

I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product/Trade Name: **IF-1 Infiltrant**
Chemical Family: Metal Alloy
Product Use: Infiltrant for use with steel alloy

Hazardous Materials Identification System (HMIS):

(Degree of hazard: 0 = low, 4 = extreme);

Health **1**
Flammability **0**
Physical Hazards **0**

Personal Protection:

Dust mask, skin, eye protection

Manufacturer:



| | |
|----------------------|--|
| Manufacturer Contact | 3D Systems GmbH Guerickeweg 9 Darmstadt, Germany |
| For Information | Phone: +49 (0) 6151 357-357 Fax: +49 (0) 6151 357-111 |
| Emergency | 703.527.3887 - Chemtrec (U.S.) |

II. COMPOSITION INFORMATION

| EC # | Component | Classification | Percent |
|-----------|-------------------------|----------------|---------|
| 231-159-6 | Copper (CAS# 7440-50-8) | - | 80 - 90 |
| 231-141-8 | Tin (CAS# 7440-31-5) | - | 10 - 20 |

General Product Information

This substance is not classified according to European Union Directive 67/548/EEC.

III. HAZARDS IDENTIFICATION

Emergency Overview

Exposure to dust or fumes can cause eye and respiratory tract irritation.

Potential Health Effects:

- Eyes: This product's dust or fumes can cause eye irritation. Symptoms include discomfort, itching and redness after contact.
- Skin: This product's dust or fumes can cause skin irritation. Symptoms include reversible redness, itching and/or pain.
- Ingestion: Ingestion of large amounts can cause gastrointestinal irritation, vomiting, diarrhea and/or nausea.
- Inhalation: Inhalation of high concentrations of dust, or fumes may cause respiratory and nasal irritation, coughing, and difficulty breathing. Inhalation of high concentrations of metallic copper dusts or fumes may cause nasal irritation and/or nausea, vomiting and stomach pain. Inhalation of fumes when the product is heated can cause metal fume fever with resulting flu-like symptoms.
- Chronic: Prolonged or repeated inhalation of dust or fumes may cause more severe irritation and possibly lung damage.

Medical Conditions Aggravated by Exposure

Could irritate an existing respiratory condition.



PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face: Wear goggles if dust generation is likely.
Skin: Wear apron if dust generation is likely.
Respiratory: If ventilation cannot effectively keep dust and fume concentrations below established limits, appropriate certified respiratory protection must be provided.
General: An eye wash fountain is recommended.

IX. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------------------------|---------------------|------------------------------|------|
| Appearance | Bronze-colored bars | Odor | None |
| Physical State..... | Solid | PH..... | NA |
| Vapour Pressure | NA | Vapour Density | NA |
| Boiling Point | NA | Melting/Freezing Point | NA |
| Solubility (H ₂ O) | insoluble @ 20 °C | Specific Gravity | NA |
| Percent Volatile | <1% | Molecular Weight | NA |

X. CHEMICAL STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of handling, use and transportation.
Conditions to Avoid: Avoid incompatible materials.
Incompatibility: Acetylene, chlorine.
Hazardous Decomposition: Metal fumes and oxides.
Hazardous Polymerization: Will not occur.

XI. TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

A: General Product Information: No data available.

B: Component Analysis

| Component | LD ₅₀ Oral | LD ₅₀ Dermal |
|-----------|------------------------------------|----------------------------------|
| Copper | 3.5 mg/Kg (mouse, intraperitoneal) | 375 mg/Kg (rabbit, subcutaneous) |

Copper: Melting, grinding, cutting of copper may produce fumes or dust exposure and breathing these fumes or dust may present potentially significant health hazards. Fumes of copper may cause metal fume fever with flu-like symptoms and skin and hair discoloration. While industrial dermatitis has not been reported, keratinization of the hands and the soles of the feet have been reported. Copper dust and fumes cause irritation of the upper respiratory tract, metallic taste in the mouth, and nausea.

Tin: The inhalation of inorganic tin fumes or dust may cause an apparent benign pneumoconiosis called stannosis, which is not reported to be disabling.

Carcinogenicity

A: General Product Information: This product is not listed by IARC.

B: Component Analysis: None of this product's components are listed by IARC.

XII. ECOLOGICAL INFORMATION

Ecotoxicity

A: General Product Information: This product is not expected to be dangerous to the environment.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity:

Copper: The toxicity of copper to aquatic organisms varies significantly not only with the species, but also with the physical and chemical characteristics of the water, such as its temperature, hardness, turbidity and carbon dioxide content. Copper concentrations varying from 0.1 to 1.0 mg/l have been found by various investigators to be non-toxic for most fish. However, concentrations of 0.015 to 3.0 mg/l have been reported as toxic, particularly in soft water, to many kinds of fish, crustaceans, mollusks, insects, and plankton.

Mobility – No information available for product.

Persistence & Degradation – No information available for product.

Bioaccumulation – No information available for product.

Other Adverse Effects – No information available for product.

Environmental Fate: No information available for product.

XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Instructions

Avoid disposal. Attempt to utilize preparation completely. Prior to disposal of unused preparation, consult an approved waste disposal operative to ensure regulatory compliance.

XIV. TRANSPORT INFORMATION

| | US DOT | RID/ADR | IMDG | IATA | IMO | Canada TDG |
|----------------|---------------|---------|------|------|-----|------------|
| Shipping Name | Not Regulated | | | | | |
| Hazard Class: | | | | | | |
| UN Number: | | | | | | |
| Packing Group: | | | | | | |

XV. REGULATORY INFORMATION

European Union Regulatory Information

General Product Information: This substance is not classified according to European Union Directive 67/548/EEC

- S22 Do not breathe dust.
- S23 Do not breathe fumes.
- S25 Avoid contact with eyes.
- S36/37 Wear suitable protective clothing and gloves.

Component Analysis - Inventory

| Component/CAS | EC # | EEC | CAN | TSCA | NLP |
|-------------------------|-----------|--------|-----|------|-----|
| Copper (CAS# 7440-50-8) | 231-159-6 | EINECS | DSL | Yes | No |
| Tin (CAS# 7440-31-5) | 231-141-8 | EINECS | DSL | Yes | No |

XVI. ADDITIONAL INFORMATION

Full text of all Risk Phrases in Sections 2 & 3

None listed.

MSDS Creation Date: 25.01.06

MSDS Revision #: n/a

MSDS Revision Date:..... n/a

Reason for Revision: n/a

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Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists

CAS = Chemical Abstracts Service

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

CPR = Controlled Products Regulations

DOT = Department of Transportation

DSL = Domestic Substances List

EINECS = European Inventory of Existing Commercial Chemical Substances

EPA = Environmental Protection Agency

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IDL = Ingredients Disclosure List

mg/Kg = milligrams per Kilogram

mg/L = milligrams per Liter

mg/m³ = milligrams per Cubic Meter

MSHA = Mine Safety and Health Administration

NA = Not Applicable or Not Available

NIOSH = National Institute for Occupational Safety and Health

NJTSSR = New Jersey Trade Secret Registry

NTP = National Toxicology Program

OSHA = Occupational Safety and Health Administration

SARA = Superfund Amendments and Reauthorization Act

STEL = Short Term Exposure Limit

TDG = Transport Dangerous Goods

TSCA = Toxic Substances Control Act

WHMIS = Workplace Hazardous Materials Information System.