

SAFETY DATA SHEET

SECTION 1. Identification of the Substance and Manufacturer

Product: **Infiltrating Powder, XF-2**

Common uses: Infiltration of powder metal parts

Manufacturer: Royal Metal Powders, Inc.
433 Continental Drive
Maryville, TN 37804 U.S.A.
+1(865) 982-8096 (Phone) +1(865) 977-8068 (Fax)

24-Hour Emergency: 3E Company

Royal Metal Powders, Inc./3E Company **Global Incident Response Access Code: 334129**
Royal Metal Powders, Inc./3E Company **Contract Number 14862**

Americas	Europe	Asia Pacific	Middle East/Africa
1-866-519-4752 (US, Canada, Mexico) or 1-760-476-3962	1-760-476-3961	1-760-476-3960	1-760-476-3959

For country-specific phone numbers, see Section 16.

Local Contact, (if applicable):

SECTION 2. Hazard Identification

Classification System:

The classification is based on the criteria in the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

GHS Label Elements



Warning

4.1/1 – Very toxic to aquatic life

Prevention:

Avoid release to the environment.

Collect spillage.

Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3. Composition/Information of Ingredients

Ingredient	%	EC Number	CAS No.	R Phrases
Copper	92-97	231-159-6	7440-50-8	R50
Zinc	1-7	231-175-3	7440-66-6	
Iron	1-2	231-096-4	7439-89-6	
Lubricant	=/≤ 0.5	Various		

SECTION 4. First Aid Measures

INHALATION: Remove to fresh air. Lay patient down. Cover with blanket.

INGESTION: Give 200-300 mL water to drink. DO NOT induce vomiting.

SKIN CONTACT: For skin exposure, remove contaminated clothing and wash with soap and water.

EYE CONTACT: If irritated, flush eyes and skin with large volumes of fresh water for 15 minutes.

MEDICAL NOTES: If any adverse symptoms persist seek immediate medical attention.

SECTION 5. Fire-Fighting Measures

Extinguishing Media: CO₂, ABC extinguisher, or water spray.

Special Fire Fighting Procedures: Material is non-flammable. Use firefighting measures appropriate to surrounding materials.

Additional Information: Collect contaminated fire fighting water separately.
It must not enter the sewer system.

Personal Protective Equipment: Wear self-contained breathing apparatus.



SECTION 6. Accidental Release Measures

Personal Precautions:	Spilled material may produce dust hazard if not handled correctly. Wear appropriate personal protective equipment: coveralls, gloves & eye protection.
Environmental Precautions:	Do not allow to enter drains or watercourses. If the product enters drains or sewers, immediately inform the local water company. Where there is contamination of streams, rivers or lakes, contact local agency with responsibility for the environment.
Methods for Clean Up:	Contain spillages and clean up with vacuum or conventional tools and attempt to minimize dusting. Place in a suitable container for recycling or disposal in accordance with local and national waste regulations.

SECTION 7. Handling and Storage

Handling:	Only use in a well-ventilated area and prevent the creation of dusts. If concentrations exceed the occupational exposure limits, use suitable respiratory protection.
Storage:	Store in a cool, dry, well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep lids of container tightly sealed.
Common uses:	Powder metal parts, Industrial chemicals

SECTION 8. Exposure Controls/Personal Protection

Occupational Exposure Standards:	8-hour TWA <ol style="list-style-type: none">1. Copper Powder as dust and mist OSHA PEL: 1 mg/m³ ACGIH TLV: 1 mg/m³2. Zinc Powder (Zinc Oxide Dust) OSHA PEL: 15 mg/m³ ACGIH TLV: 2 mg/m³3. Iron Powder (Iron Oxide Fume) OSHA PEL: 10 mg/m³ ACGIH TLV: 5 mg/m³
Occupational Exposure Controls:	All personal protective equipment, including respiratory equipment, used to control exposure to hazardous substances must be selected to meet the requirements of national personal protective equipment regulations.
Ventilation:	To keep below the U.S.A. OSHA and EU exposure limits, use general dilution type ventilation.
Personal Protection Respiratory Protection:	Cartridge type particulate filter respirator or dust-mask conforming to U.S.A. NIOSH. Refer to Respiratory Protective Devices approved by NIOSH under 42 CFR 84 and the appropriate European standard.
 Hand Protection:	Wear if skin contact is probable and skin is sensitive.
 Eye Protection:	Safety glasses or goggles.
Skin Protection:	Long sleeve shirt(s) if contact is probable and skin is sensitive.
Environmental Protection:	Do not allow to enter drains or watercourses.

SECTION 9. Physical and Chemical Properties

Appearance:	Yellowish to Tan Color	Odor:	None
	Copper	Zinc	Iron
Boiling Point:	2567°C	907°C	2750°C
Melting Point:	1083°C	420°C	1535°C
Specific Gravity:	8.94	7.14	7.86
Vapor Pressure:	NA	NA	NA
Vapor Density:	NA	NA	NA
Evaporation Rate:	NA	NA	NA
Solubility in water:	Insoluble	Insoluble	Insoluble
Volatile by Volume, %:	0	0	0
Molecular Weight:	63.54	65.37	55.85

SECTION 10. Stability and Reactivity

Stable X Unstable

Conditions & Materials to Avoid:

- Temperatures above 100 °C while in the presence of moist air.

Hazardous Decomposition Products: Metal fumes will be released if heated above the elements melting point

Hazardous Polymerization: Will Not Occur

SECTION 11. Toxicological Information

Skin Irritation: Not classified as a skin irritant
Eye Irritation: Not classified as an eye irritant
Sensitization: Not classified as a dermal sensitizer

1. Copper powder inhalation may cause metal fume fever, metallic taste, hemolysis of the red blood cells and injury to the liver, lungs, kidneys and pancreas. Ingestion vomiting, gastric pain, dizziness cramps and convulsions
2. Zinc metal fume fever results when zinc is exposed to extremely high temperatures. Effects include dry throat, metallic taste, chest pain, dyspnea, rales and dry cough. Several hours later, chills or perspiration may occur with malaise, fatigue headache, back pain, muscles cramps, blurred vision, nausea, fever, vomiting and leukocytosis.
3. Iron may cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath. Overexposure to iron may cause vomiting, abdominal pain, bloody diarrhea, lethargy and shock.

SECTION 12. Ecological Information

Toxic to fish and other aquatic organisms.
Prevent from entering drains, sewers, and surface water.

SECTION 13. Disposal Considerations

PACKAGING: Dispose of in accordance with procedures applying to the disposal of the product.
PRODUCT: Dispose of surplus and contaminated materials (including sawdust) at an approved landfill or in accordance with other national or regional provisions.

SECTION 14. Transportation Information

US DOT: Not Regulated. Class 9 materials do not require placarding for U.S.A. ground transport.

Proper Shipping Name: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(copper powder), Class 9, PG III, MARINE POLLUTANT

. Land transport ADR/RID (cross-border) Excluding U.S.A. Ground Transport



- **ADR/RID class:** 9 (M7) Miscellaneous dangerous substances and articles
- **Danger code (Kemler):** 90
- **UN Number:** 3077
- **Packaging group:** III
- **Hazard label:** 9
- **Proper shipping name:** 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper powder)
- **Tunnel Restriction Code:** E

. Maritime transport IMDG:



- **IMDG Class:** 9
- **UN Number:** 3077
- **Hazard Label:** 9
- **Packaging group:** III
- **Marine pollutant:** yes
- **Proper shipping name:** 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper powder)

. Air transport ICAO-TI and IATA-DGR:



- **ICAO/IATA Class:** 9
- **UN/ID Number:** 3077
- **Hazard Label:** 9
- **Packaging group:** III
- **Proper shipping name:** 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper powder)

SECTION 15. Regulatory Information

U.S. EPA EPCRA Section 313 Reportable Product – (contains copper, zinc and manganese)
U.S. EPA Reportable Quantity: 5,000 lbs. (2,270 kg)

Hazard Symbols:

N: Dangerous for the environment

GHS Hazard Statements:

H410 – Very toxic to aquatic life.

GHS Precautionary Statements:

P273 – Avoid release to the environment.

P391 – Collect spillage.

P501 – Dispose of contents/container in accordance with local/national/international regulations.

SECTION 16. Other Information

Keep out of reach of children. Read and follow all label instructions. This information is based on our present knowledge. However, this is not a guarantee of specific product features. It is the user's responsibility to satisfy themselves as to the suitability and completeness of this information for their own particular use.

Country Specific 24-Hour Emergency Phone Numbers: 3E Company

Royal Metal Powders, Inc./3E Company **Global Incident Response Access Code: 334129**

Royal Metal Powders, Inc./3E Company **Contract Number 14862**

Country	Number	Languages
Australia	+ 61 1 800 686 951	English
China	+86 4001 2001 74	Chinese
New Zealand	+64 800 451719	English
United Kingdom	+44 8 08 189 0979	English