

Thermo ZF / Thermo ZF + / Thermo ZF Sigma

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 02/12/2020

Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Substance
Name : Copper
Trade name : Thermo ZF / Thermo ZF + / Thermo ZF Sigma
CAS-No. : 7440-50-8
Formula : Cu

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Wire Electrical Discharge Machining

1.3. Supplier

Thermocompact
181, Route de Sarves - Metz-Tessy - CS 70021
PRINGY CEDEX, 74371 - FRANCE
T +33 (0)4 50 27 20 02 - F +33 (0)4 50 27 17 37
thermo@thermocompact.com - www.thermocompact.com

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : Copper
CAS-No. : 7440-50-8

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : In case of inhalation of fumes of molten material or dust: Move the affected person away from the contaminated area and into the fresh air. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact : Rinse with plenty of water. If case of redness or irritation, call a doctor.
First-aid measures after eye contact : Rinse eyes with water as a precaution. If case of redness or irritation, call a doctor.
First-aid measures after ingestion : Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Inhalation of fumes may cause metal fume fever.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Special powder against metallic fire (Class D). Sand.
Unsuitable extinguishing media : Water. Halogenated compounds.

5.2. Specific hazards arising from the chemical

Hazardous combustion products : Toxic vapors may be released Metallic oxides
Hazardous decomposition products in case of fire : Toxic vapors may be released. Metallic oxides.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Contain the extinguishing fluids by bunding. Do not breathe fumes.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Avoid contact with skin and eyes. Do not attempt to take action without suitable protective equipment.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Shovel into suitable and closed container for disposal. Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

Concerning disposal elimination after cleaning, see item 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes.
Hygiene measures : Do not drink, eat or smoke in the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in dry, cool, well-ventilated area. Keep away from heat.
Incompatible materials : acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Copper (7440-50-8)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Copper, as Cu
ACGIH TWA (mg/m ³)	0.2 mg/m ³ Fume (Cu) 1 mg/m ³ Dusts and mists (as Cu)
Remark (ACGIH)	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2019
USA - OSHA - Occupational Exposure Limits	
Local name	Copper
OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³ (Fume (as Cu)) 1 mg/m ³ (Dusts and mists (as Cu))
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA) (mg/m ³)	1 mg/m ³ Copper (dusts and mists), as Cu 0.1 mg/m ³ (fume)

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8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves. Breakthrough time : refer to the recommendations of the supplier

Eye protection:

Not required for normal conditions of use

Skin and body protection:

Not required for normal conditions of use

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Massive.
Color	: Colorless
Odor	: odorless
Odor threshold	: No data available
pH	: Not applicable
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable
Vapor pressure	: Not applicable
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Water: Insoluble
Partition coefficient n-octanol/water (Log Pow)	: Not applicable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: Non oxidizing material.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

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10.4. Conditions to avoid

None to our knowledge.

10.5. Incompatible materials

acids.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable
Serious eye damage/irritation	: Not classified pH: Not applicable
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: Not applicable
Symptoms/effects after inhalation	: Inhalation of fumes may cause metal fume fever.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Copper (7440-50-8)

Partition coefficient n-octanol/water (Log Pow)	Not applicable
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Dispose of in accordance with relevant local regulations.
Additional information	: The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Copper (7440-50-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

15.2. International regulations

CANADA

Copper (7440-50-8)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Copper (7440-50-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

No additional information available

15.3. US State regulations

Copper (7440-50-8)

State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List
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SECTION 16: Other information

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Data sources : ECHA - European Chemicals Agency. CNESST (Commission des normes, de l'équité, de la santé et de la sécurité du travail).

Other information : Safety data sheet established by : LISAM TELEGIS
17 rue de la Couture F-60400 Passel
www.lisam-telegis.com.

Abbreviations and acronyms:

ECHA	European Chemicals Agency
Pow (log)	n-octanol/water partition coefficient
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.