



# SAFETY DATA SHEET

## SPECIALTY ELECTRONIC MATERIALS UK LIMITED

Safety Data Sheet according to Regulation (EC) No 1907/2006 - Annex II

**Product name: MOLYKOTE® CU-7439 PLUS SPRAY V1**

**Revision Date: 21.09.2022**

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SPECIALTY ELECTRONIC MATERIALS UK LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

**Product name: MOLYKOTE® CU-7439 PLUS SPRAY V1**

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

**Identified uses:** Lubricant.

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

#### COMPANY IDENTIFICATION

SPECIALTY ELECTRONIC MATERIALS UK  
LIMITED  
KINGS COURT, LONDON ROAD  
STEVENAGE  
England  
SG1 2NG  
UNITED KINGDOM

#### Manufacturer

DuPont Specialty Products GmbH & Co. KG

#### Customer Information Number:

00800-3876-6838

SDSQuestion-EU@dupont.com

### 1.4 EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** +(44)-870-8200418

**Local Emergency Contact:** +(44)-870-8200418

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008:

Aerosols - Category 1 - H222, H229

Specific target organ toxicity - single exposure - Category 3 - H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

### Hazard pictograms



Signal word: **DANGER**

### Hazard statements

- |      |   |
|------|---|
| H222 | Extremely flammable aerosol.                |
| H229 | Pressurised container: May burst if heated. |
| H336 | May cause drowsiness or dizziness.          |

### Precautionary statements

- |             |  |
|-------------|--|
| 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 mist.  |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a              |
| + P312      | POISON CENTER/ doctor if you feel unwell.  |
| P410 + P412 | Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.                  |

**Contains** naphtha (petroleum), hydrotreated heavy

## 2.3 Other hazards

Endocrine disrupting properties (human health):

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Endocrine disrupting properties (environment):

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

PBT and vPvB assessment:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical nature:** Lubricants and lubricant additives

#### 3.2 Mixtures

This product is a mixture.

Identification number	Component	Classification according to Regulation (EU) 1272/2008 (CLP)	specific concentration limit/ M-Factors/ Acute toxicity estimate	%
<b>CASRN</b> 64742-48-9 <b>EC-No.</b> 919-857-5 <b>Index-No.</b> 649-327-00-6 <b>REACH No</b> —	naphtha (petroleum), hydrotreated heavy	Flam. Liq. 3 - H226 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 3 - H412	Oral ATE: > 5,000 mg/kg  Inhalation ATE: > 4,951 mg/m3 (vapour)  Dermal ATE: > 3,160 mg/kg	>= 20.0 - < 25.0 %
<b>CASRN</b> 74-98-6 <b>EC-No.</b> 200-827-9 <b>Index-No.</b> 601-003-00-5 <b>REACH No</b> —	propane	Flam. Gas 1 - H220 Press. Gas Compr. Gas - H280	Inhalation ATE: > 425000 ppm (vapour)	>= 1.0 - < 10.0 %
<b>CASRN</b> 7440-50-8 <b>EC-No.</b> 231-159-6 <b>Index-No.</b> — <b>REACH No</b> —	Copper metal powder	Aquatic Acute 1 - H400 Aquatic Chronic 3 - H412	M-Factor: 1[Acute]  Oral ATE: 500 mg/kg  Inhalation ATE: 0.733 mg/l (dust/mist)  Dermal ATE: > 2,000 mg/kg	>= 2.5 - < 10.0 %
<b>CASRN</b> 68187-67-7 <b>EC-No.</b> 269-119-5 <b>Index-No.</b> — <b>REACH No</b> —	C12-C14-Alkyl amines, isooctyl phosphates	Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1C - H314 Eye Irrit. 1 - H318 Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411	M-Factor: 1[Acute]  Oral ATE: 1,000 mg/kg  Dermal ATE: 2,000 mg/kg	>= 0.25 - < 1.0 %

Substances with a workplace exposure limit

Identification number	Component	Classification according to Regulation (EU) 1272/2008 (CLP)	Specific Concentration Limits/ M-Factors/ Acute Toxicity Estimate	%
<b>CASRN</b> 106-97-8 <b>EC-No.</b> 203-448-7 <b>Index-No.</b> 601-004-00-0 <b>REACH No</b> —	butane	Flam. Gas 1 - H220 Press. Gas Compr. Gas - H280	Inhalation ATE: 658 mg/l (vapour)	>= 40.0 - < 50.0 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

*Note*

naphtha (petroleum), hydrotreated heavy:

The classification as a carcinogen or mutagen need not to apply because the substance contains less than 0.1% w/w benzene (EINECS No 200-753-7). Note P of Annex VI to Regulation (EC) 1272/2008.

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## SECTION 4: FIRST AID MEASURES

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### 4.1 Description of first aid measures

**General advice:**

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility. Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

**Skin contact:** Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** No emergency medical treatment necessary.

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

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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## 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:** Do not use direct water stream.

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

**Hazardous combustion products:** Carbon oxides Metal oxides Nitrogen oxides (NO<sub>x</sub>)

**Unusual Fire and Explosion Hazards:** Flash back possible over considerable distance. 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. Vapours may form explosive mixtures with air.

### 5.3 Advice for firefighters

**Fire Fighting Procedures:** Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.

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.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**6.1 Personal precautions, protective equipment and emergency procedures:** Remove all sources of ignition. Follow safe handling advice and personal protective equipment recommendations.

**6.2 Environmental precautions:** Do not release the product to the aquatic environment above defined regulatory levels. 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 materials for containment and 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. Clean up remaining materials from spill with suitable absorbant. 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. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, 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.

## SECTION 7: HANDLING AND STORAGE

**7.1 Precautions for safe handling:** Do not breathe vapours or spray mist. 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. Handle in accordance with good industrial hygiene and safety practice. Do not spray on an open flame or other ignition source. Use only with adequate ventilation. Use only in an area equipped with explosion proof exhaust ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

**7.2 Conditions for safe storage, including any incompatibilities:** 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.

Do not store with the following product types: Self-reactive substances and mixtures. Organic peroxides. Flammable solids. Pyrophoric liquids. Pyrophoric solids. Self-heating substances and mixtures. Substances and mixtures, which in contact with water, emit flammable gases. Explosives. Oxidizing agents.

Unsuitable materials for containers: None known.

**7.3 Specific end use(s):** Information on specific end use(s) of this product may be provided in a technical data sheet/annex to the SDS (if available).

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
propane	ACGIH		See Further information
	Further information: See Appendix F: Minimal Oxygen Content; EX: Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV® could approach 10% of the lower explosive limit.; asphyxia: Asphyxia; D: Simple asphyxiant; see discussion covering Minimal Oxygen Content found in the 'Definitions and Notations' section following the NIC tables		
Copper metal powder	ACGIH	TWA Dust and mist	1 mg/m <sup>3</sup> , Copper
	ACGIH	TWA Fumes	0.2 mg/m <sup>3</sup> , Copper
	GB EH40	TWA	1 mg/m <sup>3</sup> , Copper
	GB EH40	STEL	2 mg/m <sup>3</sup> , Copper
	GB EH40	TWA	0.2 mg/m <sup>3</sup> , Copper
	Further information: 48: The word 'fume' is often used to include gases and vapours. This is not the case for exposure limits where 'fume' should normally be applied to solid particles generated by chemical reactions or condensed from the gaseous state, usually after volatilisation from melted substances. The generation of fume is often accompanied by a chemical reaction such as oxidation or thermal breakdown.; 2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used		
	GB EH40	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/m3 , Copper
butane	ACGIH	STEL	1,000 ppm
	Further information: EX: Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV® could approach 10% of the lower explosive limit.; CNS impair: Central Nervous System impairment		
	GB EH40	STEL	1,810 mg/m3 750 ppm
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.; Carcinogenic only applies if butane contains more than 0.1% of buta-1,3-diene		
	GB EH40	TWA	1,450 mg/m3 600 ppm
	Further information: Carc: Capable of causing cancer and/or heritable genetic damage.; Carcinogenic only applies if butane contains more than 0.1% of buta-1,3-diene		

**Derived No Effect Level**

Copper metal powder

**Workers**

<i>Acute systemic effects</i>		<i>Acute local effects</i>		<i>Long-term systemic effects</i>		<i>Long-term local effects</i>	
Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation	Dermal	Inhalation
273 mg/kg bw/day	20 mg/m3	n.a.	n.a.	137 mg/kg bw/day	n.a.	n.a.	n.a.

**Consumers**

<i>Acute systemic effects</i>			<i>Acute local effects</i>		<i>Long-term systemic effects</i>			<i>Long-term local effects</i>	
Dermal	Inhalation	Oral	Dermal	Inhalation	Dermal	Inhalation	Oral	Dermal	Inhalation
137 mg/kg bw/day	20 mg/m3	n.a.	n.a.	n.a.	137 mg/kg bw/day	n.a.	0.041 mg/kg bw/day	n.a.	n.a.

**Predicted No Effect Concentration**

Copper metal powder

Compartment	PNEC
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
Soil	65 mg/kg

**8.2 Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

**Skin protection**

**Hand protection:** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.

**Environmental exposure controls**

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

<b>Physical state</b>	aerosol
	<b>Form</b> Aerosol containing a dissolved gas
<b>Colour</b>	bronze
<b>Odour</b>	solvent-like
<b>Melting point/freezing point</b>	No data available
<b>Boiling point or initial boiling point and boiling range</b>	No data available
<b>Flammability</b>	<b>Gases/Solids</b> Extremely flammable aerosol.
	<b>Liquids</b> No data available
<b>Lower explosion limit and upper explosion limit / flammability limit</b>	No data available
<b>Flash point</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	<b>Thermal decomposition</b> No data available



<b>pH</b>	No data available
<b>Viscosity</b>	<b>Viscosity, kinematic</b> No data available
<b>Solubility(ies)</b>	<b>Water solubility</b> Not applicable
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Vapour pressure</b>	Not applicable
<b>Density and / or relative density</b>	<b>Relative density</b> 0.66
<b>Relative vapour density</b>	No data available
<b>Particle characteristics</b>	Not applicable

## 9.2 Other information

<b>Oxidizing properties</b>	The substance or mixture is not classified as oxidizing.
<b>Aerosols</b>	Extremely flammable aerosol.
<b>Evaporation rate</b>	Not applicable
<b>Molecular weight</b>	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## SECTION 10: STABILITY AND REACTIVITY

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**10.1 Reactivity:** Not classified as a reactivity hazard.

**10.2 Chemical stability:** Stable under normal conditions.

**10.3 Possibility of hazardous reactions:** Can react with strong oxidizing agents. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure. Vapours may form explosive mixture with air. Extremely flammable aerosol.

**10.4 Conditions to avoid:** None known.

**10.5 Incompatible materials:** Oxidizing agents

**10.6 Hazardous decomposition products:** 1-Butene.

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## **SECTION 11: TOXICOLOGICAL INFORMATION**

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*Toxicological information appears in this section when such data is available.*

### **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

#### **Acute toxicity**

##### **Acute toxicity (Acute oral toxicity)**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

##### **Acute toxicity (Acute dermal toxicity)**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

##### **Acute toxicity (Acute inhalation toxicity)**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

#### **Skin corrosion/irritation**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

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

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

#### **Respiratory or skin sensitisation**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Germ cell mutagenicity**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Carcinogenicity**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Reproductive toxicity**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Toxicity to reproduction assessment :

Product test data not available. Refer to component data.

Assessment Teratogenicity:

Product test data not available. Refer to component data.

**STOT - single exposure**

Specific target organ toxicity - single exposure, Category 3

H336: May cause drowsiness or dizziness.

Classification procedure: Calculation method

Product test data not available. Refer to component data.

**STOT - repeated exposure**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**Aspiration Hazard**

Not classified

Not classified due to lack of data. / Not classified due to data which are conclusive although insufficient for classification.

Product test data not available. Refer to component data.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**naphtha (petroleum), hydrotreated heavy**

**Acute toxicity (Acute oral toxicity)**

Based on data from similar materials LD50, Rat, > 5,000 mg/kg

**Acute toxicity (Acute dermal toxicity)**

Based on data from similar materials LD50, Rabbit, > 3,160 mg/kg

**Acute toxicity (Acute inhalation toxicity)**

Based on data from similar materials LC50, Rat, 4 Hour, vapour, > 4,951 mg/m3

**Skin corrosion/irritation**

Brief contact may cause slight skin irritation with local redness.

May cause drying and flaking of the skin.

**Serious eye damage/eye irritation**

Based on data from similar materials

May cause slight temporary eye irritation.

Corneal injury is unlikely.

**Respiratory or skin sensitisation**

For skin sensitization:

For similar material(s):

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Germ cell mutagenicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Carcinogenicity**

No relevant data found.

**Reproductive toxicity**

Toxicity to reproduction assessment :

No relevant data found.

Assessment Teratogenicity:

Did not cause birth defects or any other fetal effects in laboratory animals.

**STOT - single exposure**

May cause drowsiness or dizziness.

**STOT - repeated exposure**

Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

**Aspiration Hazard**

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.

**propane**

**Acute toxicity (Acute oral toxicity)**

Single dose oral LD50 has not been determined.

**Acute toxicity (Acute dermal toxicity)**

The dermal LD50 has not been determined.

**Acute toxicity (Acute inhalation toxicity)**

LC50, Rat, male and female, 4 Hour, vapour, > 425000 ppm

**Skin corrosion/irritation**

No hazard from gas.

Liquid may cause frostbite upon skin contact.

Effects may be delayed.

**Serious eye damage/eye irritation**

Essentially nonirritating to eyes.

Liquid may cause frostbite.

**Respiratory or skin sensitisation**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Germ cell mutagenicity**

In vitro genetic toxicity studies were negative.

**Carcinogenicity**

No relevant data found.

**Reproductive toxicity**

Toxicity to reproduction assessment :

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Assessment Teratogenicity:

Screening studies suggest that this material does not affect fetal development.

**STOT - single exposure**

Available data are inadequate to determine single exposure specific target organ toxicity.

**STOT - repeated exposure**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**Copper metal powder**

**Acute toxicity (Acute oral toxicity)**

Acute toxicity estimate, 500 mg/kg Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LD50, Rat, > 2,500 mg/kg OECD Test Guideline 423 No deaths occurred at this concentration.

**Acute toxicity (Acute dermal toxicity)**

LD50, Rat, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

**Acute toxicity (Acute inhalation toxicity)**

Acute toxicity estimate, dust/mist, 0.733 mg/l Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LC50, Rat, 4 Hour, dust/mist, > 5.11 mg/l OECD Test Guideline 436 No deaths occurred at this concentration.

**Skin corrosion/irritation**

Brief contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**

May cause slight eye irritation.

May cause slight corneal injury.

**Respiratory or skin sensitisation**

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Germ cell mutagenicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Carcinogenicity**

No relevant data found.

**Reproductive toxicity**

Toxicity to reproduction assessment :

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Assessment Teratogenicity:

Did not cause birth defects or any other fetal effects in laboratory animals.

**STOT - single exposure**

The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT - repeated exposure**

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Aspiration Hazard**

No aspiration toxicity classification

**C12-C14-Alkyl amines, isooctyl phosphates**

**Acute toxicity (Acute oral toxicity)**

LD50, Rat, 1,000 mg/kg

**Acute toxicity (Acute dermal toxicity)**

Information given is based on data obtained from similar substances. LD50, Rabbit, 2,000 mg/kg OECD Test Guideline 402

**Acute toxicity (Acute inhalation toxicity)**

The LC50 has not been determined.

**Skin corrosion/irritation**

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

**Serious eye damage/eye irritation**

May cause severe eye irritation.

**Respiratory or skin sensitisation**

Did not cause allergic skin reactions when tested in guinea pigs.

**STOT - single exposure**

The substance or mixture is not classified as specific target organ toxicant, single exposure.

**butane****Acute toxicity (Acute oral toxicity)**

Single dose oral LD50 has not been determined.

**Acute toxicity (Acute dermal toxicity)**

The dermal LD50 has not been determined.

**Acute toxicity (Acute inhalation toxicity)**

LC50, Rat, 4 Hour, vapour, 658 mg/l

**Skin corrosion/irritation**

No hazard from gas.

**Serious eye damage/eye irritation**

No hazard from gas.

**Respiratory or skin sensitisation**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Germ cell mutagenicity**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Carcinogenicity**

No relevant data found.

**Reproductive toxicity**

Toxicity to reproduction assessment :

No relevant data found.

Assessment Teratogenicity:

No relevant data found.

**STOT - single exposure**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**STOT - repeated exposure**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**11.2. Information on other hazards****Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Further information**

No data available

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**SECTION 12: ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

**12.1 Toxicity****naphtha (petroleum), hydrotreated heavy****Acute toxicity to fish**

Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).

Based on data from similar materials

LL50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 10 - 30 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**

Based on data from similar materials

EL50, Daphnia magna (Water flea), 48 Hour, > 22 - 46 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

Based on data from similar materials

EL50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201

Based on data from similar materials

NOELR, Pseudokirchneriella subcapitata (green algae), 72 Hour, 1 mg/l, OECD Test Guideline 201



**propane****Acute toxicity to fish**

Material is not classified as dangerous to aquatic organisms.

**Copper metal powder****Acute toxicity to fish**

Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, 0.792 mg/l

**Acute toxicity to algae/aquatic plants**

EC50, Chlorella vulgaris (Fresh water algae), 72 Hour, 0.333 mg/l, OECD Test Guideline 201

**C12-C14-Alkyl amines, isooctyl phosphates****Acute toxicity to aquatic invertebrates**

Information given is based on data obtained from similar substances.

EC50, Daphnia magna (Water flea), 48 Hour, 17 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**

Information given is based on data obtained from similar substances.

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 0.8 mg/l, OECD Test Guideline 201

Information given is based on data obtained from similar substances.

NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, 0.32 mg/l, OECD Test Guideline 201

**butane****Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

**12.2 Persistence and degradability****naphtha (petroleum), hydrotreated heavy**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Based on data from similar materials 10-day Window: Pass

**Biodegradation:** 89 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F

**propane**

**Biodegradability:** No relevant data found.

**Copper metal powder**

**Biodegradability:** Biodegradability is not applicable to inorganic substances.

**C12-C14-Alkyl amines, isooctyl phosphates**

**Biodegradability:** Not readily biodegradable.

**Biodegradation:** 35 %

Exposure time: 28 d

**butane**

**Biodegradability:** Material is expected to be readily biodegradable.

**12.3 Bioaccumulative potential**

**naphtha (petroleum), hydrotreated heavy**

**Bioaccumulation:** No relevant data found.

**propane**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 2.36 Measured

**Copper metal powder**

**Bioaccumulation:** No relevant data found.

**butane**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 2.89 Measured

**12.4 Mobility in soil**

**naphtha (petroleum), hydrotreated heavy**

No relevant data found.

**propane**

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** 24 - 460 Estimated.

**Copper metal powder**

No relevant data found.

**butane**

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient (Koc):** 44 - 900 Estimated.

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**naphtha (petroleum), hydrotreated heavy**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**propane**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**Copper metal powder**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**C12-C14-Alkyl amines, isooctyl phosphates**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**butane**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**12.6 Endocrine disrupting properties**

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**12.7 Other adverse effects****naphtha (petroleum), hydrotreated heavy**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**propane**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**Copper metal powder**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

**C12-C14-Alkyl amines, isooctyl phosphates**

No relevant data found.

**butane**

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**13.1 Waste treatment methods**

Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

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**SECTION 14: TRANSPORT INFORMATION**

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**Classification for ROAD and Rail transport (ADR/RID):**

- |      |                            |          |
|------|----------------------------|----------|
| 14.1 | UN number or ID number     | UN 1950  |
| 14.2 | UN proper shipping name    | AEROSOLS |
| 14.3 | Transport hazard class(es) | 2.1      |

- 14.4 Packing group Not applicable  
14.5 Environmental hazards Copper metal powder  
14.6 Special precautions for user No data available.

**Classification for SEA transport (IMO-IMDG):**

- 14.1 UN number or ID number UN 1950  
14.2 UN proper shipping name AEROSOLS  
14.3 Transport hazard class(es) 2.1  
14.4 Packing group Not applicable  
14.5 Environmental hazards Copper metal powder  
14.6 Special precautions for user EmS: F-D, S-U  
14.7 Maritime transport in bulk according to IMO instruments Consult IMO regulations before transporting ocean bulk instruments

**Classification for AIR transport (IATA/ICAO):**

- 14.1 UN number or ID number UN 1950  
14.2 UN proper shipping name Aerosols, flammable  
14.3 Transport hazard class(es) 2.1  
14.4 Packing group Not applicable  
14.5 Environmental hazards Not applicable  
14.6 Special precautions for user No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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**SECTION 15: REGULATORY INFORMATION**

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**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****REACH Regulation (EC) No 1907/2006**

This product contains only components that have been either registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

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

Listed in Regulation: Liquefied flammable gases (including LPG) and natural gas

Number in Regulation: 18

50 t

200 t

Listed in Regulation: FLAMMABLE AEROSOLS

Number in Regulation: P3a

150 t

500 t

Listed in Regulation: 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)

Number in Regulation: 34

2,500 t

25,000 t

**Further information**

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

**15.2 Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture.

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**SECTION 16: OTHER INFORMATION**

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**Full text of H-Statements referred to under sections 2 and 3.**

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H226	Flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
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.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008**

Aerosol - 1 - H222 - Based on product data or assessment

STOT SE - 3 - H336 - Calculation method

**Revision**

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
GB EH40	UK. EH40 WEL - Workplace Exposure Limits
STEL	Short-term exposure limit (15-minute reference period)
TWA	Long-term exposure limit (8-hour TWA reference period)
Acute Tox.	Acute toxicity
Aquatic Acute	Short-term (acute) aquatic hazard
Aquatic Chronic	Long-term (chronic) aquatic hazard
Asp. Tox.	Aspiration hazard
Eye Irrit.	Eye irritation
Flam. Gas	Flammable gases
Flam. Liq.	Flammable liquids
Press. Gas	Gases under pressure
Skin Corr.	Skin corrosion
STOT SE	Specific target organ toxicity - single exposure

**Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling 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; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA -

Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

SPECIALTY ELECTRONIC MATERIALS UK LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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