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

1.1. Product identifier

Trade name/designation : Bronze Powder
Product code : 9000 -13000 - FT (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 use

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
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
N; R50/53

Full text of R-phrases: see section 16

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2.2. Label elements

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

Hazard pictograms :



GHS02 GHS09

Signal word :

Warning

Hazard statements :

H228 - Flammable solid.

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

Precautionary statements :

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P273 - Avoid release to the environment.

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

Not relevant

2.3. Other hazards

Other hazards :

PBT/vPvB data

Not applicable

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 | 70 - 90 | Xn; R22 N; R50 F; R11 R53 |
| Zinc powder - zinc dust (stabilized) | (CAS No.) 7440-66-6 (EC No) 231-175-3 (EC Index) 030-002-00-7 (REACH-no) 01-2119467174-37-XXXX | 10 - 30 | N; R50/53 |

| 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 | 70 - 90 | Flam. Sol. 1, H228 Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 2, H411 |
| Zinc powder - zinc dust (stabilized) | (CAS No.) 7440-66-6 (EC No) 231-175-3 (EC Index) 030-002-00-7 (REACH-no) 01-2119467174-37-XXXX | 10 - 30 | Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |

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

Comments :

(1) Flammable solid.

(UN Test N.1: Test method for readily combustible solids)

SECTION 4: First aid measures

4.1. Description of first aid measures


Inhalation :

Provide fresh air.

When in doubt or if symptoms are observed, get medical advice.

Skin contact :

No hazards which require special first aid measures.

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Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If symptoms persist, call a physician.

In case of ingestion : When in doubt or if symptoms are observed, get medical advice.

Additional advice : Treat symptomatically.
See also section 8
First aider: Pay attention to self-protection!
When in doubt or if symptoms are observed, get medical advice.

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

Inhalation : Repeated or prolonged exposure: (dust) : May cause respiratory impairment and lung damage.

Skin contact : No adverse effects are expected.

Eye contact : Dust contact with the eyes can lead to mechanical 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

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable solid

Specific hazards : Hazardous decomposition products
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.

SECTION 6: Accidental release measures


6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Evacuate area.
Prevent unauthorised persons entering the zone.
Provide adequate ventilation.
Use personal protective equipment as required.
Personal protection equipment: see section 8
Avoid generation of dust.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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.

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6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so.
 Dam up.
 Take up mechanically.
 Do not rinse down with water. /
 Water (with cleaning agent)
 Dispose according to legislation.

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 : Provide adequate ventilation.
 Use personal protective equipment as required.
 Avoid contact with skin, eyes and clothes.
 Personal protection equipment: see section 8
 Avoid generation of dust.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Take any precaution to avoid mixing with incompatible materials.
 See also section 10
 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 : Keep containers tightly closed in a dry, cool and well-ventilated place.
 Do not store near or with any of the incompatible materials listed in section 10.
 Protect against water. /
 Humidity

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) |

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| copper (7440-50-8) | | |
|---------------------------------|--|---|
| 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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| Zinc powder - zinc dust (stabilized) (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) |

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 : Use appropriate respiratory protection.
Effective dust mask. (EN 149)
Respirator with a particle filter (EN 143) :
Full face mask (EN 136)
Half-face mask (DIN EN 140)
Filter type: P3
- Hand protection : Wear gloves in accordance with EN 388 as a protection against mechanical risks.,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.
- Eye protection : Wear eye glasses with side protection according to EN 166.
- Body protection : No special protective equipment required.
- Thermal hazard protection : Use dedicated equipment.
Not required under normal use.
- Engineering control measures : Use only in area provided with appropriate exhaust ventilation.
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 : Powder
- Colour : gold
- Odour : odourless
- Odour threshold: : No data available
- Odour threshold: : No data available
- pH : Not applicable
- Melting point/freezing point : 850 °C
- Initial boiling point and boiling range : No data available
- Flash point : Not applicable
- Evaporation rate : No data available
- Flammability (solid, gas) : Flammable., (UN Test N.1: Test method for readily combustible solids)

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|--|---|
| Upper/lower flammability or explosive limits | : No data available |
| Vapour pressure | : No data available |
| Vapour density | : No data available |
| Density | : 7,14 - 8,96 g/cm ³ @ 20 °C |
| Relative density | : No data available |
| Water solubility | : Insoluble |
| Solubility in different media | : No data available |
| Partition coefficient n-octanol/water | : Not applicable |
| Auto-ignition temperature | : Not applicable |
| Decomposition temperature | : No data available |
| Viscosity | : Not applicable |
| 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 : (Apparent) Density : 0,5 - 1,3 g/cm³ @ 20°C

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : None under normal processing.
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

10.4. Conditions to avoid

Conditions to avoid : Remove all sources of ignition.
See also section 7

10.5. Incompatible materials

Incompatible materials : Acids and bases ., Oxidising substances ., Halogens ., Halogenated compounds .

10.6. Hazardous decomposition products


Hazardous decomposition products : metal oxides

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 powder - zinc dust (stabilized) (7440-66-6) | |
| LD50/oral/rat | > 2000 mg/kg |
| LC50/inhalation/4h/rat | > 5410 mg/m ³ |

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| | |
|-----------------------------------|--|
| Skin corrosion/irritation | : Not classified (Based on available data, the classification criteria are not met.) pH: Not applicable |
| Serious eye damage/eye irritation | : Not classified (Based on available data, the classification criteria are not met.) 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 | : Not classified (Based on available data, the classification criteria are not met.) |
| STOT-repeated exposure | : Not classified (Based on available data, the classification criteria are not met.) |

| | |
|---|----------------------------|
| Zinc powder - zinc dust (stabilized) (7440-66-6) | |
| NOAEL (oral, rat, 90 days) | 31,52 mg/kg bodyweight/day |

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.

| | |
|--------------------------------|---|
| 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]) |

| | |
|---|---|
| Zinc powder - zinc dust (stabilized) (7440-66-6) | |
| LC50 fish 1 | 439 µg/l |
| EC50 Daphnia 1 | 1833 - 2909 µg/l |
| 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]) |
| NOEC chronic fish | 30 d 169 µg/L |
| NOEC chronic crustacea | 25 - 50 µg/L |

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| Zinc powder - zinc dust (stabilized) (7440-66-6) | |
| Additional information | EC10, algae: 2.5 - 48 µg/L NOEC, Chronic Toxicity to aquatic plants: 60 µg/L EC50, microorganisms: 5.2 mg/l NOEC, aquatic organisms: 10 - 15 µg/L LOEC, aquatic organisms: 10 - 15 µg/L |

12.2. Persistence and degradability

Persistence and degradability : Not applicable

12.3. Bioaccumulative potential

Bioaccumulation : No data available
 Partition coefficient n-octanol/water : Not applicable

12.4. Mobility in soil

Mobility : No data available

12.5. Results of PBT and vPvB assessment

PBT/vPvB data : PBT/vPvB data :
 Not applicable

12.6. Other adverse effects

Other information :

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product waste: : Do not dispose of together with household waste.
 If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Delivery to an approved waste disposal company.

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 : 3089


14.2. UN proper shipping name

Proper Shipping Name : METAL POWDER, FLAMMABLE, N.O.S.(Copper () Zinc ())
 Proper shipping name IATA/IMDG : METAL POWDER, FLAMMABLE, N.O.S. (Copper () Zinc ())

14.3. Transport hazard class(es)

14.3.1. Overland transport

ADR/RID : tunnel restriction code : E
 Class(es) : 4.1 - Flammable solids, self-reactive substances and solid desensitized explosives
 Hazard identification number (Kemler No.) : 40
 Classification code : F3

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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

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

14.4. Packing group

Packing group : III

14.5. Environmental hazards

Environmental hazards : N



Other information : Not applicable.

14.6. Special precautions for user

Special precautions for user : Not applicable.

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

Code: IBC : Not applicable.

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 :

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 Powder

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

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DE : WGK : 2
 DE : German storage class (LGK) : LGK 4.1B - Flammable solids
 DE : TA-Luft : Total dust
 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. (A)
 NL : NeR (Nederlandse emissie Richtlijn) : Inorganic substances in powdered form

15.2. Chemical safety assessment

Chemical Safety Assessment : For this substance a chemical safety assessment has been carried out.
 Copper
 Zinc


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 1 : Hazardous to the aquatic environment - chronic hazard category 1
 Aquatic Chronic 2 : Hazardous to the aquatic environment - chronic hazard category 2
 Flam. Sol. 1 : Flammable solids, Hazard Category 1
 Flam. Sol. 2 : Flammable solids, Category 2
 H228 : Flammable solid.
 H302 : Harmful if swallowed.
 H400 : Very toxic to aquatic life.
 H410 : Very toxic to aquatic life with long lasting effects.
 H411 : Toxic to aquatic life with long lasting effects.
 R11 : Highly flammable.
 R22 : Harmful if swallowed.
 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.
 F : Highly flammable
 N : Dangerous for the environment
 Xn : Harmful

Key literature references and sources for data : European Metal Particulate Association (EMPA)

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

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