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

1.1. Product identifier

Trade name/designation : BRONZE PASTE IPA
 Product code : 2500, 36, 3000, 4000, 5000, 6000, 9000, 13000, FT / IPA / 80-20, 85-15, 90-10, 95-5. Basic Colour: Rich Gold, Pale Gold, Rich Pale Gold & Deep 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. 2 H228
 Eye Irrit. 2 H319
 STOT SE 3 H336
 Aquatic Acute 1 H400
 Aquatic Chronic 1 H410

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
 Xi; R36
 N; R50/53

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R66
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 :



GHS02

GHS07

GHS09

Signal word :

Warning

Contains :

Isopropyl acetate

Hazard statements :

H228 - Flammable solid.

H319 - Causes serious eye irritation.

H336 - May cause drowsiness or dizziness.

H410 - Very 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.

P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

P280 - Wear eye protection/face protection.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 - If eye irritation persists: Get medical advice/attention.

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	55 - 90	N; R50 R53
Zinc	(CAS No.) 7440-66-6 (EC No) 231-175-3 (EC Index) 030-001-01-9 (REACH-no) 01-2119467174-37-XXXX	5 - 30	N; R50/53
Isopropyl acetate	(CAS No.) 108-21-4 (EC No) 203-561-1 (EC Index) 607-024-00-6 (REACH-no) 01-2119537214-46-XXXX	0 - 20	F; R11 Xi; R36 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	55 - 90	Aquatic Acute 1, H400 (M=10) Aquatic Chronic 3, H412
Zinc	(CAS No.) 7440-66-6 (EC No) 231-175-3 (EC Index) 030-001-01-9 (REACH-no) 01-2119467174-37-XXXX	5 - 30	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Isopropyl acetate	(CAS No.) 108-21-4 (EC No) 203-561-1 (EC Index) 607-024-00-6 (REACH-no) 01-2119537214-46-XXXX	0 - 20	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

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	: Take off contaminated clothing. Wash with plenty of water/ When in doubt or if symptoms are observed, get medical advice.
Eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
In case of ingestion	: Rinse mouth thoroughly with water. Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Get 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. Repeated or prolonged exposure: (dust) : May cause respiratory irritation.
Skin contact	: May be irritating. Prolonged skin contact may defat the skin and produce dermatitis. Repeated exposure may cause skin dryness or cracking.
Eye contact	: Causes serious eye irritation.
Ingestion	: May be irritating.
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	: Foam, ABC-powder, Carbon dioxide, Dry sand
Extinguishing media which must not be used for safety reasons:	: Water

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5.2. Special hazards arising from the substance or mixture

- Fire hazard : Flammable solid
- 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 decomposition products COx
metal 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.
Use water spray jet to protect personnel and to cool endangered containers.
Evacuate area.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

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 to enter into surface water or drains.

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.

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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.
 - 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.
 - Protect from moisture.
 - 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 :

Zinc (7440-66-6)		
Switzerland	VLE (mg/m ³)	0,4 mg/m ³ (respirable)
Switzerland	VME (mg/m ³)	0,1 mg/m ³ (respirable) 2 mg/m ³ (inhalable)

Isopropyl acetate (108-21-4)		
Austria	MAK (mg/m ³)	420 mg/m ³
Austria	MAK (ppm)	100 ppm
Austria	MAK Short time value (mg/m ³)	420 mg/m ³
Austria	MAK Short time value (ppm)	100 ppm

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Isopropyl acetate (108-21-4)		
Belgium	Limit value (mg/m ³)	424 mg/m ³
Belgium	Limit value (ppm)	100 ppm
Belgium	Short time value (mg/m ³)	849 mg/m ³
Belgium	Short time value (ppm)	200 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	849 mg/m ³
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	200 ppm
France	VLE (mg/m ³)	1140 mg/m ³
France	VLE (ppm)	300 ppm
France	VME (mg/m ³)	950 mg/m ³
France	VME (ppm)	250 ppm
Greece	OEL TWA (mg/m ³)	950 mg/m ³
Greece	OEL TWA (ppm)	250 ppm
Greece	OEL STEL (mg/m ³)	1140 mg/m ³
Greece	OEL STEL (ppm)	275 ppm
Spain	VLA-ED (mg/m ³)	425 mg/m ³
Spain	VLA-ED (ppm)	100 ppm
Spain	VLA-EC (mg/m ³)	850 mg/m ³
Spain	VLA-EC (ppm)	200 ppm
United Kingdom	WEL STEL (mg/m ³)	849 mg/m ³
United Kingdom	WEL STEL (ppm)	200 ppm
Czech Republic	Expoziční limity (PEL) (mg/m ³)	800 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	625 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	150 ppm
Finland	HTP-arvo (8h) (mg/m ³)	420 mg/m ³
Finland	HTP-arvo (8h) (ppm)	100 ppm
Finland	HTP-arvo (15 min)	850 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	200 ppm
Hungary	AK-érték	840 mg/m ³
Hungary	CK-érték	840 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	100 ppm
Ireland	OEL (15 min ref) (ppm)	200 ppm
Poland	NDS (mg/m ³)	600 mg/m ³
Poland	NDSch (mg/m ³)	1000 mg/m ³
Romania	OEL TWA (mg/m ³)	400 mg/m ³
Romania	OEL TWA (ppm)	96 ppm
Romania	OEL STEL (mg/m ³)	600 mg/m ³
Romania	OEL STEL (ppm)	144 ppm

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)

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copper (7440-50-8)		
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
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)

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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) (EN 140)
Full face mask (EN 136) (EN 136)
Filter type: A/P (EN 141)

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.,Breakthrough time (maximum wearing time) : >480',Wear chemically resistant gloves (tested to EN374) .,PVA (Polyvinyl alcohol)

Eye protection : Tightly fitting safety goggles (EN166). Wear eye glasses with side protection according to EN 166.

Body protection : Wear suitable protective clothing.
Chemical resistant safety shoes
Wear suitable coveralls to prevent exposure to the skin.

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.
Ensure that the equipment is adequately grounded.
Take precautionary measures against static discharges.
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 : bronze

Odour : fruity, alcohol odour

Odour threshold: : No data available

Odour threshold: : No data available

pH : Not applicable

Melting point/freezing point : 850 °C bronze
-69 °C Solvent

Initial boiling point and boiling range : 2300 °C bronze
88 - 90 °C Solvent

Flash point : 4 °C Solvent

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Evaporation rate	:	No data available
Flammability (solid, gas)	:	Flammable.
Upper/lower flammability or explosive limits	:	LEL: 1,8 vol % Solvent UEL: 8 vol % Solvent
Vapour pressure	:	(20 °C) 6,2 kPa Solvent
Vapour density	:	(Air=1) 3,5 Solvent
Density	:	(20 °C) 7,14 - 8,96 g/cm ³ bronze (20 °C) 0,87 kg/l Solvent
Relative density	:	(Water=1) 0,7 kg/l bronze
Water solubility	:	Insoluble (20 °C) 29 g/100ml Solvent
Solubility in different media	:	No data available
Partition coefficient n-octanol/water	:	(20 °C) 1,3 Solvent
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
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

Other information	:	Solvent Volatile. : 99,5%
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	:	Flammable solid. Reference to other sections: 10.5
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10.2. Chemical stability

Stability	:	The product is stable under storage at normal ambient temperatures.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	:	In dry state: Vapours can form explosive mixtures with air. Reference to other sections: 10.4 & 10.5
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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
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10.5. Incompatible materials

Incompatible materials	:	Acids and bases ., Oxidising substances ., Halogens, Halogenated compounds ., See also section 7, Handling and storage
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10.6. Hazardous decomposition products

Hazardous decomposition products	:	Carbon oxides metal oxides Reference to other sections: 5.2
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met.)

Zinc (7440-66-6)	
LD50/oral/rat	2000 mg/kg (OECD 401)
LC50/inhalation/4h/rat	> 5,41 mg/m ³ (OECD 403)
ATE CLP (oral)	2000 mg/kg bodyweight

Isopropyl acetate (108-21-4)	
LD50/oral/rat	6750 mg/kg bodyweight OECD 401
LD50/dermal/rabbit	24h 17400 mg/kg bodyweight Draize Test
Additional information	LC50, Inhalation, Rat: 50600 mg/m ³ (8 hours, OECD 403)

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: Not applicable

Serious eye damage/eye irritation : Causes serious eye irritation.
pH: Not applicable

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.

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met.)

Isopropyl acetate (108-21-4)	
LOAEL (oral, rat, 90 days)	3600 mg/kg bodyweight/day
NOAEL (oral, rat, 90 days)	900 mg/kg bodyweight/day OECD 408
NOAEL (inhalation, rat, vapour, 90 days)	3500 ppm EPA OTS 798.2450

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met.)

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 organisms, may cause long-term adverse effects in the aquatic environment.

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Zinc (7440-66-6)	
LC50 fish 1	439 µg/l Cottus bairdii (pH 6-6.5) 780 µg/l Pimephales promelas (fathead minnow) (pH 7-7.5) 330 µg/l Pimephales promelas (fathead minnow) (pH 8- 8.5) 500 µg/l Pimephales promelas (fathead minnow)
EC50 Daphnia 1	2909 - 2140 µg/l (OECD 202)
EC50 other aquatic organisms 1	(OECD 202) 0,937 mg/l Poecilia reticulata (Guppy) (OECD 202) 0,416 mg/l Ceriodaphnia Dubia (water flea)
EC50 72h algae [mg/l] (1)	0,09 - 0,125 mg/l (Species: Pseudokirchneriella subcapitata [static])
EC50 96h algae [mg/l] (1)	0,11 - 0,271 mg/l (Species: Pseudokirchneriella subcapitata [static])
LOEC (chronic)	240 µg/L Pimephales promelas (fathead minnow)
NOEC chronic fish	(30d) 169 µg/L Cottus bairdii
Additional information	NOEC, aquatic invertebrates, long term, Ceriodaphnia Dubia (water flea): 25 µg/L (7 days, freshwater) NOEC, aquatic invertebrates, long term, Daphnia magna (Big water flea): 100 µg/L (3 weeks, freshwater) NOEC, aquatic invertebrates, long term, Mytilus edulis: 75 µg/L (3 days, freshwater) NOEC, aquatic algae, Pseudokirchneriella subcapitata: 24 µg/L (72 hours, OECD 201) LOAEC, aquatic algae, Nitzschia closterium: 20 µg/L (4 days)

Isopropyl acetate (108-21-4)	
EC50 Daphnia 1	> 1000 mg/l freshwater US EPA
LC50 fish 2	48h 360 mg/l freshwater DIN 38412-15
ErC50 (algae)	72h 370 mg/l freshwater OECD 201

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])
LC50 fish 2	< 0,3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
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])

12.2. Persistence and degradability

Persistence and degradability : Solvent
Readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation : Bioaccumulation is unlikely.
Solvent
Partition coefficient n-octanol/water : (20 °C) 1,3 Solvent

12.4. Mobility in soil

Mobility : No data available

12.5. Results of PBT and vPvB assessment

PBT/vPvB data : PBT/vPvB data
copper,
Zinc :

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Not applicable
Solvent
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

Other information :

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

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/Zinc/Isopropyl acetate)
Proper shipping name IATA/IMDG : FLAMMABLE SOLID, ORGANIC, N.O.S. (Copper/Zinc/Isopropyl acetate)

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

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

14.3.4. Air transport

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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

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006 :

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008 : Isopropyl acetate

40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not. : BRONZE PASTE IPA - Isopropyl acetate

This product contains an ingredient according to the candidate list of Annex XIV of the REACH 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 : 1450;117x
 NL : ABM : 4 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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15.2. Chemical safety assessment

Chemical Safety Assessment

: For the following substances of this preparation a chemical safety assessment has been carried out:

Copper
Zinc
Isopropyl acetate

SECTION 16: Other information

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

Aquatic Acute 1	: Hazardous to the aquatic environment - Aquatic Acute 1
Aquatic Chronic 1	: Hazardous to the aquatic environment - chronic hazard category 1
Aquatic Chronic 3	: Hazardous to the aquatic environment - chronic hazard category 3
Eye Irrit. 2	: Serious eye damage/eye irritation Category 2
Flam. Liq. 2	: Flammable liquids, Category 2
Flam. Sol. 2	: Flammable solids, Category 2
STOT SE 3	: Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	: Highly flammable liquid and vapour.
H228	: Flammable solid.
H319	: Causes serious eye irritation.
H336	: May cause drowsiness or dizziness.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.
R11	: Highly flammable.
R36	: Irritating to eyes.
R50	: Very toxic to aquatic organisms.
R50/53	: Very 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.
R66	: Repeated exposure may cause skin dryness or cracking.
R67	: Vapours may cause drowsiness and dizziness.
F	: Highly flammable
N	: Dangerous for the environment
Xi	: Irritant

Key literature references and sources for data : 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 Explosive Limit/Upper Explosion 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

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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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