

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Brass

General Use: To make brass photoengraving dies.

Company: UEI™ Systems, A Division of Universal Engraving, Inc.
 9090 Nieman Road Overland Park, KS, USA 66214
 1-800-821-8864 or 913-599-0244

EMERGENCY CONTACT: 1-800-424-9300 United States and Canada
 703-527-3887 International

2. COMPOSITION/INFORMATION ON INGREDIENTS

	CAS #	%
Copper	7440-50-8	60-70%
Zinc	7440-66-6	30-40
Tin	7440-31-5	<1
Lead	7439-92-1	<4

3. HAZARDS IDENTIFICATION

Sheet of gold-colored metal. Dust from brass presents a lead contamination hazard.

4. FIRST AID MEASURES

In case of dust exposure:

Inhalation: In case of discomfort remove to a ventilated area. Consult a physician.

Skin Contact: Wash skin thoroughly with soap and water.

Eye Contact: Flush eyes thoroughly with water taking care to rinse under the eyelids. If irritation persists continue for 15 minutes, rinsing occasionally under the eyelids. If discomfort continues consult a physician.

Ingestion: Not Applicable

5. FIRE FIGHTING MEASURES

The product in the solid state presents no fire or explosion hazard.

6. ACCIDENTAL RELEASE MEASURES

Not Applicable

7. HANDLING AND STORAGE

No special handling precautions. Store in a dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Use in a well-ventilated area and maintain exposure below suggested limits.

Exposure Limits:	OSHA PEL	ACGIH TLV
Copper Fumes	0.1 mg/m3	0.2 mg/m3
Copper Dust	1.0	1.0
Tin	2.0	2.0
Zinc Oxide Fumes	5.0	5.0
Zinc Oxide Dust	15	10
Lead Inorganic (Dust and fumes)	0.05	0.15

9. PHYSICAL AND CHEMICAL PROPERTIES

pH: NA	Flashpoint: NA
Boiling Point: NA	Auto-ignition: NA
Melting Point: >1600 deg. C (brass)	Lower Flammable limit: NA
Vapor Pressure: NA	Higher Flammable Limit: NA
Vapor Density (Air = 1): NA	Explosive Properties: NA
Evaporation Rate: NA	Odor Threshold: NA
Relative Density (Water = 1): >8	Oxidizing Properties: NA
Water Solubility: NA	Partition Coefficient (n-octanol/water): NA

MATERIAL SAFETY DATA SHEET FOR BRASS CONTINUED:

1 of 2

10. STABILITY AND REACTIVITY

Stability: Stable

Conditions and Material to Avoid: Mercury, ammonia, acetylene, acids, bases, and oxidizing agents.

Hazardous Decomposition Products: Metallic dust or fumes may be produced during welding, burning, grinding, and machining.

11. TOXICOLOGICAL INFORMATION

Route of Exposure: Inhalation

Acute Effects:

Inhalation: Irritation of the respiratory tract. High concentrations of freshly-formed copper oxide and fumes can produce symptoms of metal fume fever. The principal symptoms are muscular aches, fever, chills, nausea, vomiting, and weakness.

Chronic Effects:

Dust from this product may contain lead. Lead compounds bioaccumulate. The most frequent chronic effects are anemia and kidney and central nervous damage. Medical surveillance should be undertaken to prevent high blood lead levels. Inhalation of lead oxide fumes can cause abdominal pains, constipation, headaches, weakness, muscle pain, loss of appetite, nausea, and vomiting.

Medical Conditions Aggravated by Exposure to the Product: Not determined.

Carcinogenicity/Mutagenicity/Reproductive Toxicity: The International Agency for Research on Cancer classifies lead compounds in group 2B: possible carcinogenic in humans (no evidence in humans but sufficient evidence in animals). Does not contain any other carcinogen or potential carcinogen.

12. DISPOSAL CONSIDERATIONS

Recycle if possible. Dispose of waste in accordance with federal, state, and local regulations.

13. REGULATORY INFORMATION

WHMIS Classification (Canada): D2 Material causing other toxic effects.

EEC Classification (Europe): Not Classified.

USA Regulations:

Section 313 Supplier Notification

This product may contain the following toxic chemical(s) subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (Title III of SARA) and of 40 CFR 372. (This information must be included in all MSDS's that are copied and distributed for this material.)

Chemical Name	CAS #
Copper	7440-50-8
Zinc	7440-66-6
Lead	7439-92-1

This product contains lead. Any process resulting in exposure to more than 0.5 mg/m³ of metal dust may result in a daily dose of lead of over 0.5 ug/day, the dose above which the "California Safe Drinking Water and Toxic Enforcement Act" of 1986 requires notification. Refer to the appropriate regulation notification wording guidelines.

14. OTHER INFORMATION

UEI™ Systems provides the information contained herein in good faith. It is believed to be correct. However it is not all inclusive and should be used only as a guide. Individuals receiving this information must exercise their independent judgement in determining its appropriateness for a particular purpose. UEI™ Systems shall not be held liable for any damage resulting from handling or from contact with this product.

Abbreviations:

CAS #: Chemical Abstracts Service Registry Number
EC: European Community
NA: Not Applicable
ACGIH: American Conference of Governmental Industrial Hygienists
TLV: Threshold Limit Value
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
C: Celsius