

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006

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

#### 1.1. Product identifier

Trade name: InnoMetal Blue Coppennitrate  
Other names: -  
MSDS name: EN\_InnoMetal\_MSDS\_Blue Coppennitrate

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

1.2.1. Application of the substance / the mixture  
Metal treatment

1.2.2. Applications advised against  
No further relevant information available.

#### 1.3. Details of the supplier of the safety data sheet

**InnoMetal GmbH**  
Einsteinstr. 12  
D-33104 Paderborn  
Fon: +49 (0)221 9582011  
info@innometal.de

#### 1.4. Emergency telephone number

Monday - Friday, 9:00 am - 4:00 pm  
+49 (0)221 958 2011

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008  
Oxidising solids, Category 2; H272  
Acute toxicity, Category 4, oral; H302  
Skin irritation, Category 2; H315  
Eye irritation, Category 2; H319  
Hazardous to the aquatic environment, Acute Category 1; H400  
Hazardous to the aquatic environment, Chronic Category 1; H410

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

**2.2. Label elements**

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms:



GHS03      GHS05      GHS07      GHS09

Signal word: Danger

Hazard statements:

H272: May intensify fire; oxidiser.

H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

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

Precautionary statements:

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

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P273: Avoid release to the environment.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P280: Wear protective gloves/protective clothing/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.

**2.3. Other hazards**

All chemicals are potentially dangerous. They are therefore only be handled by specially trained personnel with the necessary care.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

**SECTION 3: Composition/information on ingredients**

**3.1. Substance**

Labelling (CLP):

CAS	EINECS	Chemical name	Hazard pictograms	Signal word	Hazard statements
3251-23-8	221-838-5	Copper(II)-nitrate	GHS02, GHS05, GHS07, GHS09	Danger	H: 272, 302, 315, 319, 410

Additional information: For the wording of the listed risk phrases refer to section 16.

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

After inhalation: Remove from exposure. Ensure supply of fresh air. If breathing stops or shows signs of

failing, give artificial respiration. Obtain medical attention urgently. Keep warm and rest. If there is difficulty in breathing, give oxygen. Do not use mouth to mouth ventilation

After skin contact: In case of contact, wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Seek medical treatment.

After eye contact: Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention.

After swallowing: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Seek medical treatment immediately.

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

No further relevant information available.

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

No further relevant information available.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

Suitable extinguishing agents:

Water or water spray in early stages of fire.

Foam or dry chemical may also be used.

For safety reasons unsuitable extinguishing agents:

Contact with oxidizable substances may cause extremely violent combustion.

### **5.2. Special hazards arising from the substance or mixture**

Ambient fire may liberate hazardous vapours or decomposition products.

Nitrous gases (nitric oxides)

Metal oxide fume

In case of violent hazardous effect:

Wear self-contained breathing apparatus.

Wear a special tightly sealed suit.

### **5.3. Advice for firefighters**

Substance is non-combustible, but has an oxidizing effect.

In case of ambient fire:

Cool surrounding containers with water spray.

If possible, take container out of dangerous zone.

Rise in pressure and risk of bursting when heating.

Shut off sources of ignition.

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Warn affected surroundings.

Wear respiratory protection, eye protection, hand protection and body protection (see chapter Personal Protection).

### **6.2. Environmental precautions**

Severe hazard to waters. Inform the responsible authorities when only small quantities get into water, drainage, sewer, or the ground.

### **6.3. Methods and material for containment and cleaning up**

Carefully sweep up, gather and remove. Avoid rising dust.

Afterwards ventilate area and wash spill site.

### **6.4. Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Precaution on handling:

Keep away from combustible materials.

Keep away from open flames.

Observe the smoking prohibition!

Work done with fire or open flame should only be carried out with written permission if the risk of fire or explosion cannot be completely eliminated.

Absolutely no welding in the working area.

Filter the solutions only with glass wool, glass chips, or ceramic filters. Do not use any filtration materials made of paper which risks ignition after drying.

Do not leave any cleaning rags lying in the open.

Only work with vessels and lines after these have been thoroughly rinsed.

**7.2. Conditions for safe storage, including any incompatibilities**

Storage:

Store in a cool place.

Store in a dry place.

Keep container tightly closed.

Do not use any food containers - risk of mistake.

Store in the original container as much as possible.

Containers have to be labelled clearly and permanently.

Keep container in a well-ventilated place.

Install sufficiently large collection rooms (depressions, walls, or stable freestanding walls).

Protect from moisture.

Substance is hygroscopic.

**7.3. Specific end use(s)**

No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

<b>Ingredients with limit values that require monitoring at the workplace:</b>
Not applicable.

Additional information: The lists valid during the making were used as basis.

## 8.2. Exposure controls

Respiratory protection: In an emergency (e.g.: unintentional release of the substance) respiratory protection must be worn. Consider the maximum period for wear. Particle filter P2 or P3, colour code white. Use insulating device for concentrations above the usage limits for filter devices, for oxygen concentrations below 17% volume, or in circumstances which are unclear.

Protection of hands:



### Protective gloves

Use protective gloves. The glove material must be sufficiently impermeable and resistant to the substance. Check the tightness before wear. Gloves should be well cleaned before being removed, then stored in a well-ventilated location. Pay attention to skin care.

Skin protection crèmes do not protect sufficiently against the substance.

The following information is valid for aqueous, saturated solutions of the substance.

The following materials are suitable for protective gloves (Permeation time  $\geq$  8 hours):

Natural rubber/Natural latex - NR (0,5 mm) (use non-powdered and allergen free products)

Polychloroprene - CR (0,5 mm)

Nitrile rubber/Nitrile latex - NBR (0,35 mm)

Butyl rubber - Butyl (0,5 mm)

Fluoro carbon rubber - FKM (0,4 mm)

Polyvinyl chloride - PVC (0,5 mm)

Eye protection: Tightly sealed goggles.

Body protection: When handling large amounts:

Depending on the risk, wear a tight, long apron and boots or suitable chemical protection clothing. Wear flameproof protective clothing.

General protective and hygienic measures: Wash hands after handling compounds and before eating, smoking, using lavatory and at the end of the day.

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value. Ensure that eyewash stations and safety showers are close to the workstation location.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Information

Appearance:

Form: powder

Colour: Blue

Odour: odourless

PH-value:  $< 2.0$

Change in condition

Melting point/Melting range: 256 °C

Boiling point/Boiling range: Not determined

Flash point: Not applicable.

Flammability (solid, gaseous): Not determined

Ignition temperature: Not determined

Decomposition temperature: Not applicable

Self-igniting: Product is not self-igniting but has an oxidizing effect. Firefighting equipment must be available.

Danger of explosion: No explosion danger.

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapour density: Not determined

Density at 20 °C: 2,07 g/cm<sup>3</sup>

Bulk density: Not determined.  
Evaporation rate: Not applicable  
Solubility in / Miscibility with water: Completely soluble. (1378 g/l at 20 °C)  
Partition coefficient (n-Octanol/water): Not applicable  
Viscosity: Not applicable.

**9.2. Other information**

No further relevant information available.

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No further relevant information available.

**10.2. Chemical stability**

Decomposition when heated.  
Hexahydrate loses water of crystallization at 26.4 deg C forming the trihydrate  
Trihydrate loses water of crystallization at 114.5 deg C.

**10.3. Possibility of hazardous reactions**

Risk of explosion in contact with:  
Acetylene, alkyl ester, ammonia/potassium amide, ammonium hexacyanoferrate (heat), potassium hexacyanoferrate(II) (heat)

The substance can react dangerously with:  
Combustible substances, reducing agents, acetic anhydride, tin powder.

**10.4. Conditions to avoid**

Strong heating.

**10.5. Incompatible materials**

Acids

**10.6. Hazardous decomposition products**

Oxygen

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

LD50 oral rat  
Value: 794 mg/kg  
Reference: Indian Journal of Pharmacology. Vol. 23, Pg. 153, 1991.  
Copper nitrate, anhydrous  
Source: 02071

May cause damage to the following organs: blood, kidneys, liver, cardiovascular system, central nervous system (CNS). Hazardous in case of skin contact (irritant)/of ingestion/of inhalation.  
Further information: The product should be handled with the care usual when dealing with chemicals.

**SECTION 12: Ecological information**

**12.1. Toxicity**

LC50 Fish (96 hours)  
Minimum: 0,015 mg/l  
Maximum: 1,4 mg/l  
Median: 0,156 mg/l  
Study number: 41  
Reference for median:  
Cardin, J.A. 1985. Results of Acute Toxicity Tests Conducted with Copper at ERL, Narragansett. Memo to D.Hansen, U.S.EPA, Narragansett, RI: 10 p.

**12.2. Persistence and degradability**

No further relevant information available.

**12.3. Bio-accumulative potential**

Severe hazard to waters. Inform the responsible authorities when only small quantities get into water, drainage, sewer, or the ground.

**12.4. Mobility in soil**

Remark: Do not allow product to reach ground water, water course or sewage system.

**12.5. Results of PBT and vPvB assessment**

Not applicable.

**12.6. Other adverse effects**

No further relevant information available.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Hazardous waste according to Waste Catalogue Ordinance (AVV).

If there is no way of recycling it must be disposed of in compliance with the respective national and local regulations.

Uncleaned packaging:

Recommendation: cleansing may be taken for refuse. Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

**SECTION 14: Transport information**

**14.1. UN number**

ADR, IMDG, IATA: 1477

**14.2. UN proper shipping name**

ADR: 1477 Nitrate, anorganisch, N.A.G. (Kupfer(II)-nitrat)

IMDG, IATA: 1477 Nitrates, inorganic, N.O.S.. (Copper (II) nitrate)

**14.3. Transport hazard class(es)**

ADR:



Klasse: 5.1 Entzündend/oxidierend wirkende Stoffe  
Gefahrzettel: 5.1

IMDG, IATA:



Class: 5.1 Oxidizing Agent

**14.4. Packing group**

ADR, IMDG, IATA: II

**14.5. Environmental hazards**

Marine pollutant: Ja  
Special labelling: fish and tree.

**14.6. Special precautions for user**

Kemler number: 50  
EMS number: F-A S-Q

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

Transport/Additional information:

ADR

Limited quantities: (LQ) LQ 18

Transport category: 2

Tunnel restriction code E

UN "Model Regulation": UN1477, Nitrates, inorganic, N.O.S.. (Copper (II) nitrate), 5.1, II.

**SECTION 15: Regulatory information**

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

National regulations:

Information about limitation of use: Employment restrictions concerning juveniles must be observed.

Water hazard class: Water hazard class 3 (Assessment by list): very hazardous for water.

**15.2. Chemical safety assessment**

A Chemical Safety Assessment has not been carried out.



## **SECTION 16: Other information**

### **16.1. Wording of R und H phrases**

Relevant phrases

(serves as the explanation for only the hazard and risk phrases noted in the MSDS, e.g. in chapter 3)

H272: May intensify fire; oxidiser.

H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

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

### **16.2. Further information**

The information provided in this material safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warrant or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This information shall not constitute a guarantee for any specific product feature and shall not establish a legally valid contractual relationship.