Safety
Data
Sheet

U·E·I Systems
A UEI® GROUP COMPANY

9090 Nieman • Overland Park, KS 66214 • (913) 541-0503 • Toll Free: 800-221-9059 • sales@ueisystems.com • ueisystems.com

Section 1 Chemical Product and Company Identification

Product Identifier MiraBrass®, AquaMulsion Negative Resist Coated

Product Number IF-BRS8223

General Use Foil stamping or embossing

Company Address UEI Systems®, a UEI Group Company
9090 Nieman Road
Overland Park, KS 66214 USA

Phone +1 800 221 9059 or +1 913 541 0503

Emergency Contact Number CHEMTEL – Available 24 hours/day, 7 days/week
Domestic North America: +1 800 255 3924
International: +1 813 248 0585

Section 2 Hazards Identification

GHS Classification

Hazard Class	Hazard Category	Route of Exposure
Sensitization, Skin	1	–
Serious Eye Damage/Eye Irritation	2A	–
Carcinogenicity	2B	–
Toxic to Reproduction	1A	–
Specific Target Organ Toxicity, Repeated Exposure	1	Nervous System

GHS Labeling

Contains Copper (7440-50-8), Zinc (7440-66-6), Lead (7439-92-1)

Danger

Hazard Statement
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of causing cancer.
Causes damage to nervous system through prolonged or repeated exposure.
May damage fertility or the unborn child.

Precautionary Statements
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves.
Wear eye protection/face protection.
Contaminated work clothing must not be allowed out of the workplace.

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Section 2 Hazards Identification, continued

Response Get medical advice/attention if you feel unwell.
If on skin: Wash with plenty of water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Storage Store locked up.

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

Section 3 Hazardous Ingredients / Identity Information

	Hazardous Components	CAS No.	%
Metal	Copper	7440-50-8	55–65
	Zinc	7440-66-6	30–45
	Tin	7440-31-5	<1
	Lead	7439-92-1	<4
	Acrylates		<1

Section 4 First Aid Measures

Inhalation Remove to fresh air. If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.

Ingestion Wash out mouth with water. Do **not** induce vomiting if conscious. Call a physician.

Eye Contact Immediately flush eyes with large amounts of water for at least 15 minutes.

Skin Contact Immediately flush skin with large amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash hands before eating and smoking.

Section 5 Firefighting Measures

Flammable/Combustible Properties This product does not present fire or explosion hazards as shipped.
Dust and fines may be readily ignitable.

Fire/Explosion May be a potential hazard under the following conditions:
- Heavily concentrated dust clouds are dispersed in the air.
  Dust or fines dispersed in the air can be explosive if subjected to a strong ignition source.
- Molten metal in contact with water/moisture. Moisture entrapped by molten metal can be explosive.

Extinguishing Media Use Class D extinguishing agents on dusts, fines or molten metal.

Unsuitable Extinguishing Media **Do Not Use:**
- Halogenated agents on dust or fines.
- Water around molten metal.

These agents will react with the burning material.

Firefighting Equipment/Instructions Fire fighters should wear NIOSH-approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

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Section 6 Accidental Release Measures

Personal Precautions Wear gloves and approved respiratory protection if possibility of dust, mist and fume exposure exists.

Environmental Precautions Brass-containing waste is normally collected for recycling. Should waste disposal be deemed necessary, follow Federal, State, or Local regulations.

Methods for Cleaning Up Do not use compressed air for cleaning.

Section 7 Handling and Storage

Do not breathe dust or smoke. Avoid activities that raise dust or smoke. Avoid contact with the eyes and skin. Wash hands thoroughly after handling. Store in a normal dry warehouse.

Section 8 Component Exposure Limits

	Hazardous Components	CAS No.	OSHA (PEL/TWA)	ACGIH TLV
Metal	Copper	7440-50-8	1 mg/m^3, Dust 0.1 mg/m^3, Fume	1 mg/m^3, Dust 0.2 mg/m^3, Fume
	Zinc	7440-66-6	15 mg/m^3	10 mg/m^3
	Tin	7440-31-5	2 mg/m^3	2 mg/m^3
	Lead	7439-92-1	.05 mg/m^3	.05 mg/m^3

Component Exposure Limits

Appropriate Engineering Controls When handling molten brass, protective clothing against metal splashing, face shield, protective gloves and respirator if needed, must be used. Avoid ingestion and inhalation of dust and fumes. Do not eat, drink or smoke during use and wash hands before eating, drinking or smoking.

Personal Respiratory Protection Use NIOSH/MSHA approved dust respirator to avoid excessive inhalation of dust, fume or mist.

Personal Hand Protection Use protective gloves against melt splashing.

Eye Protection Use safety glasses or face shield in exposure to dust, fume or mist and when handling melt.

Skin Protection Protective clothing against melt splashing. Wear trouser legs outside boots to avoid melt entrance in the boots.

Section 9 Physical and Chemical Properties

Appearance/Odor	Yellow/No odor	**Odor Threshold**	No data
pH	No data	**Boiling Point**	No data
Melting Point	>1,630° (885°C)	**Solubility (H_2O)**	Insoluble in water
Specific Gravity	No data	**Density**	0.307lb/in^3 (8.5g/cc)
Octanol/H_2O Coefficient	No data	**Evaporation Rate**	No data
Molecular Weight	No data	**Decomposition Temperature**	No data
Auto Ignition	No data	**Lower Flammability Limit**	No data
Flash Point	No data	**Upper Flammability Limit**	No data
Vapor Density	No data	**Vapor Pressure**	No data
VOC	No data	**Flammability Class**	No data
Viscosity	No data		

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Section 10 Chemical Stability and Reactivity

Stability	Stable under normal handling conditions.
Incompatibility	None known
Hazardous Decomposition/ By-Products	Thermal decomposition products of the cured coating may yield small quantities of fine particulates and gases from the fluoropolymer that can include hydrogen fluoride.
Hazardous Polymerization	Will not occur

Section 11 Toxicological Information

Likely routes of exposure	Brass compounds may be toxic by inhalation, ingestion, injection, and skin or eye exposure.
Acute Effects Inhalation	Exposure to fumes or dust may cause irritation of the nose and upper respiratory tract, as well as sneezing and coughing. Perforation of the nasal septum can also occur. "Metal fume fever", with respiratory and flu-like symptoms such as chills and muscle aches, may result from exposure to fumes or fine dust. The incidence of copper-induced metal fume fever is low due to the high temperatures required to volatilize copper.
Eye Contact	Exposure of the eyes to copper fumes or dust can cause irritation, conjunctivitis, palpebral edema, ulceration and corneal turbidity. Eye irritation, uveitis, abscess and loss of the eye may also occur from the mechanical action of lodged copper particles. Penetration of the eye by fine fragments can result in severe ocular damage. Corneal discoloration (Kayser-Fleischer ring) is a hallmark of Wilson disease.
Skin Contact	Skin exposure may cause irritation, itching, eczema, allergic contact dermatitis, hypersensitivity, and a greenish discoloration of the hair, teeth and skin.
Ingestion	Acute ingestion of copper salts can cause irritation, severe nausea and vomiting, salivation, abdominal pain, epigastric burning, hemolysis, gastrointestinal bleeding with hemorrhagic gastritis, hematemesis and melena, anemia, hypotension, jaundice, seizures, coma, shock and death. Hepatic and renal failure may develop several days after acute ingestion. Methemoglobinemia may rarely occur. Copper may produce a metallic or sweet taste.
Sensitization	Skin exposure may cause irritation, itching, eczema, allergic contact dermatitis, hypersensitivity, and a greenish discoloration of the hair, teeth and skin.
Carcinogenicity Lead Classification	B2; probable human carcinogen.
Target Organ Effects Lead (7439-92-1)	Impairment of psychological and neurobehavioral functions has been found after long-term lead exposure of workers.
Reproductive Toxicity	The reproductive effects of lead in the male are limited to sperm morphology and count. In the female, some adverse pregnancy outcomes have been attributed to lead. Pregnancy and lactation further increase mobilization of lead from the maternal skeleton with proportionate increase in blood lead in the prenatal period.
Teratogenicity	Lead has been shown to be associated with impaired neurobehavioral functioning in children. Impairment of psychological and neurobehavioral functions has been found after long-term lead exposure of workers. Electrophysiological parameters have been shown to be useful indicators of subclinical lead effects in the CNS. Peripheral neuropathy has long been known to be caused by long-term high-level lead exposure at the workplace. Slowing of nerve conduction velocity has been found at lower levels.

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Section 12 Ecological Information

Ecotoxicity No data is available on this product. Individual constituents are as following:

Component	Species	Exposure Time	LC50/EC50/IC50
Copper (7440-50-8)	*Selenastrum capricornatum* (green alga) *Oncorhynchus kisutc*h (coho salmon)	14 days 96 hrs	EC50 85 ug/l LC50 286 ug/l
Zinc (7440-66-6)	*Daphnia magna* (water flea)	48 hrs	LC50 0.068 mg/l
Lead (7439-92-1)	*Chlamydomonas reinhardtii* (green algae) *Daphnia magna* (water flea)	3 min 48 hrs	EC50 0.0000022 M LC50 4400 ug/l

Persistence/Degradability No evidence was found to indicate that there is any biotransformation process for copper compounds.

Bioaccumulative Potential Copper is accumulated by all plants and animals.

Mobility in Soil Copper is relatively mobile in soils.
Zinc is strongly adsorbed to soils at pH 5 or greater and is expected to have low mobility in most soils. Lead in the soil has a limited mobility except when soluble organic complexes or when the soil lead exchange capacity approaches saturation.

Section 13 Disposal Considerations

Disposal Instructions Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. This product may be a candidate for metal reclamation.

Section 14 Transportation Information

The material is not regulated under DOT provisions.

Section 15 Regulatory Information

	SARA[1]	SARA[1] EHS	RCRA[2]	CERCLA[3]	CERCLA[3] RQ	TSCA[4]
Copper	Listed	Not listed	Not listed	Listed per CWA Section 307(a)	5000 lb (2268 kg)	Listed
Zinc	Listed	Not listed	Not listed	Listed per CWA Section 307(a)	1000 lb (453.5 kg)	Listed
Lead	Listed	Not listed	Listed	Listed per CWA Section 307(a)	10 lb (4.535 kg)	Listed

Component Analysis – State

Component	CA	MA	MN	NJ	PA	RI
Copper (7440-50-8)	N	Y	Y	Y	Y	Y
Zinc (7440-66-6)	N	Y	N	Y	Y	Y
Lead (7439-92-1)	Y	Y	Y	Y	Y	Y

California Prop 65 **Warning**: This product contains a chemical known to the State of California to cause cancer.
Warning: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

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Section 16 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. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources.

Abbreviations

PEL Permissible Exposure Limit
TLV Threshold Limit Value

End Notes

1. SARA - Signed into law in 1986, the Superfund Amendments and Reauthorization Act (SARA) is an extension of CERCLA, and is intended to encourage and support local and state emergency planning efforts. SARA provides citizens and local governments with information about potential chemical hazards, and calls for facilities that store hazardous materials to provide officials and citizens with data on the type and amount on hand at specific locations. This field states whether a material is listed or not listed in section 372.65 of SARA. EHS - This states if a material is listed or not listed in Appendix B to part 355, the SARA Extremely Hazardous Substances (EHS) section. RQ is the reportable quantity. TPQ is the Threshold Planning Quantity.

2. RCRA - The Resource Conservation and Recovery Act enacted in 1976 and subsequently amended, controls solid-waste disposal and encourages recycling. This states whether a material is listed or not listed under this regulation. If listed the Hazardous Waste Number and waste characterization assigned by RCRA is also provided. 3. CERCLA - Enacted in 1980 and amended thereafter, the Comprehensive Environmental Response, Compensation, and Liability Act provides for identification and cleanup of hazardous materials released on land, into the air, waterways, and groundwater. It covers areas affected by newly released materials and older leaking or abandoned dump sites. This states whether a material is listed or not listed in CERCLA Table 302.4. If listed the section(s) that it is listed under and the Reportable Quantity (RQ) are also provided. 4. TSCA - The Toxic Substances Control Act controls the exposure to and use of raw industrial chemicals not subject to other laws. This states whether the chemical is listed or not listed under this regulation.

Revision 21 April 2020

Supersedes 26 March 2014

Evidence

http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~uCI2Um:4
http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~njkGDl:1
http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~uCI2Um:3