



MATERION

1. Chemical and company identification

Name of chemical (Product name)	Navel Brass Product	
Company name	Materion Advanced Materials Group	
Address	42 Mt. Ebo Road South Brewster, NY 10509 United States	
Telephone	1+845.279.0900	
Emergency telephone number	Chemtrec	1+703.527.3887
Reference number	390	

2. Hazards identification

GHS classification

Physical hazards	The product is not classified according to GHS.	
Health hazards	Serious eye damage/eye irritation	Category 2B
	Sensitization, skin	Category 1A
	Specific target organ toxicity, single exposure	Category 1 (digestive system)
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated exposure	Category 1 (lung)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

GHS label elements

Symbols



Signal words

Danger

Hazard statement

May cause an allergic skin reaction. Causes eye irritation. May cause respiratory irritation. Causes damage to organs (digestive system). Causes damage to organs (lung) through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves.

Response

IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Call a POISON CENTER/doctor. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

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

Other hazards which do not result in classification

None known.

Supplemental information 95% of the mixture consists of component(s) of unknown acute oral toxicity. 100% of the mixture consists of component(s) of unknown acute dermal toxicity. 25% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 25% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

Main symptoms and emergency overview

Main symptoms Nausea, vomiting. Diarrhea. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Coughing. Discomfort in the chest. Shortness of breath. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Emergency overview Causes damage to organs. Causes eye irritation. May cause irritation to the respiratory system. May cause an allergic skin reaction. Dangerous for the environment if discharged into watercourses.

3. Composition/information on ingredients

Substance or mixture	Mixture	Gazette notification			
		CAS Number	ENCS no.	ISHL no.	Concentration (%)
Copper		7440-50-8			55 - 70
Zinc		7440-66-6			30 - 60
Tin		7440-31-5			10 - 25

Chemical formula Cu (7440-50-8), Zn (7440-66-6), Sn (7440-31-5)

4. First aid measures

If inhaled Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

If on skin Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

If in eyes Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

If swallowed Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Nausea, vomiting. Diarrhea. Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Coughing. Discomfort in the chest. Shortness of breath. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Protection of first-aid responders If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

Notes to physician Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media Powder. Dry sand.

Extinguishing media to avoid Water. Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards During fire, gases hazardous to health may be formed.

Special fire fighting procedures Move containers from fire area if you can do so without risk.

Protection of fire-fighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

General fire hazards No unusual fire or explosion hazards noted.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency measures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods or materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation)	Provide adequate ventilation.
Safe handling advice	Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.
Contact avoidance measures	Acids. Chlorine. For further information, please refer to section 10 of the SDS.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Storage

Safe storage conditions	Store locked up. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS).
Safe packaging materials	Store in original tightly closed container.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

Engineering measures	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.
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Personal protective equipment

Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection	Wear appropriate chemical resistant gloves.
Eye protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	Not available.

Odor	Not available.
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pH	Not available.
Melting point/Freezing point	449.42 °F (231.9 °C) estimated
Boiling point, initial boiling point, and boiling range	1664.6 °F (907 °C) estimated
Flash point	Not available.
Combustion characteristics (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.00001 hPa estimated
Vapor density	Not available.
Specific gravity	7.97 estimated
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	1166 °F (630 °C) estimated
Decomposition temperature	Not available.
Viscosity (Coefficient of viscosity)	Not available.
Other information	
Density	7.97 g/cm3 estimated
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Acids. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity	Not known.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes eye irritation.
Respiratory or skin sensitization	
Japan Society for Occupational Health: Skin sensitizer	
Copper (CAS 7440-50-8)	2 Probable skin sensitizer.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Causes damage to organs (digestive system). May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Causes damage to organs (lung) through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicological data

Product	Species		Test Results
Navel Brass Product			
Aquatic			
Crustacea	EC50	Daphnia	4.6667 mg/l, 48 hours estimated
Fish	LC50	Fish	3.6284 mg/l, 96 hours estimated

Components	Species		Test Results
Copper (CAS 7440-50-8)			
Aquatic			
Fish	LC50	Western mosquitofish (<i>Gambusia affinis</i>)	0.056 mg/l, 96 hours

Ecotoxicity	Very toxic to aquatic life with long lasting effects.
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.
Bioaccumulation	No data available.
Mobility in soil	No data available for this product.
Hazardous to the ozone layer	No data available.
Other hazardous effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Dispose in accordance with all applicable regulations.

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
Local disposal regulations	Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

14. Transport information

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

National regulations Follow regulation in section 15 for domestic transportation.

15. Regulatory information

Industrial Safety and Health Act

Notifiable substances

COPPER AND COPPER COMPOUNDS

Table 9 Ordinance No. 379 55 - 70 %

TIN AND TIN COMPOUNDS	Table 9 Ordinance No. 322	10 - 25 %
Labeling substances		
COPPER (POWDER)		55 - 70 %
COPPER AND COPPER COMPOUNDS		55 - 70 %
TIN (POWDER)		10 - 25 %
TIN AND TIN COMPOUNDS		10 - 25 %
Poisonous and Deleterious Substances Control Act		
Specified poisonous substances		
Not regulated.		
Poisonous substances		
Not regulated.		
Deleterious substances		
Not regulated.		
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.		
Class I specified chemical substances		
Not regulated.		
Class II specified chemical substances		
Not regulated.		
Monitoring chemical substances		
Not regulated.		
Priority Assessment Chemical Substances (PACs)		
Not regulated.		
Reporting Exempted Substances		
Not regulated.		
Law concerning Pollutant Release and Transfer Register		
Specified class 1 substances (substance name, ordinance number and content)		
Not regulated.		
Class 1 substances (substance name, ordinance number and content)		
Not regulated.		
Class 2 substances (substance name, ordinance number and content)		
Not regulated.		
Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule	Not regulated.	
Air Law, Enforcement Rule	Not regulated.	
Explosives Control Act		
Not regulated.		
Water Pollution Control Act		
ZINC		
Sewage Act		
COPPER AND ITS COMPOUNDS (AS CU)	3 MG/L	
ZINC AND ITS COMPOUNDS (AS ZN)	5 MG/L	

16. Other information

Bibliography	ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices HSDB® - Hazardous Substances Data Bank IARC Monographs. Overall Evaluation of Carcinogenicity National Toxicology Program (NTP) Report on Carcinogens Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012 JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)
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Materion Advanced Materials Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.