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

1.1. Product identifier

Trade name/designation : COPPER PASTE WS
Product code : 2500, 36, 4000, 5000, 6000, 9000, 13000, FT, 33000, A33000 / WS / 80-20, 85-15, 90-10, 95-5
Basic Colour: Copper Gold

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

Main use category : Industrial uses, Professional uses .

1.3. Details of the supplier of the safety data sheet

Company : AVL METAL POWDERS n.v.
Elleboogstraat 7
B-8500 Kortrijk , Belgium, Europe
Telephone +32 (0)56 22 00 21
Telefax: +32 (0)56 22 64 14
E-mail: sales@avlmetalpowders.com
Website: www.avlmetalpowders.com
VAT: BE 0405 375 371 - RPR Kortrijk

1.4. Emergency telephone number

Emergency telephone : +32 (0)475 38 36 83 (This telephone number is available 24 hours per day, 7 days per week.)

IRELAND (REPUBLIC OF)

National Poisons Information Centre
Beaumont Hospital +353 18 37 99 64/+353 1 809 21 66

UNITED KINGDOM

National Poisons Information Service
(Newcastle Centre) 0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
Regional Drugs and Therapeutics Centre,
Wolfson Unit

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EU) 1272/2008

CLP-Classification : The product is classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

Flam. Sol. 1 H228
Acute Tox. 4 (Oral) H302
STOT SE 3 H336
Asp. Tox. 1 H304
Aquatic Acute 1 H400
Aquatic Chronic 2 H411

Full text of H-phrases: see section 16

2.1.2. Classification according to EU Directives 67/548/EEC or 1999/45/EC

Classification : This mixture is classified as hazardous according to 1999/45/EC.

F; R11
Xn; R22
N; R51/53

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R66
N; R50
R67

Full text of R-phrases: see section 16

2.2. Label elements

2.2.1. Labelling according to Regulation (EU) 1272/2008

Hazard pictograms :



Signal word :

Danger

Contains :

n-butyl acetate

Coated Copper Flakes

Hazard statements :

H228 - Flammable solid.

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.

Precautionary statements :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P273 - Avoid release to the environment.

P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor/.

P331 - Do NOT induce vomiting.

P391 - Collect spillage.

Extra phrases :

EUH066 - Repeated exposure may cause skin dryness or cracking.

2.2.2. Labelling according to Directives (67/548 - 1999/45)

Not relevant

2.3. Other hazards

Other hazards :

PBT/vPvB data :

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Substance name	Product identifier	%	Classification according to Directive 67/548/EEC
copper	(CAS No.) 7440-50-8 (EC No) 231-159-6 (REACH-no) 01-2119480154-42-XXXX	80 - 95	Xn; R22 N; R50 F; R11 R53
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	(EC No) 919-857-5 (REACH-no) 01-2119463258-33-XXXX	5 - 20	R10 Xn; R65 R66 R67

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Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
copper	(CAS No.) 7440-50-8 (EC No) 231-159-6 (REACH-no) 01-2119480154-42-XXXX	80 - 95	Flam. Sol. 1, H228 Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 2, H411
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	(EC No) 919-857-5 (REACH-no) 01-2119463258-33-XXXX	5 - 20	Flam. Liq. 3, H226 STOT SE 3, H336 Asp. Tox. 1, H304

Full text of R- and H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	: Provide fresh air. Keep at rest. When in doubt or if symptoms are observed, get medical advice.
Skin contact	: Remove contaminated clothing and shoes. After contact with skin, wash immediately with plenty of water and soap. When in doubt or if symptoms are observed, get medical advice. Wash contaminated clothing before reuse.
Eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.
In case of ingestion	: Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Get immediate medical advice/attention.
Additional advice	: First aider: Pay attention to self-protection! See also section 8 Treat symptomatically. Show this safety data sheet to the doctor in attendance. When in doubt or if symptoms are observed, get medical advice. Never give anything by mouth to an unconscious person or a person with cramps.

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

Inhalation	: Vapours may cause drowsiness and dizziness. Inhalation of vapours in high concentration may cause irritation of respiratory system.
Skin contact	: Prolonged skin contact may defat the skin and produce dermatitis. Repeated exposure may cause skin dryness or cracking.
Eye contact	: Dust contact with the eyes can lead to mechanical irritation.
Ingestion	: Harmful if swallowed. May be fatal if swallowed and enters airways.
Other adverse effects	: none.

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

No data available


SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: ABCD-powder Dry sand
Extinguishing media which must not be used for safety reasons:	: Water

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable solid
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Specific hazards : Vapours can form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Beware of reignition.
The pressure in sealed containers can increase under the influence of heat.
Burning produces noxious and toxic fumes.
Hazardous combustion products: Carbon oxides, Copper oxides
Do not allow run-off from fire-fighting to enter drains or water courses.
Dispose according to legislation.

5.3. Advice for firefighters

Advice for firefighters : Special protective equipment for firefighters.
In case of fire: Wear self-contained breathing apparatus.
Evacuate area.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Evacuate area.
Provide adequate ventilation.
Use personal protective equipment as required.
Personal protection equipment: see section 8
Avoid contact with skin, eyes and clothes.
Avoid generation of dust.
Do not breathe vapours/dust.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.
Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.
Use only non-sparking tools.

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place.
Personal protection equipment: see section 8.

6.2. Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so.
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Collect in closed and suitable containers for disposal.
Dispose according to legislation.
Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.


6.4. Reference to other sections

Personal protection equipment: see section 8
Disposal: see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling : Use only in well-ventilated areas.
Provide adequate ventilation.
Use personal protective equipment as required.
Personal protection equipment: see section 8 .
Avoid contact with skin, eyes and clothes.
Avoid generation of dust.
Do not breathe vapours/dust.

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Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Take precautionary measures against static discharges.

Ensure that the equipment is adequately grounded.

Take any precaution to avoid mixing with incompatible materials.

See also section 10

Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time).

Do not allow to enter into surface water or drains.

Advices on general occupational hygiene :

: Keep good industrial hygiene.

When using do not eat, drink or smoke.

Wash hands before breaks and immediately after using the product.

Take off contaminated clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage :

: Flammable solids

Keep container tightly closed in a cool, well-ventilated place.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Protect from sunlight.

Do not store near or with any of the incompatible materials listed in section 10.

Maximum storage period (time) :

3 months.

Packaging materials :

: Keep/Store only in original container.

7.3 Specific end use(s)


No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values :

copper (7440-50-8)		
Austria	MAK (mg/m ³)	1 mg/m ³ (inhalable fraction) 0,1 mg/m ³ (respirable fraction, smoke)
Austria	MAK Short time value (mg/m ³)	4 mg/m ³ (inhalable fraction) 0,4 mg/m ³ (respirable fraction, smoke)
Belgium	Limit value (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Bulgaria	OEL TWA (mg/m ³)	0,1 mg/m ³ (metal vapor)
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust)
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	2 mg/m ³ (dust and fumes)
France	VLE (mg/m ³)	2 mg/m ³ (dust)
France	VME (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust)
Greece	OEL TWA (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust)
Greece	OEL STEL (mg/m ³)	2 mg/m ³ (dust)
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0,2 mg/m ³ (fume)
Latvia	OEL TWA (mg/m ³)	0,5 mg/m ³

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copper (7440-50-8)		
Spain	VLA-ED (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Switzerland	VLE (mg/m ³)	0,2 mg/m ³ (inhalable)
Switzerland	VME (mg/m ³)	0,1 mg/m ³ (inhalable)
Netherlands	Grenswaarde TGG 8H (mg/m ³)	0,1 mg/m ³ (inhalable fraction)
United Kingdom	WEL TWA (mg/m ³)	1 mg/m ³ (dust and mists) 0,2 mg/m ³ (fume)
United Kingdom	WEL STEL (mg/m ³)	0,6 mg/m ³ (calculated-fume) 2 mg/m ³ (dust and mist)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1 mg/m ³ (dust) 0,1 mg/m ³ (fume)
Denmark	Grænseværdie (langvarig) (mg/m ³)	1,0 mg/m ³ (dust and powder) 0,1 mg/m ³ (fume)
Finland	HTP-arvo (8h) (mg/m ³)	1 mg/m ³ 0,1 mg/m ³ (respirable dust and fume)
Hungary	AK-érték	1 mg/m ³ 0,1 mg/m ³ (fume)
Hungary	CK-érték	4 mg/m ³ 0,4 mg/m ³ (fume)
Ireland	OEL (8 hours ref) (mg/m ³)	0,2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Ireland	OEL (15 min ref) (mg/m ³)	0,6 mg/m ³ (calculated-fume) 2 mg/m ³ (dust and mist)
Lithuania	IPRV (mg/m ³)	1 mg/m ³ (inhalable fraction) 0,2 mg/m ³ (respirable fraction)
Norway	Gjennomsnittsverdier (AN) (mg/m ³)	0,1 mg/m ³ (fume) 1 mg/m ³ (dust)
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m ³)	0,3 mg/m ³ (fume) 3 mg/m ³ (dust)
Poland	NDS (mg/m ³)	0,2 mg/m ³
Romania	OEL TWA (mg/m ³)	0,50 mg/m ³ (powder)
Romania	OEL STEL (mg/m ³)	0,20 mg/m ³ (fume) 1,50 mg/m ³ (dust)
Slovakia	NPHV (priemerná) (mg/m ³)	1 mg/m ³ (dust) 0,1 mg/m ³ (fume)
Slovakia	NPHV (Hraničná) (mg/m ³)	2 mg/m ³ (dust) 0,2 mg/m ³ (fume)
Sweden	nivågränsvärde (NVG) (mg/m ³)	1 mg/m ³ (total dust) 0,2 mg/m ³ (respirable dust)

Recommended monitoring procedures : Concentration measurement in air
Personal air monitoring

8.2. Exposure controls

Personal protection equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
Half-face mask (DIN EN 140)
Full face mask (EN 136)
Filter type: A/P (EN 141)


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Hand protection	:	The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.,Wear chemically resistant gloves (tested to EN374) .
Eye protection	:	Wear eye glasses with side protection according to EN 166. Tightly fitting safety goggles (EN166).
Body protection	:	Wear suitable protective clothing.
Thermal hazard protection	:	Not required under normal use.
Engineering control measures	:	Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. A washing facility/water for eye and skin cleaning purposes should be present. Use only at a place, which is equipped with a safety shower. Ensure that the equipment is adequately grounded. Take precautionary measures against static discharges. Apply measures to prevent dust explosions. Organisational measures to prevent/limit releases, dispersion and exposure See also section 7
Environmental exposure controls	:	Do not allow to enter into surface water or drains. Comply with applicable Community environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	:	Paste
Colour	:	Copper
Odour	:	Hydrocarbons
Odour threshold:	:	No data available
pH	:	No data available
Melting point/freezing point	:	1083 °C Copper
Initial boiling point and boiling range	:	2597 °C Copper 130 - 210 °C Solvent
Flash point	:	> 36 °C Solvent
Evaporation rate	:	0,14 Solvent (n-butyl acetate = 1)
Flammability (solid, gas)	:	Flammable.
Upper/lower flammability or explosive limits	:	0,6 - 7 vol % Solvent
Vapour pressure	:	0,3 kPa Solvent
Vapour density	:	No data available
Density	:	8,96 g/cm ³ Copper 740 - 850 kg/m ³ Solvent
Relative density	:	> 1 Solvent (Air = 1.0)
Water solubility	:	0 g/l Copper ≈ 0 g/l Solvent
Solubility in different media	:	No data available
Partition coefficient n-octanol/water	:	No data available
Auto-ignition temperature	:	> 200 °C Solvent

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Decomposition temperature : No data available

Viscosity : (20°C) 0,8 - 2,1 m²/s Solvent

Explosive properties : Not applicable
The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.

Oxidising properties : Not applicable
The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.

9.2. Other information

Molecular weight : 146 g/mol Solvent

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : Flammable solid.
Reference to other sections: 10.5

10.2. Chemical stability

Stability : The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions : Reference to other sections:

10.4. Conditions to avoid

Conditions to avoid : Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.
Avoid generation of dust.
See also section 7
Handling and storage

10.5. Incompatible materials

Incompatible materials : Oxidising substances,, See also section 7, Handling and storage

10.6. Hazardous decomposition products

Hazardous decomposition products : Reference to other sections: 5.2

SECTION 11: Toxicological information


11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.
Coated Copper Flakes :
Harmful if swallowed.

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	
LD50/oral/rat	> 5000 mg/kg OECD 401
LD50/dermal/rabbit	> 5000 mg/kg OECD 402
LC50/inhalation/4h/rat	4951 mg/m ³ OECD 403

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: No data available

Serious eye damage/eye irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: No data available

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Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met.)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met.)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met.)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met.)
STOT-single exposure	: May cause drowsiness or dizziness. Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics : May cause drowsiness or dizziness.
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met.)
Aspiration hazard	: May be fatal if swallowed and enters airways. Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics : May be fatal if swallowed and enters airways.

Other information

Symptoms related to the physical, chemical and toxicological characteristics, Reference to other sections: 4.2

SECTION 12: Ecological information

12.1. Toxicity

Toxicity	: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
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copper (7440-50-8)	
LC50 fish 1	0,0068 - 0,0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0,03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 1	0,0426 - 0,0535 mg/l (72 h - Pseudokirchneriella subcapitata)
LC50 fish 2	< 0,3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 other aquatic organisms 2	0,031 - 0,054 mg/l (96 h - Pseudokirchneriella subcapitata)
EC50 72h algae [mg/l] (1)	0,0426 - 0,0535 mg/l (Species: Pseudokirchneriella subcapitata [static])
EC50 96h algae [mg/l] (1)	0,031 - 0,054 mg/l (Species: Pseudokirchneriella subcapitata [static])

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	
Additional information	EL0, Daphnia magna (Big water flea), acute: 1000 mg/l (48 hours) NOELR, Pseudokirchneriella subcapitata, acute: 100 mg/l (72 hours) EL50, Pseudokirchneriella subcapitata, acute: >1000 mg/l (72 hours) LL50, acute, Oncorhynchus mykiss (Rainbow trout): >1000 mg/l (96 hours)

12.2. Persistence and degradability

Persistence and degradability	: No data available
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12.3. Bioaccumulative potential

Bioaccumulation	: No data available
Partition coefficient n-octanol/water	: No data available

12.4. Mobility in soil

Mobility	: No data available
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12.5. Results of PBT and vPvB assessment

PBT/vPvB data : PBT/vPvB data :
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

Other information : No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product waste: : Handle with care.
Safe handling: see section 7
Handling and storage
Collect and dispose of waste product at an authorised disposal facility.
Refer to manufacturer/supplier for information on recovery/recycling.
If recycling is not practicable, dispose of in compliance with local regulations.
Dispose according to legislation.

Contaminated packaging : Do not puncture or incinerate.
Do not burn, or use a cutting torch on, the empty drum.
Empty containers should be taken to local recyclers for disposal.
If recycling is not practicable, dispose of in compliance with local regulations.

Further ecological information : Do not allow to enter into surface water or drains.

List of proposed waste codes/waste designations in accordance with EWC : Classified as hazardous waste according to European Union regulations.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14: Transport information

14.1. UN number

UN number : 1325

14.2. UN proper shipping name

Proper Shipping Name : FLAMMABLE SOLID, ORGANIC, N.O.S.(copper ; Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics)

Proper shipping name IATA/IMDG : FLAMMABLE SOLID, ORGANIC, N.O.S. (Copper; Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2 % aromatics)

14.3. Transport hazard class(es)

14.3.1. Overland transport


Class(es) : 4.1 - Flammable solids, self-reactive substances and solid desensitized explosives
Hazard identification number (Kemler No.) : 40
Classification code : F1
ADR/RID-Labels : 4.1 - Flammable solid



14.3.2. Inland waterway transport (ADN)

Class (UN) : 4.1

14.3.3. Transport by sea

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Class or Division : 4.1 - Flammable solids, self-reactive substances and solid desensitized explosives

14.3.4. Air transport

Class or Division : 4.1 - Flammable solids, self-reactive substances and solid desensitized explosives

14.4. Packing group

Packing group : II

14.5. Environmental hazards

Environmental hazards : N



Other information : No supplementary information available.

14.6 Special precautions for user

No data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation 1907/2006/EC.

Regulation 1907/2006/EC : None
 Authorisations : Not applicable

15.1.2. National regulations

DE : WGK : 2
 DE : German storage class (LGK) : LGK 4.1B - Flammable solids
 DE : Technische Regeln für Gefahrstoffe (TRGS) : Applicable
 FR : Installations classées : 143x, 117x
 NL : ABM : 5 - (B) Very toxic to aquatic organisms

15.2. Chemical safety assessment

Chemical Safety Assessment : For the following substances of this preparation a chemical safety assessment has been carried out:
 Copper
 Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Oral) : Acute toxicity Category 4
 Aquatic Acute 1 : Hazardous to the aquatic environment - Aquatic Acute 1
 Aquatic Chronic 2 : Hazardous to the aquatic environment - chronic hazard category 2
 Asp. Tox. 1 : Aspiration hazard, Category 1
 Flam. Liq. 3 : Flammable liquids, Category 3
 Flam. Sol. 1 : Flammable solids, Hazard Category 1

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STOT SE 3	: Specific target organ toxicity — Single exposure, Category 3, Narcosis
H226	: Flammable liquid and vapour.
H228	: Flammable solid.
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.
R10	: Flammable.
R11	: Highly flammable.
R22	: Harmful if swallowed.
R50	: Very toxic to aquatic organisms.
R51/53	: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	: May cause long-term adverse effects in the aquatic environment.
R65	: Harmful: may cause lung damage if swallowed.
R66	: Repeated exposure may cause skin dryness or cracking.
R67	: Vapours may cause drowsiness and dizziness.
F	: Highly flammable
N	: Dangerous for the environment
Xn	: Harmful


Safety datasheet sections which have been updated : 14

Key literature references and sources for data : Eropcean Chemicals Agency, European Metal Particulate Association (EMPA) Supplier SDS

Abbreviations and acronyms :
 ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin
 ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
 CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC
 IATA = International Air Transport Association
 IMDG = International Maritime Dangerous Goods Code
 LEL = Lower Explosive Limit/Lower Explosion Limit
 UEL = Upper Explosion Limit/Upper Explosive Limit
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
 TWA = time weighted average
 STEL = Short term exposure limit
 PBT = persistent, bioaccumulating and toxic (PBT).
 vPvB = very persistent and very bioaccumulating
 EWC = European Waste Catalogue
 NA = Not applicable
 LC50 = Median lethal concentration
 LD50 = Median lethal dose
 EC50 = Median Effective Concentration
 N.O.S. = Not Otherwise Specified
 WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

The contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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product. If the product is used as a component in another product, this SDS information may not be applicable.