

## MOLYKOTE(R) 1000 SPRAY

Version 3.1      Revision Date: 16.10.2015      SDS Number: 638681-00005      Date of last issue: 23.09.2015  
Date of first issue: 16.10.2014

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

#### 1.1 Product identifier

Trade name : MOLYKOTE(R) 1000 SPRAY  
Product code : 000000000001606751, 000000000001606751

#### 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)

Aerosols, Category 1	H222: Extremely flammable aerosol. H229: Pressurised container: May burst if heated.
Acute aquatic toxicity, Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity, Category 1	H410: Very toxic to aquatic life with long lasting effects.

#### 2.2 Label elements

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

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Hazard pictograms :



Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.  
H229 Pressurised container: May burst if heated.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P261 Avoid breathing spray.  
P271 Use only outdoors or in a well-ventilated area.  
**Storage:**  
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

**2.3 Other hazards**

None known.

**SECTION 3: Composition/information on ingredients**

**3.2 Mixtures**

Chemical nature : Hydrocarbon aerosol propellant

**Hazardous components**

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
Naphtha (petroleum), hydrotreated heavy	64742-48-9 265-150-3	Flam. Liq. 3; H226 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 3; H412	>= 10 - < 20
Copper metal powder	7440-50-8 231-159-6	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 1 - < 2.5

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Zinc	7440-66-6 231-175-3	Pyr. Sol. 1; H250 Water-react. 1; H260 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0.25 - < 1
N-Tallow Alkyltrimethylenedia- mine Oleate	61791-53-5 263-186-4	Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400	< 0.1
Substances with a workplace exposure limit :			
Calcium fluoride	7789-75-5 232-188-7		>= 1 - < 10

**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.
- 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 if symptoms occur.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water.  
Remove contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.

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

None known.

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

Treatment : Treat symptomatically and supportively.

**SECTION 5: Firefighting measures**

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### 5.1 Extinguishing media

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

Unsuitable extinguishing media : None known.

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

Specific hazards during fire-fighting : Flash back possible over considerable distance.  
Vapours may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.  
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.

Hazardous combustion products : Carbon oxides  
Fluorine compounds  
Metal 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.



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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 disposal 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 only with adequate ventilation.  
Use only in an area equipped with explosion proof exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing.  
Avoid inhalation of vapour or mist.  
Do not swallow.  
Avoid contact with eyes.  
Handle in accordance with good industrial hygiene and safety practice.  
Keep away from heat and sources of ignition.  
Take precautionary measures against static discharges.  
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. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Do not pierce or burn, even after use. Keep cool. Protect from sunlight.
- Advice on common storage : Do not store with the following product types:  
Self-reactive substances and mixtures  
Organic peroxides  
Oxidizing agents

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Flammable solids  
Pyrophoric liquids  
Pyrophoric solids  
Self-heating substances and mixtures  
Substances and mixtures, which in contact with water, emit flammable gases  
Explosives

**7.3 Specific end use(s)**

Specific use(s) : 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
Calcium fluoride	7789-75-5	TWA	2.5 mg/m <sup>3</sup> (Fluorine)	2000/39/EC
Further information	Indicative			
		TWA	2.5 mg/m <sup>3</sup> (Fluorine)	GB EH40
Further information	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			
Graphite	7782-42-5	TWA (inhalable dust)	10 mg/m <sup>3</sup>	GB EH40
Further information	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			

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	should be complied with., Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			
		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, a figure three times the long-term exposure should be used</p>			
Copper metal powder	7440-50-8	TWA (Fumes)	0.2 mg/m <sup>3</sup> (Copper)	GB EH40
		TWA (Dusts and mists)	1 mg/m <sup>3</sup> (Copper)	GB EH40
		STEL (Dusts and mists)	2 mg/m <sup>3</sup> (Copper)	GB EH40

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Calcium fluoride	Workers	Inhalation	Long-term systemic effects	5 mg/m <sup>3</sup>
	Consumers	Ingestion	Long-term systemic effects	0.02 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0.5 mg/m <sup>3</sup>
Graphite	Consumers	Inhalation	Long-term local effects	0.3 mg/m <sup>3</sup>
	Consumers	Ingestion	Long-term systemic effects	813 mg/kg bw/day
	Workers	Inhalation	Long-term local effects	1.2 mg/m <sup>3</sup>
Copper metal powder	Consumers	Inhalation	Acute systemic ef-	20 mg/m <sup>3</sup>

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			fects	
	Consumers	Skin contact	Acute systemic effects	137 mg/kg bw/day
	Workers	Skin contact	Long-term systemic effects	137 mg/kg bw/day
	Workers	Inhalation	Acute systemic effects	20 mg/m3
	Workers	Skin contact	Acute systemic effects	273 mg/kg bw/day
	Consumers	Skin contact	Long-term systemic effects	137 mg/kg bw/day
Zinc	Workers	Skin contact	Long-term systemic effects	83.3 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	5 mg/m3
	Consumers	Skin contact	Long-term systemic effects	83.3 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	2.5 mg/m3
	Consumers	Ingestion	Long-term systemic effects	0.83 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Calcium fluoride	Fresh water	0.9 mg/l
	Sewage treatment plant	51 mg/l
	Soil	11 mg/kg
Copper metal powder	Fresh water	7.8 µg/l
	Marine water	5.2 µg/l
	Sewage treatment plant	230 µg/l
	Fresh water sediment	87 mg/kg
	Marine sediment	676 mg/kg
Zinc	Fresh water	20 µg/l
	Marine water	6.1 µg/l
	Sewage treatment plant	52 µg/l
	Fresh water sediment	117.8 mg/kg
	Marine sediment	56.5 mg/kg
	Soil	35.6 mg/kg



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### 8.2 Exposure controls

#### Engineering measures

Ensure adequate ventilation, especially in confined areas.  
Minimize workplace exposure concentrations.  
Use only in an area equipped with explosion proof exhaust ventilation.

#### Personal protective equipment

Eye protection	:	Wear the following personal protective equipment: Safety glasses
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 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	:	Wear the following personal protective equipment: Flame retardant antistatic protective clothing.
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	:	Self-contained breathing apparatus

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	:	Aerosol containing a dissolved gas
Colour	:	brown
Odour	:	solvent-like
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable

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Flammability (solid, gas) : Extremely flammable aerosol.

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 0.67

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 : Not applicable

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

### 9.2 Other information

Molecular weight : No data available

## 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 : Extremely flammable aerosol.  
Vapours may form explosive mixture with air.  
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.  
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.

### 10.5 Incompatible materials

Materials to avoid : Oxidizing agents

### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

## 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.

#### Components:

##### **Naphtha (petroleum), hydrotreated heavy:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 4,951 mg/m<sup>3</sup>  
Exposure time: 4 h  
Test atmosphere: vapour  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

##### **Copper metal powder:**

Acute oral toxicity : LD50 (Rat): > 2,500 mg/kg  
Method: OECD Test Guideline 423  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.11 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436

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

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toxicity

**Zinc:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.41 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

**N-Tallow Alkyltrimethylenediamine Oleate:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

**Calcium fluoride:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.07 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

**Skin corrosion/irritation**

Not classified based on available information.

**Components:**

**Naphtha (petroleum), hydrotreated heavy:**

Species: Rabbit  
Result: Mild skin irritation

Assessment: Repeated exposure may cause skin dryness or cracking.

**Copper metal powder:**

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

**N-Tallow Alkyltrimethylenediamine Oleate:**

Result: Corrosive after 3 minutes to 1 hour of exposure

**Calcium fluoride:**

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

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

Not classified based on available information.

#### **Components:**

##### **Naphtha (petroleum), hydrotreated heavy:**

Species: Rabbit  
Method: OECD Test Guideline 405  
Result: No eye irritation  
Remarks: Based on data from similar materials

##### **Copper metal powder:**

Species: Rabbit  
Method: OECD Test Guideline 405  
Result: No eye irritation

##### **Zinc:**

Species: Rabbit  
Method: OECD Test Guideline 405  
Result: No eye irritation

##### **N-Tallow Alkyltrimethylenediamine Oleate:**

Result: Irreversible effects on the eye

##### **Calcium fluoride:**

Species: Rabbit  
Method: OECD Test Guideline 405  
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:**

##### **Naphtha (petroleum), hydrotreated heavy:**

Test Type: Maximisation Test  
Exposure routes: Skin contact  
Species: Guinea pig  
Result: negative  
Remarks: Based on data from similar materials

##### **Copper metal powder:**

Test Type: Maximisation Test  
Exposure routes: Skin contact  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: negative

##### **Calcium fluoride:**

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

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Result: negative

### **Germ cell mutagenicity**

Not classified based on available information.

### **Components:**

#### **Naphtha (petroleum), hydrotreated heavy:**

- Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Result: negative
- Germ cell mutagenicity- Assessment : Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

#### **Copper metal powder:**

- 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: Directive 67/548/EEC, Annex V, B.12.  
Result: negative  
Remarks: Based on data from similar materials

#### **Zinc:**

- Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive  
Remarks: Based on data from similar materials
- : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials
- Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

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**Calcium fluoride:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

**Carcinogenicity**

Not classified based on available information.

**Components:**

**Naphtha (petroleum), hydrotreated heavy:**

Species: Rat  
Application Route: inhalation (vapour)  
Exposure time: 105 weeks  
Result: negative  
Remarks: Based on data from similar materials

Carcinogenicity - Assessment : Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

**Calcium fluoride:**

Species: Rat  
Application Route: Ingestion  
Exposure time: 99 weeks  
Result: negative

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**Naphtha (petroleum), hydrotreated heavy:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
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  
Remarks: Based on data from similar materials

**Copper metal powder:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 416  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Ingestion  
Result: negative

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**Zinc:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

**Calcium fluoride:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

**STOT - single exposure**

Not classified based on available information.

**Components:**

**Naphtha (petroleum), hydrotreated heavy:**

Assessment: May cause drowsiness or dizziness.

**STOT - repeated exposure**

Not classified based on available information.

**Components:**

**Copper metal powder:**

Exposure routes: inhalation (dust/mist/fume)

Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

**Calcium fluoride:**

Exposure routes: inhalation (dust/mist/fume)

Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

**Repeated dose toxicity**

**Components:**

**Naphtha (petroleum), hydrotreated heavy:**

Species: Rat

NOAEL: 10,186 mg/m<sup>3</sup>

Application Route: inhalation (vapour)

Exposure time: 13 Weeks



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**Copper metal powder:**

Species: Rat  
NOAEL:  $\geq 2$  mg/m<sup>3</sup>  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 28 Days

**Zinc:**

Species: Rat  
NOAEL: 31 mg/kg  
Application Route: Ingestion  
Exposure time: 90 Days

**Calcium fluoride:**

Species: Rat  
NOAEL: 7 mg/m<sup>3</sup>  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 28 Days

**Aspiration toxicity**

Not classified based on available information.

**Components:**

**Naphtha (petroleum), hydrotreated heavy:**

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:**

**Naphtha (petroleum), hydrotreated heavy:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 30 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 22 - 46 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae : EL50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

NOELR (Pseudokirchneriella subcapitata (green algae)): 1

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mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

**Copper metal powder:**

- Toxicity to fish : LC50 : 8.1 µg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.792 mg/l  
Exposure time: 48 h
- Toxicity to algae : EC50 (Chlorella vulgaris (Fresh water algae)): 0.333 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- M-Factor (Acute aquatic toxicity) : 100
- Toxicity to fish (Chronic toxicity) : NOEC: 1 µg/l  
Species: Oncorhynchus mykiss (rainbow trout)
- M-Factor (Chronic aquatic toxicity) : 100

**Zinc:**

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0.78 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1.83 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae : IC50 (Pseudokirchneriella subcapitata (green algae)): 0.15 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- M-Factor (Acute aquatic toxicity) : 1
- Toxicity to bacteria : EC50 : 5.2 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209
- Toxicity to fish (Chronic toxicity) : NOEC: 0.199 mg/l  
Exposure time: 30 d  
Species: Oncorhynchus mykiss (rainbow trout)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.1 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

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M-Factor (Chronic aquatic toxicity) : 1

### **N-Tallow Alkyltrimethylenediamine Oleate:**

Toxicity to fish : LC50 : > 0.1 - 1 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 0.001 - 0.01 mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae : EC50 : > 0.01 - 0.1 mg/l  
Exposure time: 72 h  
Remarks: Based on data from similar materials

M-Factor (Acute aquatic toxicity) : 100

### **Calcium fluoride:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 108 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 97 - 270 mg/l  
Exposure time: 48 h

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 122 mg/l  
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 4 mg/l  
Exposure time: 21 d  
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 8.9 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

## 12.2 Persistence and degradability

### **Components:**

#### **Naphtha (petroleum), hydrotreated heavy:**

Biodegradability : Result: Readily biodegradable  
Biodegradation: 89 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

#### **N-Tallow Alkyltrimethylenediamine Oleate:**

Biodegradability : Result: rapidly degradable  
Remarks: Based on data from similar materials



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### 12.3 Bioaccumulative potential

**Components:**

**Zinc:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 177

### 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 : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not burn.  
If not otherwise specified: Dispose of as unused product.  
Please ensure aerosol cans are sprayed completely empty (including propellant)

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## SECTION 14: Transport information

### 14.1 UN number

ADN : UN 1950  
ADR : UN 1950  
RID : UN 1950  
IMDG : UN 1950  
IATA : UN 1950

### 14.2 UN proper shipping name

ADN : AEROSOLS  
ADR : AEROSOLS  
RID : AEROSOLS  
IMDG : AEROSOLS  
(Copper metal powder)  
IATA : Aerosols, flammable



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### 14.3 Transport hazard class(es)

**ADN** : 2.1  
**ADR** : 2.1  
**RID** : 2.1  
**IMDG** : 2.1  
**IATA** : 2.1

### 14.4 Packing group

**ADN**  
Packing group : Not assigned by regulation  
Classification Code : 5F  
Labels : 2.1

**ADR**  
Packing group : Not assigned by regulation  
Classification Code : 5F  
Labels : 2.1  
Tunnel restriction code : (D)

**RID**  
Packing group : Not assigned by regulation  
Classification Code : 5F  
Hazard Identification Number : 23  
Labels : 2.1

**IMDG**  
Packing group : Not assigned by regulation  
Labels : 2.1  
EmS Code : F-D, S-U

**IATA (Cargo)**  
Packing instruction (cargo aircraft) : 203  
Packing instruction (LQ) : Y203  
Packing group : Not assigned by regulation  
Labels : Flammable Gas

**IATA (Passenger)**  
Packing instruction (passenger aircraft) : 203  
Packing instruction (LQ) : Y203  
Packing group : Not assigned by regulation  
Labels : Flammable Gas

### 14.5 Environmental hazards

**ADN**  
Environmentally hazardous : yes

**ADR**  
Environmentally hazardous : yes

**RID**  
Environmentally hazardous : yes



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**IMDG**  
 Marine pollutant : yes

**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 III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
P3a	FLAMMABLE AEROSOLS	150 t	500 t
E1	ENVIRONMENTAL HAZARDS	100 t	200 t
34	Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2,500 t	25,000 t
18	Liquefied extremely flammable gases (including LPG) and natural gas	50 t	200 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 Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

KECI : All ingredients listed, exempt or notified.

TCSI : All ingredients listed or exempt.

REACH : All ingredients (pre-)registered or exempt.

TSCA : All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

AICS : All ingredients listed 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).

NZIoC : All ingredients listed or exempt.

### 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 H-Statements

H226 : Flammable liquid and vapour.  
H250 : Catches fire spontaneously if exposed to air.  
H260 : In contact with water releases flammable gases which may ignite spontaneously.  
H304 : May be fatal if swallowed and enters airways.  
H314 : Causes severe skin burns and eye damage.  
H318 : Causes serious eye damage.  
H336 : May cause drowsiness or dizziness.  
H400 : Very toxic to aquatic life.  
H410 : Very toxic to aquatic life with long lasting effects.  
H412 : Harmful to aquatic life with long lasting effects.

#### Full text of other abbreviations

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Aquatic Acute	: Acute aquatic toxicity
Aquatic Chronic	: Chronic aquatic toxicity
Asp. Tox.	: Aspiration hazard
Eye Dam.	: Serious eye damage
Flam. Liq.	: Flammable liquids
Pyr. Sol.	: Pyrophoric solids
Skin Corr.	: Skin corrosion
STOT SE	: Specific target organ toxicity - single exposure
Water-react.	: Substances and mixtures, which in contact with water, emit flammable gases
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
2000/39/EC / TWA	: Limit Value - eight hours
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labeling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Sources of key data used to compile the Safety Data	: Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-
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