

# METALLI

## SAFETY DATA SHEET – SEN-1260-XXX

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

**Product Identifier**  
**Trade name of designation**  
**of the mixture** **SEN-1260-XXX**

**Description and application of the substance/preparation:**

This MSDS is applicable to all pastes with product codes conforming to the following system:

First segment (binder) – Second segment (alloy) – third segment (%metal code) See **example** below:

**ABC-9999-XXX**

(1) –(2)– (3)



- (1) The first segment (the binder code) consists of three letters or a number and two letters.
- (2) The middle segment (the alloy code) may appear in basic form (no suffix letter), or with of several suffix.
- (3) The last segment (3 characters: first 2 digits % metal of the paste, with last character being A,B,C,D,E,F,G,H,K,S, of T).

**Product category:**

Product type: A braze paste consisting of powdered filler metal and flux suspended in a binder and used for joining metals by heating the part to be joined and this product to or above the melting temperature of the filler metal.

This MSDS applies to products containing 60% metal or greater.

**Details of the supplier of the safety data sheet**

<b>Company name</b>	Metalli A/S Nyholms Allé 46 2610 Rødovre Denmark
<b>E-mail</b>	<a href="mailto:info@metalli.dk">info@metalli.dk</a>
<b>Telephone number</b>	+45 3670 0544

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### 2: Compositional information

#### 2.1 Mixtures

Name	CAS-nr.	Einecs No.		CLP - classificario n	% concentration
Potassium difluorodihydroxyborate(1-)	85392-66-1	286-925-2		Acute tox. (O), Cat. 4; Rep. Tox, Cat. 2; H302; H361+1, H302	<35
C003	-	-		-	-
C901	-	-		-	-
Silver	7440-22-4	231-131-3		Aquatic acute, cat. 1; Aquatic chronic, Cat. 1H400, H410	30-50
Copper	7440-50-8	231-159-6	 	Acute tox. (O), Cat. 4; aquatic acute, Cat. 1; Aquatic chronic Cat. 2; H302; H410	10-20
Zink	7440-66-6	231-175-3	 	aquatic acute, Cat. 1, Aquatic chrnic, Cat. 1 H410	15-20
Nickel	7440-02-0	231-111-4	 	skin sens, cat.1; Car. Cat. 2; STOT RE, Cat. 1; Aquatic chronic, Cat. 3; H317; H351+1; H412	<5.0

See section 16 for H and P- phrases.

### SECTION 3: Hazards Identification

#### 3.1 Hazards identification

#### 3.2 Label Classification according to directive (EC) No 1272/2008 (CLP)



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**Signal word** WARNING

**Hazard statement(s)**

- H302: Harmful if swallowed  
H317: May cause an allergic skin reaction  
H351: Suspected of causing cancer.  
H361: Suspected of damaging fertility or the unborn child.  
H373: May cause damage to organs through prolonged or repeated exposure.  
H410: Very toxic to aquatic life with long lasting effects.

**Precautionary statement(s)**

**Prevention**

- P201: Obtain special instructions before use.  
P202: Do not handle until all safety precautions have been read and understood.  
P260: Do not breathe fumes or vapors.  
P264: Wash exposed skin thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P271: use only outdoors or in a well-ventilated area  
P272: Contaminated work clothing should not be allowed out of the workplace.  
P273: Avoid release to the environment.  
P280: Wear protective gloves, clothing, eye protection and face protection.

**Response**

- P308+P313: If exposed or concerned: Get medical attention.  
P330: Rinse mouth.  
P302+P352: IF ON SKIN: Wash with plenty of soap and water.  
P362+P364: Take off contaminated clothing and wash it before reuse.  
P391: Collect spillage

**Storage**

- P405: Store locked up.

**Disposal**

- P501 Dispose of container in accordance with local, regional and national regulations.

**Immediate concerns**

Warning! Product contains fluorides: In use above 500°C (930°F) in the presence of water vapor, hydrogen fluoride gas is evolved. Hydrogen fluoride gas can cause irritation to the respiratory tract, and delayed burns to the eyes and skin. It can also cause fluid in the lungs (Pulmonary edema), and death. Avoid contact with skin, eyes, and inhalation of vapors. Warning! This product contains: Nickel: May cause skin irritation, dermatitis or sensitization. Prolonged or repeated inhalation may be harmful. Under special conditions nickel can react with carbon monoxide in a reducing atmosphere to form nickel carbonyl Ni [CO]<sub>4</sub>, an extremely toxic gas.

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Fumes from the soldering/brazing process are irritating to the eyes and respiratory system. Hot metal can cause eye and skin burns. Avoid breathing fumes from the soldering/brazing process. Use only with adequate ventilation.

### SECTION 4: First aid measures

- 4.1 Inhalation** Remove victim to fresh air. If not breathing, trained personal may give artificial respiration, if breathing is difficult, give oxygen by trained personnel. Seek medical attention.
- Skin contact** Immediately remove contaminated clothing, watch and jewelry. Do not attempt to remove any material bonded to the skin. Flush area of skin contact immediately with large amounts of water for at least 15 minutes. If irritation persists after flushing, get medical attention promptly. Launder contaminated clothing before reuse.
- Eye contact** Immediately flush eyes with plenty of low-pressure water or eye wash for at least 15 minutes. Liquid should be lukewarm, because cold water can damage the eye. Remove any contact lenses. Keeping the eyes wide open during flushing so that no trapped under them. Get medical attention if irritation persists.
- Ingestion** If swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- 4.2 The important symptoms and effects, both acute and delayed**
- Treat symptomatically. Potassium can reduce blood pressure and cause coma. Fluorides can reduce serum calcium levels resulting in potentially fatal hypocalcaemia. Focus medical efforts on combating shock and reducing systemic toxicity of fluoride ion.

### SECTION 5: Fire fighting measures

- 5.1 Flammable class:** Non-flammable solid
- Extinguishing media:** For fires involving this product, use dry chemical, carbon dioxide, foam, water spray. Do not use water if metal is molten.
- Explosion hazards:** Emits toxic and corrosive fumes under fire condition.
- 5.2 Special hazards arising from the substance or mixture:**
- Decomposition products may include, but are not limited to; carbon oxides (CO, CO<sub>2</sub>), highly corrosive and toxic hydrofluoric acid fumes, smoke fumes.

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Metallic decomposition products may include: toxic metal oxide fumes, copper fumes, zinc oxide fumes, nickel /nickel oxide.

- 5.3 Fire fighting procedures:** Move containers form the fire area if it can be done without risk. Avoid inhalation of vapours mists.
- Fire fighting equipment:** Exposure to decomposition products may be a hazard to health. Do not breathe smoke, gases or vapors generated. Wear goggles if eye protection is not provided. Wash away any material that comes into contact with the body, clothing or equipment. When fighting fires involving this product, wear full protective gear. For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

### SECTION 6: Accidental release measures

- 6.1 General procedures:** Waste disposal method: Scoop up excess material and wash affected areas With soap and water. Avoid contact with skin and eyes.
- Special protective equipment:** Avoid inhaling vapor and/or mists. Do not get spilled material on skin, clothing, or in eyes. Wear full protective clothing. Remove all contaminated clothing.
- 6.2 Environment:** Avoid spillage from entering drains and / or surface water.
- 6.3 Note** See section 8 for protective equipment. See section 13 for more information.

### SECTION 7: Handling and storage

- 7.1 Handling** Keep away from sources of ignition. Wash hands before breaks and after Work.
- 7.2 Storage** Keep lid tightly closed except when removing product and tore at ambient Temperatures of 5-25° Celsius (41-77° Fahrenheit)(to maximize shelf life of Product). Store dry.

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### SECTION: 8 Exposure controls/personal protection

CAS	Chemical name		UK WEL
85392-66-1	Potassium difluorodihydroxyborate (-1)	LTEL (TWA)	2.5 mg/m <sup>3</sup> (Inorganic fluorides, as F)
-	C003	LTEL (TWA)	1200 mg/m <sup>3</sup> (Supplier OEL)
-	C901	LTEL (TWA)	1200 mg/m <sup>3</sup> (HSE guidelines in EH40))
7440-22-4	Silver	LTEL (TWA)	0.1 mg/m <sup>3</sup>
7440-50-8	Copper	LTEL (TWA)	0.2 mg/m <sup>3</sup> (fume as cu) Resoirable Dust - 1 mg/m <sup>3</sup> (dusts & mists, as Cu)
		STEL	2 mg/m <sup>3</sup> (dust & mists, as Cu)
7440-66-6	Zinc	LTEL (TWA)	10 mg/m <sup>3</sup> (zinc oxide fume) (OSHA PEL, no UK WEL applies)
		STEL	10 mg/m <sup>3</sup> (zinc oxide fume) (OSHA PEL, no UK WEL applies)
7440-02-0	Nickel	LTEL (TWA)	0.5 mg/m <sup>3</sup>

**8.1 Engineering controls:**

The use of local ventilation is required to maintain the concentration of fumes evolved from the soldering/ brazing process to well below the occupational exposure limits, within the operator’s breathing zone and the general vicinity. Use of process enclosures, exhaust systems, and other engineering/administrative controls should be designed in accordance with local conditions. Please refer to ACGIH document, industrial ventilation, A manual of recommended practices (most recent edition), for details.

**8.2 Personal protective equipment**

**Eyes and face:**

Wear safety glasses with side shields as a minimum protection. Must conform to EN 166

**Skin:**

Wear chemical resistant gloves. When material is heated, wear thermal-insulated gloves to protect against burns. Change gloves often. Must conform to EN 374.

**Respiratory:**

when exposure limits (listed above) are exceeded or ventilation is inadequate, wear a NIOSH or European standard approved respirator, in accordance with OSHA respirator regulations (29 CFR 1910.134) or European standards (EN 136/140/145). Filter B E P3 EN 14387. Consult ANSI Z88.2 *American National*

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<b>Protective clothing:</b>	<i>standard for Respiratory protection</i> for guidance on proper selection, use and care of respirators. Avoid skin contact. Wear chemical resistant clothing (long-sleeved shirt buttoned at the wrist) as necessary to prevent contact. For soldering/brazing operations where hot metal parts are handled and molten metal may be present, wear heat-resistant gloves and clothing to protect from burns.
<b>Work hygienic practices:</b>	Minimize exposure in accordance with good hygiene practice. Good general hygienic practices include: eating, drinking and smoking should not be permitted in work areas. Wash thoroughly after handling, and before eating, drinking, using tobacco, applying cosmetics, or using the toilet. Keep area clean. Remove contaminated clothing promptly. Launder contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing. Avoid breathing dust, vapour or mist.
<b>Other use precautions:</b>	Educate and train employees in the safe use and handling of this product.

### SECTION 9: Physical and chemical properties

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

<b>Flashpoint and method:</b>	Not applicable
<b>Appearance</b>	Viscous paste.
<b>Odour</b>	Characteristic odour
<b>Color</b>	Brown
<b>Vapour pressure</b>	0.03 kPa at 68° F/20°C (for C901)
<b>Vapour density</b>	>1 (air=1) (for C901)
<b>Boiling point:</b>	>356° F (>180°C) (for C901)
<b>Melting Point</b>	1260 filler metal: 660-707°C (1220-1305°F)
<b>Solubility in water</b>	Negligible
<b>Evaporation rate:</b>	<0.1 (n-butyl acetate=1)(for C901)
<b>Specific gravity:</b>	>2.000 (water=1)

### SECTION 10: Stability and reactivity

<b>10.1 Stability:</b>	Stable under normal conditions of use.
<b>10.2 Polymerization:</b>	Will not occur
<b>10.3 Conditions to avoid:</b>	Avoid contact with incompatible materials. Avoid extreme heat. Avoid prolonged exposure to air and moisture.
<b>10.4 Incompatible materials:</b>	Materials to avoid: Strong reducing agents such as metal hydrides or alkali metals (Reaction with these material may generate hydrogen gas, which could create an explosive hazard), acids(produces HF gas), strong alkalies, oxidizing agents, strong oxidizers, strong acids, alkalies, liquid chlorine, oxygen, acetylene, ammonia, hydrogen peroxide, bromine azide, chlorine trifluoride,

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ethyleneimine, oxalic acid, tartaric acid, nitric acid, sulphuric acid, bromates, strong bases, magnesium, chlorates, iodates, halogens, halogenated hydrocarbons, moisture, interhalogens, sulfur.

### SECTION 11: Toxicological information

#### Acute

Chemical name	ORAL LD <sub>50</sub> (rat)
Copper	152 mg/kg (rat)
Nickel	>9000 mg/kg (rat)

#### Notes:

If excessive quantities of zinc oxide fume are inhaled, it can result in the condition called metal fume fever. The symptoms of metal fume fever will occur within 3 to 10 hours, and include immediate dryness and irritation of the throat, tightness of the chest, and coughing which may later be followed by flu-like symptoms of fever, malaise, perspiration, frontal headache, muscle cramps, low back pain, occasionally blurred vision, nausea, and vomiting. There are no recognized complications, after effects, or chronic effect that from this condition.

#### Eye effects:

can cause severe irritation and abrasion. (Contains metal powder and fluoride salts.)

#### Skin effects:

May cause severe irritation.

#### Chronic:

The fluoride ion can reduce calcium levels, possibly causing fatal decalcification of the bones.

**Zinc:** There is no chronic form of metal fume fever but in rare instances an acute incident may be followed by complaints such as bronchitis or pneumonia. Some workers may develop a short-term immunity (resistance) so that repeated exposure to zinc oxide fumes does not cause metal fume fever. This immunity (resistance) however is quickly lost after short absences from work (weekends or vacations). Workers exposed to finely divide metallic zinc for up to 35 years revealed no acute or chronic illnesses attributable to zinc.

**Nickel:** Repeated or prolonged contact may cause skin sensitization dermatitis, termed 'nickel itch'. Repeated or prolonged inhalation of dust or fumes may cause occupational asthma, may cause inflammation and/or ulceration of the respiratory tract. Airborne nickel-containing dusts are considered as carcinogenic to the nasal passages and respiratory tract.



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### Carcinogenicity

Chemical Name	NTP status	IARC status	OSHA status	Other	General Toxicity
Nickel	NTP: Reasonably anticipated to be a human carcinogen.	Metallic nickel: IARC group 2B listed- ‘possible human carcinogen’ Nickel compounds: IARC group 1 listed ‘proven human carcinogen’	NIOSH Listed as a ‘possible occupational carcinogen’ OSHA listed as a select carcinogen’ U.S. EPA group ‘A- human carcinogen	ACGIH: Group A5- ‘not suspected to be a human carcinogen’	EU Carc. Cat. 3: Substances which cause concern for man owing to possible carcinogenic effects, insufficient evidence for cat. 2

### SECTION 12: Ecological information

**Distribution:** Ecological information on this product and its ingredients is not known.

### SECTION 13: Disposal considerations

- 13.1 Disposal method:** Dispose of in according with EC, national and local regulations, or sell to refiner.
- 13.2 Product disposal:** Disposal of waste material from the use of this product may be subject to federal, state and local regulations. Waste characterizations and compliance with applicable laws are the sole responsibility of the waste generator. Reclaimed scrap metal has monetary value. Contact a commercial reclaimer for information on recycling scrap metals. All recovered material should be packaged, labeled, transported and disposed or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices.
- 13.3 Empty container:** Do not reuse empty containers. Dispose of empty container in accordance with EC, national and local regulations.

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### SECTION 14: Transport information

#### Land transport ADR/RID (cross-border)

ADR/RID Class	Not restricted for transport
UN number	Not restricted for transport
UN proper shipping name	-
Transport hazard class(es)	-
Packing group	-
Environmental hazards	Not applicable
Tunnel restriction code	-
Labels required	-
Special precautions for user	-

#### Maritime transport IMDG

IMDG Class	Not restricted for transport
UN number	Not restricted for transport
UN proper shipping name	-
Transport hazard class(es)	-
Packing group	-
Environmental hazards	Not applicable
Marine pollutant	No
Labels required	-
Tunnel restriction code	-

#### Air transport ICAO-TI and IATA-DGR

ICAO/IATA Class	Not restricted for transport
UN/ID number	Not restricted for transport
Label	-
Packing group	-
Proper shipping name	-

### SECTION 15: Regulatory information

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- 15.1** Regulations / legislation specific for the substance or mixture reach the Safety, Health and Environment.  
**15.2** Chemical Safety: Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

#### Relevant H-Phrases (for hazardous ingredients)

Acute Tox. (O), Cat. 4: Acute Toxicity (Oral), category 4  
Aquatic acute, Cat. 1: Acute Hazards to the Aquatic Environment, Category 1  
Aquatic Chronic, Cat. 1: Chronic Hazards to the Aquatic Environment, Category 1  
Aquatic Chronic, Cat. 1: Chronic Hazards to the Aquatic Environment, Category 2  
Aquatic Chronic, Cat. 1: Chronic Hazards to the Aquatic Environment, Category 3  
Carc., Cat. 2; Carcinogenicity, Category 2  
Rep. Tox. , Cat. 2; Reproductive Toxicity, Category 2  
STOT RE, Cat. 1: Target organ Toxicity (Repeated exposure), Category 1  
Skin sens., Cat. 1: Skin Sensitization, Category 1  
H302: Harmful if swallowed  
H317: May cause an allergic skin reaction.  
H351-1: Suspected of causing cancer.  
H361-1: Suspected of damaging fertility or the unborn child.  
H372-1: Causes damage to organs through prolonged or repeated exposure.  
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.

**Education: A prerequisite is to have a thorough knowledge of this safety.**