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

Revision date / version: 11.12.2017 / 0011

Replacing version dated / version: 02.03.2017 / 0010

Valid from: 11.12.2017 PDF print date: 11.12.2017 KUPFER-PASTE 1 kg

Art.: 4061

# 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-PASTE 1 kg**

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

Lubricant

Sector of use [SU]:

SU 3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

SU21 - Consumer uses: Private households (=general public = consumers)

SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category [PC]:

PC24 - Lubricants, greases, release products

Process category [PROC]:

PROC 1 - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC 2 - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC 8a - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC 8b - Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC20 - Use of functional fluids in small devices

Article Categories [AC]:

AC99 - Not required.

Environmental Release Category [ERC]:

ERC 4 - Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC 7 - Use of functional fluid at industrial site

ERC 9a - Widespread use of functional fluid (indoor)

ERC 9b - Widespread use of functional fluid (outdoor)

#### Uses advised against:

No information available at present.

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

(B)

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:

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# 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)



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**Hazard class Hazard statement** Hazard category

Aquatic Acute H400-Very toxic to aquatic life.

H412-Harmful to aquatic life with long lasting effects. Aquatic Chronic 3

#### 2.2 Label elements

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



Warning

H410-Very toxic to aquatic life with long lasting effects.

P273-Avoid release to the environment.

P391-Collect spillage.

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

#### 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 (< 0,1 %).

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

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

#### 3.1 Substance

# n.a. 3.2 Mixture

Copper	
Registration number (REACH)	
Index	
EINECS, ELINCS, NLP	231-159-6
CAS	7440-50-8
content %	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 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



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First-aiders should ensure they are protected!

Never pour anything into the mouth of an unconscious person!

#### Inhalation

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.

#### **Eve contact**

Remove contact lenses.

Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

#### Ingestion

Rinse the mouth thoroughly with water.

Do not induce vomiting. Consult doctor immediately.

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

Where relevant delayed occuring symptomes and effects will be found in section 11. or at the exposure routes under section 4.1.

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

With oil mist formation:

Irritation of the respiratory tract

Headaches

Nausea

breathing difficulties

With long-term contact:

reddening of the skin

Irritation of the skin.

Ingestion: Malaise

# 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

CO<sub>2</sub>

Foam Dry extinguisher

# 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:

Oxides of carbon

Toxic gases

#### 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.

Dispose of contaminated extinction water according to official regulations.

#### SECTION 6: Accidental release measures

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

Ensure sufficient supply of air.

Avoid contact with eyes or skin.

If applicable, caution - risk of slipping.

#### 6.2 Environmental precautions

If leakage occurs, dam up.



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Resolve leaks if this possible without risk.

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

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13. Or:

Pick up mechanically and dispose of according to Section 13.

Fill the absorbed material into lockable containers.

#### 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.

Avoid contact with eyes.

Avoid long lasting or intensive contact with skin.

Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.

Do not carry cleaning cloths soaked in product in trouser pockets.

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.

Under all circumstances prevent penetration into the soil.

Protect from direct sunlight and warming.

Do not store over 45°C.

Store in a well-ventilated place.

Store cool

#### 7.3 Specific end use(s)

No information available at present.

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

#### 8.1 Control parameters

© Chemical Name	Copper		Content %:5-10
WEL-TWA: 1 mg/m3 (dusts and mi	ists, as Cu)	WEL-STEL: 2 mg/m3 (dusts and mists, as Cu)	
Monitoring procedures:		ISO 15202 (Workplace air - Determination of metals and metal	lloids in airborne
		particulate matter by Inductively Coupled Plasma Atomic Emis	sion 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 fluc	prescence spectrometry) -
	-	1998 - EU project BC/CEN/ENTR/000/2002-16 card 84-2 (200	4)
	-	NIOSH 7029 (Copper (dust and fume)) - 1994	
	-	NIOSH 7300 (Elements by ICP (nitric/perchloric ashing)) - 200	3
	-	NIOSH 7301 (Elements by ICP (aqua regia ashing)) - 2003	
	-	NIOSH 7303 (Elements by ICP (Hot block HCI/HNO3 digestion	
		OSHA ID-121 (Metal and metalloid particulates in workplace a	tmospheres (Atomic
	-	absorption)) - 2002 - EU project BC/CEN/ENTR/000/2002-16 of	card 84-10 (2004)



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	OSHA ID-125G (Metal and metalloid particulates in workplace atmospheres (ICP)) 2002 OSHA ID-206 (ICP analysis of metal/metallloid particulates from solder operations) 1991
BMGV:	Other information:

© Chemical Name	Oil mist, mineral	Content %:
WEL-TWA: 5 mg/m3 (ACGIH)	WEL-STEL: 10 mg/m3 (ACGIH)	
Monitoring procedures:	- Draeger - Oil 10/a-P (67 28 371)	
	<ul> <li>Draeger - Oil Mist 1/a (67 33 031)</li> </ul>	
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).

(8) = Inhalable fraction (2017/164/EU). (9) = Respirable fraction (2017/164/EU). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).

(8) = Inhalable fraction (2017/164/EU). (9) = Respirable fraction (2017/164/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | 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.

#### 8.2 Exposure controls

Copper						
Area of application	Exposure route / Environmental compartment	Effect on health	Descrip tor	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	
	Environment - sewage treatment plant		PNEC	230	µg/l	

### 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.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. BS EN 14042.

BS EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".



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#### 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:

With danger of contact with eyes.

Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection: Protective nitrile gloves (EN 374)

Minimum layer thickness in mm:

>= 0.38

Permeation time (penetration time) in minutes:

> 480

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.

Protective hand cream recommended.

Skin protection - Other:

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

Respiratory protection:

Normally not necessary.

With oil mist formation:

Filter A P2 (EN 14387), code colour brown, white

Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:

Not applicable

manufacturer.

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

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: Paste, solid. Colour: Copper Odour: Characteristic Odour threshold: Not determined pH-value: Not determined Melting point/freezing point: Not determined Initial boiling point and boiling range: Not determined Flash point: >150 °C Evaporation rate: Not determined Flammability (solid, gas): Not determined Lower explosive limit: Not determined Upper explosive limit: Not determined Vapour pressure: Not determined Vapour density (air = 1): Not determined



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Density: <1 g/cm3 (25°C)

Bulk density:

Solubility(ies):

Water solubility:

Partition coefficient (n-octanol/water):

Auto-ignition temperature:

Decomposition temperature:

Viscosity:

Not determined

Not determined

Not determined

Not determined

Explosive properties: Product is not explosive.

Oxidising properties: No

9.2 Other information

Miscibility:

Fat solubility / solvent:

Conductivity:

Not determined

Not determined

Not determined

Surface tension:

Not determined

Not determined

Not determined

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

No dangerous reactions are known.

# 10.4 Conditions to avoid

Heating

#### 10.5 Incompatible materials

Avoid contact with strong 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-PASTE 1 kg						
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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	3239	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						n.d.a.
sensitisation:						
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity -						n.d.a.
single exposure (STOT-SE):						
Specific target organ toxicity -						n.d.a.
repeated exposure (STOT-RE):						
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

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



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# **SECTION 12: Ecological information**

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

KUPFER-PASTE 1 kg							
Art.: 4061							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and							Isolate as much
degradability:							as possible with
							an oil separator.
12.3. Bioaccumulative							n.d.a.
potential:							
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT							n.d.a.
and vPvB assessment							
12.6. Other adverse							n.d.a.
effects:							

Copper							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50		0,0087	mg/l	Pimephales		
					promelas		
12.1. Toxicity to daphnia:	NOEC/NOEL	24h	0,004	mg/l	Daphnia magna		
12.1. Toxicity to daphnia:	EC50	48h	0,03	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	72h	0,0426-	mg/l	Pseudokirchneriell		
			0,0535		a subcapitata		

# **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)

13 08 99 wastes not otherwise specified

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. dispose at suitable refuse site.

E.g. suitable incineration plant.

### For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Uncontaminated packaging can be recycled.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

#### **SECTION 14: Transport information**

#### **General statements**

14.1. UN number:

3077

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER)

14.3. Transport hazard class(es):





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14.4. Packing group: Ш Classification code: M7 IO: 5 ka

14.5. Environmental hazards: environmentally hazardous

Tunnel restriction code:

Transport by sea (IMDG-code)

14.2. UN proper shipping name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER) 14.3. Transport hazard class(es): Ш 14.4. Packing group: EmS: F-A, S-F Marine Pollutant: Yes

14.5. Environmental hazards: environmentally hazardous

Transport by air (IATA)

14.2. UN proper shipping name:

Environmentally hazardous substance, solid, n.o.s. (COPPER) 14.3. Transport hazard class(es): Ш 14.4. Packing group:

14.5. Environmental hazards: environmentally hazardous

14.6. 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.

14.7. 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

Observe restrictions:

Comply with trade association/occupational health regulations.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 1 - The following categories apply to this product (others may also need to be considered

according to storage, handling etc.):

Hazard categories	Notes to Annex I	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier
		requirements	requirements
E1		100	200

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Observe incident regulations.

#### 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

#### **SECTION 16: Other information**

2, 3, 4, 5, 7, 8, 11, 12, 13, 14, 15

Revised sections:

Employee training in handling dangerous goods is required.

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.





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# 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
Aquatic Acute 1, H400	Classification according to calculation procedure.
Aquatic Chronic 3, H412	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).

H302 Harmful if swallowed.

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Aquatic Acute — Hazardous to the aquatic environment - acute Aquatic Chronic — Hazardous to the aquatic environment - chronic

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



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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)

NOAECNo 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

REACHRegistration, 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



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

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Valid from: 11.12.2017 PDF print date: 11.12.2017 KUPFER-PASTE 1 kg

Art.: 4061

SAR Structure Activity Relationship

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 = 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.

These statements were made by:

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