THE FEDERAL METAL CO.

*Meets the Requirements of OSHA Standard 29 CFR 1910.1200 Hazard Communication and EPA Supplier Notification Requirements under Section 313 of the Emergency Planning and Community Right-to-Know Act.*

**SAFETY DATA SHEET (SDS)**

# YELLOW and LEADED YELLOW BRASS ALLOY CASTINGS

## (Cu-Zn & Cu-Zn-Pb Alloys)

**SDS SC-000-021 Rev 12**

**DATE ISSUED**

**01/15**

## SECTION 1—PRODUCT IDENTIFICATION & COMPANY INFORMATION

**PRODUCT NAME**

**YELLOW and LEADED YELLOW BRASS ALLOY CASTINGS (Cu-Zn & Cu-Zn-Pb Alloys)**

**OTHER DESIGNATIONS**: Copper Alloy Specification No's Unified Numbering System (UNS)

**UNS ALLOY DESIGNATIONS:**

C85200 C85700
C85400 C85800
C85500

**PRODUCT IDENTIFICATION (Label Identifier)**

X85...

| | |
|---|---|
| **MANUFACTURER'S NAME**<br>The Federal Metal Co. | **STREET ADDRESS**<br>7250 Division Street |
| **EMERGENCY TELEPHONE NO.**<br>440-232-8700 | **MAILING ADDRESS**<br>7250 Division Street |
| **TELEPHONE NO.**<br>440-232-8700 | **CITY, STATE, ZIP CODE, COUNTRY**<br>Bedford, Ohio, 44146, U.S.A. |
| **FAX NO.**<br>440-232-8726 | **E-MAIL ADDRESS/WEBSITE**<br>www.FederalMetal.com |

**RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE**

Solid casting; no restrictions

## SECTION 2—HAZARD IDENTIFICATION

**CLASSIFICATION**

Castings are metallic articles that do not present hazards in their original form.

**OTHER INFORMATION**

1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.
2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 for further information.

## SECTION 3—COMPOSITION/INFORMATION ON INGREDIENTS

| CHEMICAL NAME/COMMON NAME/SYNONYM | Wt % | CAS NUMBER |
|---|---|---|
| Cobalt (Co) Metal | <0.1–1.0 | 7440-48-4 |
| Copper (Cu) Metal | 57.0–75.0 | 7440-50-8 |
| Lead (Pb) Metal | 0.20–3.8 | 7439-92-1 |
| Nickel (Ni) Metal | <0.1–1.0 | 7440-02-0 |
| Tin (Sn) Metal | 0.5–2.0 | 7440-31-5 |
| Zinc (Zn) Metal | 20.0–41.0 | 7440-66-6 |

## SECTION 4—FIRST AID MEASURES

**EYE CONTACT:** Not applicable

**SKIN CONTACT:** No special requirements

**INGESTION:** Not applicable

**INHALATION:** Not applicable

## SECTION 5—FIREFIGHTING MEASURES

**FLAMMABLE PROPERTIES:** Not applicable

**EXTINGUISHING MEDIA:** Not applicable

**PROTECTION OF FIREFIGHTERS:** Not applicable

## SECTION 6—ACCIDENTAL RELEASE MEASURES

Not applicable

## SECTION 7—HANDLING & STORAGE

**RECOMMENDED STORAGE**

No special requirements

**PROCEDURES FOR HANDLING**

Proper hand and foot protection is recommended.

## SECTION 8—EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS**

None Required. There are no health hazards from castings in solid form.

| SUBSTANCE | ACGIH TLV mg/m$^3$ | OSHA PEL mg/m$^3$ |
|---|---|---|
| Cobalt (Co) Metal | 0.02 | 0.1 |
| Copper (Cu) Metal | 1 | 1 |
| Lead (Pb) Metal | 0.5 | 30µg/m$^3$ AL<br>50µg/m$^3$ PEL<br>(See 29CFR1910.1025) |
| Nickel (Ni) Metal | 1.5 (I) | 1 |
| Tin (Sn) Metal | 2 | 2 |
| Zinc (Zn) Metal | N/E | N/E |

**SUPPLEMENTAL INFORMATION**

Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.

Fumes from hot processes may contain other compounds with different exposure limits than those listed herein.

Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Exposure limits for the most common contaminants are offered as reference. Please consult a competent person for guidance on exposure assessment and controls.

| SUBSTANCE | ACGIH TLV mg/m$^3$ | OSHA PEL mg/m$^3$ |
|---|---|---|
| Cobalt (Co) Metal | | |
| Metal Dust and Fume | N/E | 0.1 |
| Elemental and Inorganic Compounds | 0.02 | N/E |

| | | |
|---|---|---|
| Copper Compounds<br>Fume (Cu)<br>Dusts and Mists (Cu) | <br>0.2<br>1 | <br>0.1<br>1 |
| Lead Compounds<br>Inorganic Compounds (Pb) | <br>0.05 | <br>30µg/m³ AL<br>50µg/m³ PEL<br>(See 29CFR 1910.1025) |
| Nickel Compounds (Ni)<br>Insoluble, Inorganic Compounds<br>Soluble, Inorganic Compounds<br>Nickel Oxide | <br>0.2 (I)<br>0.1 (I)<br>0.2 (I) | <br>1<br>1<br>1 |
| Tin Oxide (Sn) | 2 | N/E |
| Zinc Compounds (Zn)<br>Zinc Oxide Total Dust<br>Zinc Oxide Respirable Dust<br>Zinc Oxide Fume | <br>N/E<br>2 / 10 STEL<br>N/E | <br>15<br>5<br>5 |

**TERMS**

All exposure limits referenced above are 8 hour time weighted averages (TWA) unless otherwise noted.

N/E = None Established
C = Ceiling
I = Inhalable fraction
R = Respirable fraction
STEL = Short Term Exposure Limit
TLV = Threshold Limit Value/American Conference of Governmental Industrial Hygienists (ACGIH)
PEL = Permissible Exposure Limit / OSHA
AL = Action Level / OSHA
mg/m³ = milligrams per cubic meter
µg/m³ = micrograms per cubic meter

**PERSONAL PROTECTION**

Proper hand and foot protection is recommended.

## SECTION 9—PHYSICAL & CHEMICAL PROPERTIES

**APPEARANCE/PHYSICAL STATE**

Solid, Orange-red in color

| | |
|---|---|
| **ODOR/ODOR THRESHOLD**<br>None | **VAPOR DENSITY**<br>Not applicable |
| **MELTING POINT/FREEZING POINT**<br>Approximately 1085°C (1984°F) for copper<br>Melting point of copper-zinc alloy (20-41% zinc) is approximately 900-1000°C (1652-1832°F) | **SPECIFIC GRAVITY (relative density)**<br>8.96 g/cm³ for copper (water = 1) |
| **BOILING POINT**<br>2562°C (4644°F) for copper | **VAPOR PRESSURE**<br>Not applicable |
| **FLASH POINT**<br>Not applicable for solid castings | **EVAPORATION RATE**<br>Not applicable |
| **FLAMMABILITY**<br>Not flammable for castings in solid form | **SOLUBILITY IN WATER**<br>Insoluble |
| **UPPER AND LOWER FLAMMABILITY LIMITS**<br>Not applicable for castings in solid form | **pH**<br>Not applicable |

| AUTO IGNITION TEMPERATURE<br>Not applicable | VISCOSITY<br>Not applicable |
|---|---|
| DECOMPOSITION TEMPERATURE<br>Not applicable | PARTITION COEFFICIENT<br>Not applicable |

## SECTION 10—STABILITY & REACTIVITY

**CHEMICAL STABILITY:** Castings in solid form are stable.

**CONDITIONS TO AVOID:** None

| REACTIVITY: Not reactive | INCOMPATIBLE MATERIALS: None |
|---|---|
| HAZARDOUS DECOMPOSITION PRODUCTS<br>None | HAZARDOUS POLYMERIZATION<br>Not applicable |

## SECTION 11—TOXICOLOGICAL INFORMATION

**POTENTIAL HEALTH EFFECTS**

| | |
|---|---|
| **EYE CONTACT:** | None |
| **SKIN:** | None |
| **INGESTION:** | None |
| **INHALATION:** | None |

**Carcinogen Classification of Ingredients**

| INGREDIENT | OSHA | NTP | IARC | TARGET ORGAN(S) |
|---|---|---|---|---|
| Cobalt and Compounds | NL | NL- | 2B | Lung |
| Lead and Inorganic Compounds | NL | R | 2A | Lung, Stomach, Liver, Kidney |
| Nickel Metal | NL | K | 2B | Lung, Nasal passages |

**TERMS**

**OSHA—Occupational Safety & Health Administration**
Y = Listed as a Human Carcinogen

**NTP—National Toxicology Program**
K = Known to be a Human Carcinogen
R = Reasonably Anticipated to be a Human Carcinogen (RAHC)

**IARC—International Agency for Research on Cancer**
1 = Carcinogenic to Humans
2A = Probably Carcinogenic to Humans
2B = Possibly Carcinogenic to Humans
3 = Unclassifiable as to Carcinogenicity in Humans
4 = Probably not Carcinogenic to Humans

**Other** NL = Not Listed

## SECTION 12—ECOLOGICAL INFORMATION

| ECOTOXICITY<br>Not applicable | PERSISTENCE AND DEGRADABILITY<br>Not applicable |
|---|---|
| BIOACCUMULATION POTENTIAL<br>Not applicable | MOBILITY IN SOIL<br>Not applicable |

**OTHER ADVERSE EFFECTS**
Not applicable

## SECTION 13—DISPOSAL CONSIDERATIONS

Recover or recycle if possible. Dispose of according to federal, state and local regulations. Dust collected from machining, welding, etc. may be classified as a hazardous waste. Consult federal, state and local regulations.

## SECTION 14—TRANSPORT INFORMATION

| US DEPARTMENT OF TRANSPORTATION (DOT)-HMR (Hazardous Materials Registration)<br>Not Regulated | CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG)<br>Not regulated |
|---|---|

| UN SHIPPING NAME | UN NUMBER |
|---|---|
| Not regulated | Not regulated |
| **TRANSPORT HAZARD CLASS** | **PACKING GROUP** |
| Not regulated | Not regulated |
| **ENVIRONMENTAL HAZARDS** | **LABEL(S) REQUIRED?** |
| None | No |
| **TRANSPORT IN BULK** | **SPECIAL SHIPPING INFORMATION** |
| Not applicable | Not applicable |

## SECTION 15—REGULATORY INFORMATION

**US-OSHA (Hazard Communication Standard)**

References: 29 CFR 1910.1200 Hazard Communication Standard
A finished casting is an article as defined in 29CFR 1910.1200 (c)
29 CFR 1910.1000 Air Contaminants
29CFR1910.1025 Lead

Dust or fumes generated by cleaning, machining, grinding, or welding of the casting may produce airborne contaminants, such as cobalt, copper, lead, nickel, tin, zinc and silica.

**US-EPA (Toxic Substances Control Act–TSCA)**

All components of these products are on the TSCA inventory list or are excluded from listing.

**US-EPA (SARA Title III)**

Releases to the environment of **Cobalt, Copper, Lead, Nickel, and Zinc (fume or dust)** may be subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

**CANADA-WHMIS (Workplace Hazardous Materials Information System)**

This SDS has been prepared according to the hazard criteria of the Controlled Product Regulations (CPR) and the SDS contains the information required by the CPR.

**CANADA DSL (Domestic Substances List) Inventory Status**

All components of these products are on the DSL Inventory.

**CEPA (Canadian Environmental Protection Act)**

Lead is on the Toxic Substances List.

**EINECS No. (European Inventory of Existing Commercial Chemical Substances)**

All components of these products are on the EINECS list.

**RoHS (Restriction of Certain Hazardous Substances) Compliance**

Castings comply with RoHS

**CALIFORNIA PROPOSITION 65 Compliance**

WARNING: This product contains or produces chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code 25248.5 et seq.)

**US STATE REGULATORY INFORMATION**

Some of the components listed in Section 3 may be covered under specific state regulations.

## SECTION 16—OTHER INFORMATION

| SDS PREPARED BY | DATE |
|---|---|
| American Foundry Society, Inc.<br>Occupational Safety & Health Committee (10-Q) | **01/15** |

**NOTE**

This data and label information is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if they are appropriate.

Addendum: Label Information

**PRODUCT IDENTIFIER**

SC-000-021 Rev 12

YELLOW and LEADED YELLOW BRASS ALLOY CASTINGS

(Cu-Zn & Cu-Zn-Pb Alloys)

**SUPPLIER IDENTIFICATION**

Company Name The Federal Metal Co.

Street Address 7250 Division Street

Mailing Address 7250 Division Street

City Bedford State OH

Zip/Postal Code 44146 Country U.S.A.

Emergency Phone Number 440-232-8700

Other Info

**HAZARD PICTOGRAMS**

None*

**SIGNAL WORD**

None*

**PRECAUTIONARY STATEMENTS**

None*

**HAZARD STATEMENTS**

None*

*Castings do not present hazards in their original form.

**OTHER INFORMATION**

1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.
2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 of the SDS for further information.