

Page 1 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

KUPFER-SPRAY 250 mL

Art.: 1520

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

Relevant identified uses of the substance or mixture:

Lubricant

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

GB

LIQUI MOLY GmbH, Jerg-Wieland-Str. 4, 89081 Ulm-Lehr, Germany
Phone: (+49) 0731-1420-0, Fax: (+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Asp. Tox.	1	H304-May be fatal if swallowed and enters airways.
STOT SE	3	H336-May cause drowsiness or dizziness.
Aquatic Acute	1	H400-Very toxic to aquatic life.
Aquatic Chronic	2	H411-Toxic to aquatic life with long lasting effects.
Aerosol	1	H222-Extremely flammable aerosol.
Aerosol	1	H229-Pressurised container: May burst if heated.

2.2 Label elements

Labeling according to Regulation (EC) 1272/2008 (CLP)

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520



Danger

H336-May cause drowsiness or dizziness. H410-Very toxic to aquatic life with long lasting effects. H222-Extremely flammable aerosol. H229-Pressurised container: May burst if heated.

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children.

P210-Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211-Do not spray on an open flame or other ignition source. P251-Do not pierce or burn, even after use. P261-Avoid breathing vapours or spray. P273-Avoid release to the environment.

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

P405-Store locked up. P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

P501-Dispose of contents/container to special waste collection point.

EUH066-Repeated exposure may cause skin dryness or cracking.

Without adequate ventilation, formation of explosive mixtures may be possible.

Pentane

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006.

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006.

SECTION 3: Composition/information on ingredients

Aerosol

3.1 Substance

n.a.

3.2 Mixture

Pentane	Substance for which an EU exposure limit value applies.
Registration number (REACH)	--
Index	601-006-00-1
EINECS, ELINCS, NLP	203-692-4
CAS	109-66-0
content %	30-50
Classification according to Regulation (EC) 1272/2008 (CLP)	Aquatic Chronic 2, H411 Asp. Tox. 1, H304 STOT SE 3, H336 Flam. Liq. 2, H225

Dimethyl ether	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119472128-37-XXXX
Index	603-019-00-8
EINECS, ELINCS, NLP	204-065-8
CAS	115-10-6
content %	20-40
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Gas 1, H220

Page 3 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 21.08.2015 / 0008
 Replacing version dated / version: 03.08.2015 / 0007
 Valid from: 21.08.2015
 PDF print date: 23.08.2015
 KUPFER-SPRAY 250 mL
 Art.: 1520

Copper	
Registration number (REACH)	01-2119480154-42-XXXX
Index	---
EINECS, ELINCS, NLP	231-159-6
CAS	7440-50-8
content %	2,5-<10
Classification according to Regulation (EC) 1272/2008 (CLP)	Aquatic Acute 1, H400 (M=10) Aquatic Chronic 2, H411 Acute Tox. 4, H302

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
 The substances named in this section are given with their actual, appropriate classification!
 For substances that are listed in appendix VI, table 3.1/3.2 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation

Remove person from danger area.
 Supply person with fresh air and consult doctor according to symptoms.

Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Eye contact

Wash thoroughly for several minutes using copious water. Seek medical help if necessary.
 Keep Data Sheet available.

Ingestion

Call doctor immediately - have Data Sheet available.
 Do not induce vomiting.
 Danger of aspiration

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

The following may occur:

Irritation of the respiratory tract
 Coughing
 Headaches
 Effects/damages the central nervous system
 With long-term contact:
 Dermatitis (skin inflammation)
 Product removes fat.

Other dangerous properties cannot be ruled out.

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water jet spray
 CO₂
 Extinction powder
 Foam

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Page 4 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

Oxides of carbon
Metal oxides
Toxic pyrolysis products.
Danger of explosion by prolonged heating.
Explosive vapour/air mixture
In case of spreading near the ground, flashback to distance sources of ignition is possible.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary.
Cool container at risk with water.
Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove possible causes of ignition - do not smoke.
Ensure sufficient supply of air.
Avoid inhalation, and contact with eyes or skin.

6.2 Environmental precautions

Prevent from entering drainage system.
Prevent surface and ground-water infiltration, as well as ground penetration.

6.3 Methods and material for containment and cleaning up

If spray or gas escapes, ensure ample fresh air is available.
Active substance:
Soak up with absorbent material (e.g. universal binding agent) and dispose of according to Section 13.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
Keep away from sources of ignition - Do not smoke.
Take measures against electrostatic charging, if appropriate.
Do not use on hot surfaces.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Observe special regulations for aerosols!
Do not store with oxidizing agents.
Keep protected from direct sunlight and temperatures over 50°C.
Store in a well ventilated place.
Observe special storage conditions (in Germany, e.g., in accordance with the regulations in the "Betriebssicherheitsverordnung").

7.3 Specific end use(s)

No information available at present.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revision date / version: 21.08.2015 / 0008

Replacing version dated / version: 03.08.2015 / 0007

Valid from: 21.08.2015

PDF print date: 23.08.2015

KUPFER-SPRAY 250 mL

Art.: 1520

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

(GB) Chemical Name	Pentane	Content %:30-50
WEL-TWA: 600 ppm (1800 mg/m ³) (WEL), 1000 ppm (3000 mg/m ³) (EU)	WEL-STEL: ---	---
Monitoring procedures:	<ul style="list-style-type: none"> - Compur - KITA-113 SB(C) (549 368) - Draeger - Pentane 100/a (67 24 701) - DFG (D) (Lösungsmittelgemische Meth. Nr. 1), DFG (E) (Solvent mixtures 1) - 1998, 2002 	
BMGV: ---	Other information: ---	
(GB) Chemical Name	Dimethyl ether	Content %:20-40
WEL-TWA: 400 ppm (766 mg/m ³) (WEL), 1000 ppm (1920 mg/m ³) (EU)	WEL-STEL: 500 ppm (958 mg/m ³) (WEL)	---
Monitoring procedures:	- Compur - KITA-123 S (549 129)	
BMGV: ---	Other information: ---	
(GB) Chemical Name	Copper	Content %:2,5-<10
WEL-TWA: 1 mg/m ³ (dusts and mists, as Cu)	WEL-STEL: 2 mg/m ³ (dusts and mists, as Cu)	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	
(GB) Chemical Name	Oil mist, mineral	Content %:
WEL-TWA: 5 mg/m ³ (ACGIH)	WEL-STEL: 10 mg/m ³ (ACGIH)	---
Monitoring procedures:	<ul style="list-style-type: none"> - Draeger - Oil 10/a-P (67 28 371) - Draeger - Oil Mist 1/a (67 33 031) 	
BMGV: ---	Other information: ---	
(GB) Chemical Name	Copper, fume	Content %:
WEL-TWA: 0,2 mg/m ³	WEL-STEL: ---	---
Monitoring procedures:	<ul style="list-style-type: none"> ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2000(Part 1), 2001(Part 2), 2004 (Part 3) - EU project BC/CEN/ENTR/000/2002-16 card 84-1 (2004) - MDHS 91 (Metals and metalloids in workplace air by X-ray fluorescence spectrometry) - 1998 - EU project BC/CEN/ENTR/000/2002-16 card 84-2 (2004) - NIOSH 7029 (Copper (dust and fume)) - 1994 - NIOSH 7300 (Elements by ICP (nitric/perchloric ashing)) - 2003 - NIOSH 7301 (Elements by ICP (aqua regia ashing)) - 2003 - NIOSH 7303 (Elements by ICP (Hot block HCl/HNO₃ digestion)) - 2003 OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - EU project BC/CEN/ENTR/000/2002-16 card 84-10 (2004) - OSHA ID-125G (Metal and metalloid particulates in workplace atmospheres (ICP)) - 2002 - OSHA ID-206 (ICP analysis of metal/metalloid particulates from solder operations) - 1991 	
BMGV: ---	Other information: ---	
(GB) Chemical Name	Butane	Content %:
WEL-TWA: 600 ppm (1450 mg/m ³)	WEL-STEL: 750 ppm (1810 mg/m ³)	---
Monitoring procedures:	- Compur - KITA-221 SA (549 459)	
BMGV: ---	Other information: ---	
(GB) Chemical Name	Baseoil - unspecified	Content %:
WEL-TWA: 300 mg/m ³ (AGW)	WEL-STEL: 2(II) (AGW)	---
Monitoring procedures:	<ul style="list-style-type: none"> - Draeger - Hydrocarbons 2/a (81 03 581) - Draeger - Hydrocarbons 0,1%/c (81 03 571) - Compur - KITA-187 S (551 174) 	
BMGV: ---	Other information: ---	
(GB) Chemical Name	Isobutane	Content %:
WEL-TWA: 1000 ppm (ACGIH)	WEL-STEL: ---	---

GB

Page 6 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 21.08.2015 / 0008
 Replacing version dated / version: 03.08.2015 / 0007
 Valid from: 21.08.2015
 PDF print date: 23.08.2015
 KUPFER-SPRAY 250 mL
 Art.: 1520

Monitoring procedures:	-	Compur - KITA-113 SB(C) (549 368)
BMGV: ---		Other information: ---

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
 ** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

Dimethyl ether						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	1894	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	471	mg/m3	
	Environment - freshwater		PNEC	0,155	mg/l	
	Environment - sediment, freshwater		PNEC	0,681	mg/kg	
	Environment - soil		PNEC	0,045	mg/kg	
	Environment - sewage treatment plant		PNEC	160	mg/l	
	Environment - marine		PNEC	0,016	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	1,549	mg/l	
	Environment - sediment, marine		PNEC	0,069	mg/kg	

Copper						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	7,8	µg/l	
	Environment - marine		PNEC	5,2	µg/l	
	Environment - sediment, freshwater		PNEC	87	mg/kg dry weight	
	Environment - sediment, marine		PNEC	676	mg/kg dry weight	
	Environment - soil		PNEC	65,5	mg/kg dry weight	

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
 If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
 Applies only if maximum permissible exposure values are listed here.

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.
 Wash hands before breaks and at end of work.
 Keep away from food, drink and animal feedingstuffs.
 Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
 Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:

Page 7 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 21.08.2015 / 0008
 Replacing version dated / version: 03.08.2015 / 0007
 Valid from: 21.08.2015
 PDF print date: 23.08.2015
 KUPFER-SPRAY 250 mL
 Art.: 1520

Solvent resistant protective gloves (EN 374).

If applicable

Protective gloves in butyl rubber (EN 374).

Minimum layer thickness in mm:

0,8

Permeation time (penetration time) in minutes:

> 120

Protective nitrile gloves (EN 374)

Minimum layer thickness in mm:

0,33

Permeation time (penetration time) in minutes:

480

Protective hand cream recommended.

The breakthrough times determined in accordance with EN 374 Part 3 were not obtained under practical conditions.

The recommended maximum wearing time is 50% of breakthrough time.

Skin protection - Other:

Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:

Normally not necessary.

If OES or MEL is exceeded.

Filter A P 3 (EN 14387), code colour brown, white

At high concentrations:

Respiratory protection appliance (insulation device) (e.g. EN 137 or EN 138)

Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:

Not applicable

Additional information on hand protection - No tests have been performed.

In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.

Selection of materials derived from glove manufacturer's indications.

Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.

Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.

In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.

The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Aerosol, Substance: Liquid
Colour:	Not determined
Odour:	Characteristic
Odour threshold:	Not determined
pH-value:	n.a.
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	n.a.
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	250-350 kPa
Vapour density (air = 1):	Not determined
Density:	0,67 g/ml (20°C)
Bulk density:	n.a.
Solubility(ies):	Not determined
Water solubility:	Insoluble

Page 8 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	n.a.
Explosive properties:	Product is not explosive. Possible build up of explosive/highly flammable vapour/air mixture.
Oxidising properties:	No

9.2 Other information

Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	Not determined

SECTION 10: Stability and reactivity

10.1 Reactivity

The product has not been tested.

10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

Hazardous reactions will not occur during storage and handling under normal conditions.

10.4 Conditions to avoid

Pressure increase will result in danger of bursting.

Heating, open flame, ignition sources

10.5 Incompatible materials

Avoid contact with oxidizing agents.

10.6 Hazardous decomposition products

No decomposition when used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Possibly more information on health effects, see Section 2.1 (classification).

KUPFER-SPRAY 250 mL

Art.: 1520

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Pentane

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>16000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	>100	mg/l/4h	Rat		

Page 9 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

Skin corrosion/irritation:						Mild irritant, Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:						Mild irritant
Respiratory or skin sensitisation:						Not sensitising
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						Yes
Symptoms:						drowsiness, vomiting, cramps, drowsiness, mucous membrane irritation

Dimethyl ether						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	164	mg/l/4h	Rat		
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:					OECD 477 (Genetic Toxicology - Sex-Linked Recessive Lethal Test in Drosophila melanogaster)	Negative
Carcinogenicity:						Negative
Reproductive toxicity:						Negative
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAEC	47106		Rat	OECD 452 (Chronic Toxicity Studies)	Negative(2 a)
Symptoms:						unconsciousness, headaches, mucous membrane irritation, dizziness, nausea and vomiting.

Copper						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>300	mg/kg	Rat		

Butane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Symptoms:						ataxia, breathing difficulties, drowsiness, unconsciousness, frostbite, disturbed heart rhythm, headaches, cramps, intoxication, dizziness, nausea and vomiting.

Baseoil - unspecified						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant

Page 10 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

Respiratory or skin sensitisation:						Not sensitising
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Isobutane						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Serious eye damage/irritation:				Rabbit		Not irritant
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Symptoms:						unconsciousness, frostbite, headaches, cramps, dizziness, nausea and vomiting.

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

KUPFER-SPRAY 250 mL Art.: 1520							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:							n.d.a.
Toxicity to daphnia:							n.d.a.
Toxicity to algae:							n.d.a.
Persistence and degradability:							n.d.a.
Bioaccumulative potential:							n.d.a.
Mobility in soil:							n.d.a.
Results of PBT and vPvB assessment							n.d.a.
Other adverse effects:							n.d.a.
Other information:							According to the recipe, contains no AOX.

Pentane							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:	LC50	96h	9,87	mg/l	Oncorhynchus mykiss		
Toxicity to fish:	LC50	96h	9,87	mg/l	Salmo gairdneri		
Toxicity to fish:	LC50	96h	9,99	mg/l	Lepomis macrochirus		
Toxicity to daphnia:	EC50	48h	9,74	mg/l	Daphnia magna		
Persistence and degradability:		8d	70	%			
Bioaccumulative potential:	Log Pow		3,39				calculated value

Dimethyl ether							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:	LC50	96h	>4000	mg/l	Poecilia reticulata		
Toxicity to fish:	LC50	96h	2695	mg/l	Pimephales promelas		
Toxicity to fish:	LC50	96h	3082	mg/l	Salmo gairdneri		
Toxicity to daphnia:	EC50	48h	>4000	mg/l	Daphnia magna		
Toxicity to algae:	EC0	96h	154,9	mg/l	Chlorella vulgaris	QSAR	
Persistence and degradability:		28d	5	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	Not readily biodegradable

Page 11 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

Bioaccumulative potential:	Log Pow		-0,07				Bioaccumulation is unlikely (LogPow < 1). 25°C (pH 7)
Mobility in soil:	H (Henry)		518,6	Pa*m3/mol			No adsorption in soil.
Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC10		>1600	mg/l	Pseudomonas putida		
Water solubility:			45,60	mg/l			25°C

Copper							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to fish:	LC50		0,0087	mg/l	Pimephales promelas		
Toxicity to daphnia:	EC50	48h	0,03	mg/l	Daphnia magna		
Toxicity to daphnia:	NOEC/NO EL	24h	0,004	mg/l	Daphnia magna		
Toxicity to algae:	EC50	72h	0,0426 -0,053 5	mg/l	Pseudokirchneriella subcapitata		

Butane							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Bioaccumulative potential:	Log Pow		2,98				A notable biological accumulation potential is not to be expected (LogPow 1-3).
Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

SECTION 13: Disposal considerations

13.1 Waste treatment methods

For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.

Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

16 05 04 gases in pressure containers (including halons) containing hazardous substances

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

Approved rubbish dump for special refuse

Take full aerosol cans to problem waste collection.

Take emptied aerosol cans to valuable material collection.

For contaminated packing material

Pay attention to local and national official regulations.

Recommendation:

Do not perforate, cut up or weld uncleaned container.

SECTION 14: Transport information

General statements

UN number:

1950

Transport by road/by rail (ADR/RID)

UN proper shipping name:

UN 1950 AEROSOLS

Transport hazard class(es):

2.1

Packing group:

-



Page 12 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 21.08.2015 / 0008
 Replacing version dated / version: 03.08.2015 / 0007
 Valid from: 21.08.2015
 PDF print date: 23.08.2015
 KUPFER-SPRAY 250 mL
 Art.: 1520

Classification code: 5F
 LQ (ADR 2015): 1 L
 Environmental hazards: environmentally hazardous
 Tunnel restriction code: D

Transport by sea (IMDG-code)

UN proper shipping name:
 AEROSOLS (PENTANES)
 Transport hazard class(es): 2.1
 Packing group: -
 EmS: F-D, S-U
 Marine Pollutant: Yes
 Environmental hazards: environmentally hazardous



Transport by air (IATA)

UN proper shipping name:
 Aerosols, flammable
 Transport hazard class(es): 2.1
 Packing group: -
 Environmental hazards: Not applicable



Special precautions for user

Persons employed in transporting dangerous goods must be trained.
 All persons involved in transporting must observe safety regulations.
 Precautions must be taken to prevent damage.

Transport in bulk according to Annex II of MARPOL and the IBC Code

Freighted as packaged goods rather than in bulk, therefore not applicable.
 Minimum amount regulations have not been taken into account.
 Danger code and packing code on request.
 Comply with special provisions.

SECTION 15: Regulatory information

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

For classification and labelling see Section 2.

Observe restrictions:

Comply with trade association/occupational health regulations.

Observe youth employment law (German regulation).

Directive 2010/75/EU (VOC): < 87,5 %

Directive 2010/75/EU (VOC): < 586 g/l

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections:

1 - 16

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

Employee training in handling dangerous goods is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Asp. Tox. 1, H304	Classification according to calculation procedure.
STOT SE 3, H336	Classification according to calculation procedure.
Aquatic Acute 1, H400	Classification according to calculation procedure.
Aquatic Chronic 2, H411	Classification according to calculation procedure.
Aerosol 1, H222	Classification according to calculation procedure.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

Aerosol 1, H229

Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H336 May cause drowsiness or dizziness.

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

H220 Extremely flammable gas.

Asp. Tox. — Aspiration hazard

STOT SE — Specific target organ toxicity - single exposure - narcotic effects

Aquatic Acute — Hazardous to the aquatic environment - acute

Aquatic Chronic — Hazardous to the aquatic environment - chronic

Aerosol — Aerosols

Flam. Liq. — Flammable liquid

Flam. Gas — Flammable gases (including chemically unstable gases)

Acute Tox. — Acute toxicity - oral

Any abbreviations and acronyms used in this document:

AC Article Categories

acc., acc. to according, according to

ACGIH American Conference of Governmental Industrial Hygienists

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOEL Acceptable Operator Exposure Level

AOX Adsorbable organic halogen compounds

approx. approximately

Art., Art. no. Article number

ATE Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP)

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor

BGV Berufsgenossenschaftliche Vorschrift (= Accident Prevention Regulation)

BHT Butylhydroxytoluol (= 2,6-Di-*t*-butyl-4-methyl-phenol)

BMGV Biological monitoring guidance value (EH40, UK)

BOD Biochemical oxygen demand

BSEF Bromine Science and Environmental Forum

bw body weight

CAS Chemical Abstracts Service

CEC Coordinating European Council for the Development of Performance Tests for Fuels, Lubricants and Other Fluids

CESIO Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques

CIPAC Collaborative International Pesticides Analytical Council

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

COD Chemical oxygen demand

CTFA Cosmetic, Toiletry, and Fragrance Association

DMEL Derived Minimum Effect Level

DNEL Derived No Effect Level

DOC Dissolved organic carbon

DT50 Dwell Time - 50% reduction of start concentration

DVS Deutscher Verband für Schweißen und verwandte Verfahren e.V. (= German Association for Welding and Allied Processes)

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EC European Community

ECHA European Chemicals Agency

EEA European Economic Area

Page 14 of 15
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 21.08.2015 / 0008
 Replacing version dated / version: 03.08.2015 / 0007
 Valid from: 21.08.2015
 PDF print date: 23.08.2015
 KUPFER-SPRAY 250 mL
 Art.: 1520

EEC European Economic Community
 EINECS European Inventory of Existing Commercial Chemical Substances
 ELINCS European List of Notified Chemical Substances
 EN European Norms
 EPA United States Environmental Protection Agency (United States of America)
 ERC Environmental Release Categories
 ES Exposure scenario
 etc. et cetera
 EU European Union
 EWC European Waste Catalogue
 Fax. Fax number
 gen. general
 GHS Globally Harmonized System of Classification and Labelling of Chemicals
 GWP Global warming potential
 HET-CAM Hen's Egg Test - Chorionallantoic Membrane
 HGWP Halocarbon Global Warming Potential
 IARC International Agency for Research on Cancer
 IATA International Air Transport Association
 IBC Intermediate Bulk Container
 IBC (Code) International Bulk Chemical (Code)
 IC Inhibitory concentration
 IMDG-code International Maritime Code for Dangerous Goods
 incl. including, inclusive
 IUCLID International Uniform Chemical Information Database
 LC lethal concentration
 LC50 lethal concentration 50 percent kill
 LCLo lowest published lethal concentration
 LD Lethal Dose of a chemical
 LD50 Lethal Dose, 50% kill
 LDLo Lethal Dose Low
 LOAEL Lowest Observed Adverse Effect Level
 LOEC Lowest Observed Effect Concentration
 LOEL Lowest Observed Effect Level
 LQ Limited Quantities
 MARPOL International Convention for the Prevention of Marine Pollution from Ships
 n.a. not applicable
 n.av. not available
 n.c. not checked
 n.d.a. no data available
 NIOSH National Institute of Occupational Safety and Health (United States of America)
 NOAEC No Observed Adverse Effective Concentration
 NOAEL No Observed Adverse Effect Level
 NOEC No Observed Effect Concentration
 NOEL No Observed Effect Level
 ODP Ozone Depletion Potential
 OECD Organisation for Economic Co-operation and Development
 org. organic
 PAH polycyclic aromatic hydrocarbon
 PBT persistent, bioaccumulative and toxic
 PC Chemical product category
 PE Polyethylene
 PNEC Predicted No Effect Concentration
 POCP Photochemical ozone creation potential
 ppm parts per million
 PROC Process category
 PTFE Polytetrafluorethylene
 REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
 REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
 RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
 SADT Self-Accelerating Decomposition Temperature
 SAR Structure Activity Relationship

Page 15 of 15
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 21.08.2015 / 0008
Replacing version dated / version: 03.08.2015 / 0007
Valid from: 21.08.2015
PDF print date: 23.08.2015
KUPFER-SPRAY 250 mL
Art.: 1520

SU Sector of use
SVHC Substances of Very High Concern
Tel. Telephone
ThOD Theoretical oxygen demand
TOC Total organic carbon
TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
WEL-TWA, WEL-STEL WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period), WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period) (EH40, UK).
WHO World Health Organization
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

No responsibility.

These statements were made by:

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