene : End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Acute systemic effects  
Value: 289 mg/m3  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Acute local effects  
Value: 289 mg/m3  
End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Long-term systemic effects  
Value: 180 mg/kg bw/day  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 77 mg/m3  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Acute systemic effects  
Value: 174 mg/m3  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Acute local effects  
Value: 174 mg/m3  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Long-term systemic effects

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Ethylbenzene : Value: 108 mg/kg bw/day  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 14.8 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Ingestion  
Potential health effects: Long-term systemic effects  
Value: 1.6 mg/kg bw/day  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Acute local effects  
Value: 293 mg/m<sup>3</sup>  
End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Long-term systemic effects  
Value: 180 mg/kg bw/day  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 77 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 15 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Ingestion  
Potential health effects: Long-term systemic effects  
Value: 1.6 mg/kg bw/day  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Long-term local effects  
Value: 0.3 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Ingestion  
Potential health effects: Long-term systemic effects  
Value: 813 mg/kg bw/day  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term local effects  
Value: 1.2 mg/m<sup>3</sup>

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

N-Ethyl-2-pyrrolidone : Fresh water  
Value: 0.25 mg/l  
Marine water  
Value: 0.025 mg/l  
Intermittent use/release  
Value: 1 mg/l  
Sewage treatment plant  
Value: 10 mg/l  
Fresh water sediment  
Value: 1.91 mg/kg

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Xylene	Marine sediment	Value: 0.191 mg/kg
	Soil	Value: 0.235 mg/kg
	: Fresh water	Value: 0.327 mg/l
	Marine water	Value: 0.327 mg/l
	Intermittent use/release	Value: 0.327 mg/l
	Sewage treatment plant	Value: 6.58 mg/l
	Fresh water sediment	Value: 12.46 mg/kg
	Marine sediment	Value: 12.46 mg/kg
	Soil	Value: 2.31 mg/kg
	Ethylbenzene	: Fresh water
Marine water		Value: 0.01 mg/l
Intermittent use/release		Value: 0.1 mg/l
Sewage treatment plant		Value: 9.6 mg/l
Fresh water sediment		Value: 13.7 mg/kg
Soil		Value: 2.68 mg/kg
Oral		Value: 0.02 g/kg

### 8.2 Exposure controls

#### Engineering measures

Minimize workplace exposure concentrations.  
Use only in an area equipped with explosion proof exhaust ventilation.  
Use with local exhaust ventilation.

#### Personal protective equipment

Eye protection : Wear the following personal protective equipment:  
Chemical resistant goggles must be worn.  
If splashes are likely to occur, wear:  
Face-shield

Hand protection  
Material : Impervious gloves  
Flame retardant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not

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determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

- Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Wear the following personal protective equipment:  
Flame retardant antistatic protective clothing.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
- Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
- Filter type : Combined particulates and organic vapour type (A-P)
- 

### SECTION 9: Physical and chemical properties

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

- Appearance : liquid
- Colour : grey
- Odour : aromatic
- Odour Threshold : No data available
- pH : No data available
- Melting point/freezing point : No data available
- Initial boiling point and boiling range : 138 °C
- Flash point : 40 °C  
Method: Tag closed cup
- Evaporation rate : No data available
- Flammability (solid, gas) : Not applicable
- Upper explosion limit : No data available
- Lower explosion limit : No data available
- Vapour pressure : No data available

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Relative vapour density	:	No data available
Relative density	:	1.1
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	400 mPa.s
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

### 9.2 Other information

Molecular weight	:	No data available
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Not classified as a reactivity hazard.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions	:	Flammable liquid and vapour. Vapours may form explosive mixture with air. Can react with strong oxidizing agents. When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapours. Safe handling conditions may be maintained by keeping vapour concentrations within the occupational exposure limit for formaldehyde.
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### 10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames and sparks.
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### 10.5 Incompatible materials

Materials to avoid	:	Oxidizing agents
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### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

Not classified based on available information.

#### Product:

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

#### Components:

##### **N-Ethyl-2-pyrrolidone:**

Acute oral toxicity : LD50 (Rat): 3,200 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

##### **Xylene:**

Acute oral toxicity : LD50 (Rat): 4,300 mg/kg  
Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity : Acute toxicity estimate: 11 mg/l  
Test atmosphere: vapour  
Method: Expert judgement  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : Acute toxicity estimate: 1,100 mg/kg  
Method: Expert judgement  
Remarks: Based on harmonised classification in EU regulation

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1272/2008, Annex VI

### **Ethylbenzene:**

Acute oral toxicity : LD50 (Rat): 3,500 mg/kg  
Acute inhalation toxicity : LC50 (Rat): 17.2 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

### **Skin corrosion/irritation**

Causes skin irritation.

#### **Components:**

##### **N-Ethyl-2-pyrrolidone:**

Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation

##### **Xylene:**

Species: Rabbit  
Result: Skin irritation

### **Serious eye damage/eye irritation**

Causes serious eye damage.

#### **Components:**

##### **N-Ethyl-2-pyrrolidone:**

Species: Rabbit  
Method: OECD Test Guideline 405  
Result: Irreversible effects on the eye

##### **Xylene:**

Species: Rabbit  
Result: Irritation to eyes, reversing within 7 days

##### **Ethylbenzene:**

Species: Rabbit  
Result: No eye irritation

### **Respiratory or skin sensitisation**

Skin sensitisation: Not classified based on available information.  
Respiratory sensitisation: Not classified based on available information.

#### **Components:**

##### **N-Ethyl-2-pyrrolidone:**

Test Type: Local lymph node assay (LLNA)  
Exposure routes: Skin contact  
Species: Mouse  
Method: OECD Test Guideline 429

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Result: negative

### **Xylene:**

Test Type: Local lymph node assay (LLNA)  
Exposure routes: Skin contact  
Species: Mouse  
Method: OECD Test Guideline 429  
Result: negative

### **Ethylbenzene:**

Test Type: Human repeat insult patch test (HRIPT)  
Exposure routes: Skin contact  
Result: negative

### **Germ cell mutagenicity**

Not classified based on available information.

### **Components:**

#### **N-Ethyl-2-pyrrolidone:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative

#### **Xylene:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Result: negative

: Test Type: In vitro sister chromatid exchange assay in mam-  
malian cells  
Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)  
Species: Mouse  
Application Route: Skin contact  
Result: negative

#### **Ethylbenzene:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Result: negative

: Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Genotoxicity in vivo : Test Type: Unscheduled DNA synthesis (UDS) test with



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mammalian liver cells in vivo  
Species: Mouse  
Application Route: Inhalation  
Method: OECD Test Guideline 486  
Result: negative

### **Carcinogenicity**

Not classified based on available information.

### **Components:**

#### **Xylene:**

Species: Rat  
Application Route: Ingestion  
Exposure time: 103 weeks  
Result: negative

#### **Ethylbenzene:**

Species: Rat  
Application Route: Inhalation  
Exposure time: 104 weeks  
Result: positive  
Remarks: The mechanism or mode of action may not be relevant in humans.

### **Reproductive toxicity**

May damage the unborn child.

### **Components:**

#### **N-Ethyl-2-pyrrolidone:**

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: positive

Reproductive toxicity - Assessment : Clear evidence of adverse effects on development, based on animal experiments.

#### **Xylene:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: inhalation (vapour)  
Result: negative

#### **Ethylbenzene:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)

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Method: OECD Test Guideline 415  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Inhalation  
Method: OECD Test Guideline 414  
Result: negative

### **STOT - single exposure**

May cause respiratory irritation.

#### **Components:**

##### **Xylene:**

Assessment: May cause respiratory irritation.

### **STOT - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

#### **Components:**

##### **Xylene:**

Exposure routes: inhalation (vapour)

Target Organs: Central nervous system, Liver, Kidney

Assessment: Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

##### **Ethylbenzene:**

Exposure routes: inhalation (vapour)

Target Organs: Auditory system

Assessment: Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

### **Repeated dose toxicity**

#### **Components:**

##### **N-Ethyl-2-pyrrolidone:**

Species: Rat

NOAEL: 100 mg/kg

Application Route: Ingestion

Exposure time: 3 m

Method: OECD Test Guideline 408

##### **Xylene:**

Species: Rat

NOAEL: 4.35 mg/l

Application Route: inhalation (vapour)

Exposure time: 90 d

##### **Ethylbenzene:**

Species: Rat, female

LOAEL: 75 ppm

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Application Route: inhalation (vapour)  
Exposure time: 104 w

### Aspiration toxicity

Not classified based on available information.

### Components:

#### **Xylene:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

#### **Ethylbenzene:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

##### **N-Ethyl-2-pyrrolidone:**

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 464 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 104 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae : NOEC (Desmodesmus subspicatus (green algae)): > 101 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 12.5 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

##### **Xylene:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 13.5 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3.2 mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials
- Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 3.2 mg/l  
Exposure time: 72 h  
Remarks: Based on data from similar materials
-

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Toxicity to bacteria : EC50 : > 157 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

### **Ethylbenzene:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l  
Exposure time: 48 h

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 5.4 mg/l  
Exposure time: 72 h

Toxicity to bacteria : EC50 (Nitrosomonas sp.): 96 mg/l  
Exposure time: 24 h  
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.96 mg/l  
Exposure time: 7 d  
Species: Ceriodaphnia dubia (water flea)

## 12.2 Persistence and degradability

### **Components:**

#### **N-Ethyl-2-pyrrolidone:**

Biodegradability : Result: Readily biodegradable  
Biodegradation: 90 - 100 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301A

#### **Xylene:**

Biodegradability : Result: Readily biodegradable  
Biodegradation: 87.8 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

#### **Ethylbenzene:**

Biodegradability : Result: Readily biodegradable  
Biodegradation: 70 - 80 %  
Exposure time: 28 d

## 12.3 Bioaccumulative potential

### **Components:**

#### **N-Ethyl-2-pyrrolidone:**

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Partition coefficient: n-octanol/water : log Pow: -0.2

**Xylene:**

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)  
Bioconcentration factor (BCF): 5.4 - 25.9

Partition coefficient: n-octanol/water : log Pow: 3.12 - 3.2

**Ethylbenzene:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): < 100  
Remarks: Based on data from similar materials

Partition coefficient: n-octanol/water : log Pow: 3.6

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

Not relevant

### 12.6 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.  
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging : Dispose of as unused product.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not burn, or use a cutting torch on, the empty drum.

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## SECTION 14: Transport information

### 14.1 UN number

ADN	: UN 3295
ADR	: UN 3295
RID	: UN 3295

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**IMDG** : UN 3295

**IATA** : UN 3295

**14.2 UN proper shipping name**

**ADN** : HYDROCARBONS, LIQUID, N.O.S.

**ADR** : HYDROCARBONS, LIQUID, N.O.S.

**RID** : HYDROCARBONS, LIQUID, N.O.S.

**IMDG** : HYDROCARBONS, LIQUID, N.O.S.

**IATA** : Hydrocarbons, liquid, n.o.s.

**14.3 Transport hazard class(es)**

**ADN** : 3

**ADR** : 3

**RID** : 3

**IMDG** : 3

**IATA** : 3

**14.4 Packing group**

**ADN**

Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30  
Labels : 3

**ADR**

Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30  
Labels : 3  
Tunnel restriction code : (D/E)

**RID**

Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30  
Labels : 3

**IMDG**

Packing group : III  
Labels : 3  
EmS Code : F-E, S-D

**IATA**

Packing instruction (cargo aircraft) : 366  
Packing instruction (passenger aircraft) : 355  
Packing instruction (LQ) : Y344

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Packing group : III  
Labels : Flammable Liquids

### 14.5 Environmental hazards

**ADN**  
Environmentally hazardous : no

**ADR**  
Environmentally hazardous : no

**RID**  
Environmentally hazardous : no

**IMDG**  
Marine pollutant : no

### 14.6 Special precautions for user

Not applicable

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks : Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Seveso II - Directive 2003/105/EC amending Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

6	Flammable.	Quantity 1 5,000 t	Quantity 2 50,000 t
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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P5c	FLAMMABLE LIQUIDS	5,000 t	50,000 t
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Other regulations : Take note of Dir 94/33/EC on the protection of young people at work.  
Take note of Dir 92/85/EEC on the safety and health at work

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of pregnant workers.

**The components of this product are reported in the following inventories:**

- KECI : All ingredients listed, exempt or notified.
- REACH : All ingredients (pre-)registered or exempt.
- IECSC : All ingredients listed or exempt.
- ENCS/ISHL : All components are listed on ENCS/ISHL or exempted from inventory listing.
- PICCS : All ingredients listed or exempt.
- DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).
- TSCA : All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
- AICS : Consult your local Dow Corning office.
- NZIoC : All ingredients listed or exempt.

### Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.

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## SECTION 16: Other information

### Full text of R-Phrases

- R10 : Flammable.  
R11 : Highly flammable.  
R20 : Harmful by inhalation.



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R20/21 : Harmful by inhalation and in contact with skin.  
R36/37/38 : Irritating to eyes, respiratory system and skin.  
R41 : Risk of serious damage to eyes.  
R48/20 : Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
R61 : May cause harm to the unborn child.  
R65 : Harmful: may cause lung damage if swallowed.

### Full text of H-Statements

H225 : Highly flammable liquid and vapour.  
H226 : Flammable liquid and vapour.  
H304 : May be fatal if swallowed and enters airways.  
H312 : Harmful in contact with skin.  
H315 : Causes skin irritation.  
H318 : Causes serious eye damage.  
H319 : Causes serious eye irritation.  
H332 : Harmful if inhaled.  
H335 : May cause respiratory irritation.  
H360D : May damage the unborn child.  
H373 : May cause damage to organs through prolonged or repeated exposure.  
H412 : Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

Acute Tox. : Acute toxicity  
Aquatic Chronic : Chronic aquatic toxicity  
Asp. Tox. : Aspiration hazard  
Eye Dam. : Serious eye damage  
Eye Irrit. : Eye irritation  
Flam. Liq. : Flammable liquids  
Repr. : Reproductive toxicity  
Skin Irrit. : Skin irritation  
STOT RE : Specific target organ toxicity - repeated exposure  
STOT SE : Specific target organ toxicity - single exposure  
2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values  
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits  
GB EH40 BAT : UK. Biological monitoring guidance values  
2000/39/EC / TWA : Limit Value - eight hours  
2000/39/EC / STEL : Short term exposure limit  
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)  
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

### Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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GB / EN