



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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

1.1. Product identifier

Trade name/designation:

RAVENOL Kupferpaste

Article No.:

1340109

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

Use of the substance/mixture:

grease

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Ravensberger Schmierstoffvertrieb GmbH

Jöllenbecker Str. 2

33824 Werther

Germany

Telephone: +49 5203 9719 0

Telefax: +49 5203 9719 40

E-mail: kontakt@ravenol.de

Website: www.ravenol.de

E-mail (competent person): sdb@ravenol.de

1.4. Emergency telephone number

Abt. Technik (Produktsicherheit), 24h: +1 872 5888271(Contract ID: RAV) , +49 5203 9719 0 (Mo-Do 7.30 Uhr - 16.30 Uhr, Fr 7.30 Uhr - 13.15 Uhr) (Only available during office hours.)

SECTION 2: Hazards identification

* 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment (Aquatic Acute 1)	H400: Very toxic to aquatic life.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 3)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

* 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:



GHS09

Environment

Signal word: Warning

Hazard components for labelling:

Copper flakes (with a coating of aliphatic acid)

Hazard statements for environmental hazards	
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

Supplemental hazard information: none

Precautionary statements Prevention

P273 Avoid release to the environment.

Precautionary statements Response

P391 Collect spillage.

Precautionary statements Disposal

P501 Dispose of contents/container to an appropriate recycling or disposal facility.

2.3. Other hazards

Other adverse effects:

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 7440-50-8 EC No.: 231-159-6	Copper flakes (with a coating of aliphatic acid) Acute Tox. 4 (H302), Aquatic Acute 1 (H400), Aquatic Chronic 2 (H411) Warning M-factor (acute): 10 M-factor (chronic): 1	5 - ≤ 9.9 weight-%

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

Provide fresh air. Consult a doctor immediately.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Consult a doctor immediately.

After eye contact:

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
 In case of eye irritation consult an ophthalmologist.

Following ingestion:

Call a physician immediately.

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

Gastrointestinal complaints

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Extinguishing powder, Carbon dioxide (CO₂), Water mist, Water spray jet, alcohol resistant foam.
 Use water spray jet to protect personnel and to cool endangered containers.

Unsuitable extinguishing media:

Full water jet

5.2. Special hazards arising from the substance or mixture

No information available.

Hazardous combustion products:

Carbon monoxide, Carbon dioxide (CO₂), Gases/vapours, toxic



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
Use water spray jet to protect personnel and to cool endangered containers.
Do not inhale explosion and combustion gases.

5.4. Additional information

Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Use personal protection equipment. Special danger of slipping by leaking/spilling product.

Protective equipment:

Use personal protection equipment. Wear protective gloves/protective clothing/eye protection/face protection.

Emergency procedures:

Remove persons to safety.

6.1.2. For emergency responders

Personal protection equipment:

Use appropriate respiratory protection.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Immediately inform the responsible authorities in entry into waterways or sewage system.

6.3. Methods and material for containment and cleaning up

For containment:

Take up mechanically. Dispose of waste according to applicable legislation.

For cleaning up:

Treat the recovered material as prescribed in the section on waste disposal. Never return spills in original containers for re-use. Clean contaminated articles and floor according to the environmental legislation. Retain contaminated washing water and dispose it.

Other information:

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Disposal: see section 13

Personal protection equipment: see section 8

6.5. Additional information

Clear spills immediately. Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Keep cool. Protect from sunlight.
Avoid contact with skin, eyes and clothes.
Keep container tightly closed in a cool, well-ventilated place.

Fire prevent measures:

Take precautionary measures against static discharges.

Environmental precautions:

See section 8.

Advices on general occupational hygiene

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

No special measures are necessary.

Packaging materials:

Keep only in the original container.

Requirements for storage rooms and vessels:

Keep in a cool, well-ventilated place.

To follow: TRGS 510

Hints on storage assembly:

not required

Storage class (TRGS 510, Germany): 10 - 13 - Other combustible and non-combustible substances

Further information on storage conditions:

Store in a cool dry place.

7.3. Specific end use(s)

Recommendation:

Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
WEL (GB)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Smoke)
WEL (GB)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ② 2 mg/m ³ ⑤ (Dusts and mist calculated as Cu)
BE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Poussières et brouillard, calculé comme Cu)
CZ	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ② 2 mg/m ³ ⑤ (Prach, vdechovatelná frakce)
CZ	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ② 0.2 mg/m ³ ⑤ (pára, alveolární frakce)
PL	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³
MY	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Debu-debu dan kabus dikira sebagai Cu)
MY	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Asap)
NO	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ⑤ (Røyte)



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

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NO	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Støv)
IE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Smoke)
HTP (FI)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.02 mg/m ³
LT	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (įkvepiama frakcija)
LT	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (alveolinė frakcija)
SE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (beräknad som Cu; inhalerbar fraktion)
SE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (beräknad som Cu; respirabel fraktion)
NPEL (SK)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (alveolárna frakcia)
IE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Dusts and mist calculated as Cu)
NPEL (SK)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (vdýchnuteľná frakcia)
Québec (CA)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Dusts and mist calculated as Cu)
NL	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ② 0.03 mg/m ³ ⑤ (inadembare fractie)
ES	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ⑤ (fracción respirable, Véase UNE EN 481: Atmosferas en los puestos de trabajo. Definición de las fracciones por el partículas para la medición de aerosoles)
VLA (FR)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Fumée)
VLA (FR)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ② 2 mg/m ³ ⑤ (Poussières)



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

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BG	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ⑤ (съединения, разтворим Изчисление Ва)
BG	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (съединения, разтворим Изчисление Ва), (неорганичен)
HR	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ② 2 mg/m ³ ⑤ (Bakar prašina)
HR	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³
DK	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (beregnet som Cu)
DK	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³
BE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Fumée)
OSHA (US)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ⑤ (Smoke; calculated as Cu)
RO	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	② 0.2 mg/m ³ ⑤ (Fum, calculat ca Cu)
RO	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.5 mg/m ³ ② 1.5 mg/m ³ ⑤ (Pulbere)
ACGIH (US)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Smoke)
EE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (kogu tolm)
EE	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (peentolm)
Alberta (CA)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Smoke)
Alberta (CA)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Dusts and mist)



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

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LV	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.5 mg/m ³ ② 1 mg/m ³
BC (CA)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Smoke)
BC (CA)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³
MAK (AT)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ② 4 mg/m ³ ⑤ (einatembare Fraktion, max. 4x15 min./Schicht)
MAK (AT)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ② 0.4 mg/m ³ ⑤ (alveolengängige Fraktion max. 4x15 min./Schicht)
HU	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ② 0.2 mg/m ³
HU	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.01 mg/m ³ ⑤ (belélegezhető frakció, Füst)
TW	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (##)
TW	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (## #)
KR	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ② 2 mg/m ³ ⑤ (## #(#) ##)
KR	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ⑤ (##)
IS	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ heildarryk
IS	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ⑤ örfint ryk
CN	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ ##
CN	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (#)



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
RU	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.5 mg/m ³ ③ 1 mg/m ³
GR	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Καπνός)
GR	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ② 2 mg/m ³ ⑤ (Σκόνες)
OSHA (US)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Dusts and mist calculated as Cu)
NIOSH (US)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³
ACGIH (US)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 1 mg/m ³ ⑤ (Dusts and mist calculated as Cu)
Québec (CA)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.2 mg/m ³ ⑤ (Smoke, calculated as Cu)
DFG (DE)	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.01 mg/m ³ ② 0.02 mg/m ³ ⑤ (alveolengängige Fraktion)
CH	Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6	① 0.1 mg/m ³ ② 0.2 mg/m ³ ⑤ (einatembare Fraktion)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

See section 7. No additional measures necessary.

8.2.2. Personal protection equipment



Eye/face protection:

Wear eye/face protection. EN 166

Skin protection:

Hand protection

Suitable material: NBR (Nitrile rubber)

Thickness of the glove material: $\geq 0,4$ mm

Breakthrough time: 480 min

Breakthrough times and swelling properties of the material must be taken into consideration.



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Tested protective gloves must be worn: EN ISO 374

Suitable protective clothing: Protective clothing.

Respiratory protection:

not required

8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance**

Physical state: solid

Colour: copper

Odour: characteristic

Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	<i>not determined</i>		
Melting point	<i>not determined</i>		
Freezing point	<i>not determined</i>		
Initial boiling point and boiling range	<i>not determined</i>		
Decomposition temperature	<i>not determined</i>		
Flash point	<i>not determined</i>		
Evaporation rate	<i>not determined</i>		
Auto-ignition temperature	> 350 °C		
Upper/lower flammability or explosive limits	<i>not applicable</i>		
Vapour pressure	0.1 hPa	20 °C	
Vapour density	<i>not applicable</i>		
Density	<i>not determined</i>		
Relative density	<i>not applicable</i>		
Bulk density	<i>not applicable</i>		
Water solubility	practically insoluble		
Partition coefficient: n-octanol/water	<i>not applicable</i>		
Dynamic viscosity	<i>not determined</i>		
Kinematic viscosity	<i>not determined</i>		

*** 9.2. Other information**

Not applicable

SECTION 10: Stability and reactivity**10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

10.5. Incompatible materials

No information available.



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Copper flakes (with a coating of aliphatic acid)	CAS No.: 7440-50-8	EC No.: 231-159-6
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LD₅₀ oral: 300 - 500 mg/kg (Rat) (ATE)
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LD₅₀ dermal: >2,000 mg/kg (Rat)

LC₅₀ Acute inhalation toxicity (dust/mist): 1.03 mg/L 4 h (Rat)

Acute oral toxicity:

Based on available data, the classification criteria are not met.

Acute dermal toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

Frequently or prolonged contact with skin may cause dermal irritation.

Serious eye damage/irritation:

slightly irritant but not relevant for classification.

Respiratory or skin sensitisation:

Based on available data, the classification criteria are not met.

Germ cell mutagenicity:

No indications of human germ cell mutagenicity exist.

Carcinogenicity:

No indication of human carcinogenicity.

Reproductive toxicity:

No indications of human reproductive toxicity exist.

STOT-single exposure:

Based on available data, the classification criteria are not met.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on available data, the classification criteria are not met.

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

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 12: Ecological information* **12.1. Toxicity**

Copper flakes (with a coating of aliphatic acid)	CAS No.: 7440-50-8	EC No.: 231-159-6
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LC₅₀: 0.665 mg/L 4 d (fish)

LC₅₀: 0.044 mg/L 2 d (crustaceans)
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EC₅₀: 0.57 mg/L 3 d (Algae/water plant)

Aquatic toxicity:

Very toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment.

12.2. Persistence and degradability

Copper flakes (with a coating of aliphatic acid)	CAS No.: 7440-50-8	EC No.: 231-159-6
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Biodegradation: Yes, slowly

Abiotic degradation:

No information available.



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

Additional information:

Do not allow to enter into surface water or drains.

12.3. Bioaccumulative potential

Bioconcentration factor (BCF):

No information available.

Partition coefficient: n-octanol/water:

not applicable

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

Copper flakes (with a coating of aliphatic acid) CAS No.: 7440-50-8 EC No.: 231-159-6
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

* **12.6. Endocrine disrupting properties**

This substance has endocrine disrupting properties with respect to non-target organisms.

* **12.7. Other adverse effects**

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of waste according to applicable legislation.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code packaging

Remark:

Dispose of waste according to applicable legislation.

Waste treatment options

Appropriate disposal / Product:

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

Non-contaminated packages may be recycled.

13.2. Additional information

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN number or ID number			
UN 3077	UN 3077	UN 3077	UN 3077
14.2. UN proper shipping name			
ENVIRONMENTALLY-HAZARDOUS SUBSTANCE,- SOLID, N.O.S. (Copper flakes (with a coating of aliphatic - acid))	ENVIRONMENTALLY-HAZARDOUS SUBSTANCE,- SOLID, N.O.S. (Copper flakes (with a coating of aliphatic - acid))	ENVIRONMENTALLY-HAZARDOUS SUBSTANCE,- SOLID, N.O.S. (Copper flakes (with a coating of aliphatic - acid))	ENVIRONMENTALLY-HAZARDOUS SUBSTANCE,- SOLID, N.O.S. (Copper flakes (with a coating of aliphatic - acid))
14.3. Transport hazard class(es)			
14.4. Packing group			
III	III	III	III



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
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14.5. Environmental hazards

		MARINE POLLUTANT	
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14.6. Special precautions for user

<p>Special provisions: Special provision 375: In the case of quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging, this hazardous material is subject to the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN not subject to transport regulations. 2.10.2.7 IMDG Code: This dangerous goods is subject to compliance with regulations in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging Of the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN do not comply with transport regulations.</p> <p>A917 IATA-DGR: not restricted as per special provision A197 (in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging).</p> <p>Limited quantity (LQ): 5 kg</p> <p>Excepted Quantities (EQ): E1</p> <p>Hazard identification number (Kemler No.): 90</p> <p>Classification code: M7</p>	<p>Special provisions: Special provision 375: In the case of quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging, this hazardous material is subject to the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN not subject to transport regulations. 2.10.2.7 IMDG Code: This dangerous goods is subject to compliance with regulations in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging Of the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN do not comply with transport regulations.</p> <p>A917 IATA-DGR: not restricted as per special provision A197 (in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging).</p> <p>Limited quantity (LQ): 5 kg</p> <p>Excepted Quantities (EQ): E1</p> <p>Classification code: M7</p>	<p>Special provisions: Special provision 375: In the case of quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging, this hazardous material is subject to the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN not subject to transport regulations. 2.10.2.7 IMDG Code: This dangerous goods is subject to compliance with regulations in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging Of the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN do not comply with transport regulations.</p> <p>A917 IATA-DGR: not restricted as per special provision A197 (in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging).</p> <p>Limited quantity (LQ): 5 kg</p> <p>Excepted Quantities (EQ): E1</p> <p>EmS-No.: F-A, S-F</p>	<p>Special provisions: Special provision 375: In the case of quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging, this hazardous material is subject to the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN not subject to transport regulations. 2.10.2.7 IMDG Code: This dangerous goods is subject to compliance with regulations in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging Of the general packing regulations 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 ADR / RID / ADN do not comply with transport regulations.</p> <p>A917 IATA-DGR: not restricted as per special provision A197 (in quantities of up to 5 L (UN 3082) or up to 5 kg (UN 3077) per inner or individual packaging).</p>
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14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according to IBC Code.

SECTION 15: Regulatory information

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

15.1.1. EU legislation

Other regulations (EU):

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive], Hazard categories:

- E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Störfallverordnung

for substances contained in the product:

Hazard categories:

- E1 Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1

Technische Anleitung Luft (TA-Luft)

Remark:

To follow: 5.2.5

Water hazard class

WGK:

2 - deutlich wassergefährdend

Source:

Self-classification (mixture; calculation rule).

Technische Regeln für Gefahrstoffe

TRGS 510

TRGS 500

Berufsgenossenschaftliche Vorschriften (DGUV-Vorschriften)

Berufsgenossenschaftliche Informationen (DGUV-Informationen) 868

Berufsgenossenschaftliche Regeln (DGUV-Regeln) 189, 190, 192, 195

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

* 16.1. Indication of changes

2.1.	Classification of the substance or mixture
2.2.	Label elements
9.2.	Other information
11.2.	Information on other hazards
12.1.	Toxicity
12.6.	Endocrine disrupting properties
12.7.	Other adverse effects
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes
16.5.	Relevant R-, H- and EUH-phrases (Number and full text)

16.2. Abbreviations and acronyms

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

16.3. Key literature references and sources for data

67/548/EEC - Dangerous Substances Directive

1999/45/EEC - Dangerous Preparations Directive

EC 1907/2006 - REACH Regulation

1272/2008 EC - Regulation on classification, labeling and packaging of substances and mixtures, and amending Directives 67/548/EEC and 1999/45/EC and Regulation (EC) No 1907/2006

Regulation (EC) No 1907/2006 (REACH), Annex II

European Chemicals Agency (ECHA), C & L classification and labeling inventory

European Chemicals Agency (ECHA), ECHA CHEM Registered substances

OECD The Global Portal to Information on Chemical Substances (ChemPortal)

Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA): GESTIS substance database and International limit values for chemical substances

Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances hazardous to water Rigoletto (catalog substances hazardous to water)



Revision date: 7 Jun 2022 Version: 6 Print date: 13 Jun 2022

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment (Aquatic Acute 1)	H400: Very toxic to aquatic life.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 3)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

* 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

16.6. Training advice

No data available

16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

* Data changed compared with the previous version