



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Gold Silver Copper

**Other means of identification**

**SDS number** WC9

**Recommended use** Not available.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company name** Materion Advanced Materials Technologies and Services Inc.

**Address**  
2978 Main Street  
Buffalo, NY 14214  
Buffalo, NY 14214  
United States

**Telephone** 716-837-1000

**Website** materion.com

**E-mail** ehs1@materion.com

**Emergency phone number** (800) 424-9300 Chemtrec

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**Environmental hazards** Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 1

**OSHA defined hazards** Not classified.

**Label elements**



**Signal word** Warning

**Hazard statement** Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

**Precautionary statement**

**Prevention** Avoid release to the environment.

**Response** Collect spillage.

**Storage** Store away from incompatible materials.

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

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** 79.72% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 79.72% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Gold		7440-57-5	60 - 98
RM Copper - Solid		7440-50-8	0.1 - 35
Silver		7440-22-4	0.1 - 5

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
<b>Most important symptoms/effects, acute and delayed</b>	Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	<p>Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.</p> <p>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.</p> <p>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the SDS.</p>
<b>Environmental precautions</b>	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.

## 7. Handling and storage

### Precautions for safe handling

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
RM Copper - Solid (CAS 7440-50-8)	PEL	1 mg/m <sup>3</sup>	Dust and mist.
Silver (CAS 7440-22-4)	PEL	0.1 mg/m <sup>3</sup> 0.01 mg/m <sup>3</sup>	Fume.

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Silver (CAS 7440-22-4)	TWA	0.1 mg/m <sup>3</sup>	Dust and fume.

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
RM Copper - Solid (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
Silver (CAS 7440-22-4)	TWA	0.01 mg/m <sup>3</sup>	Dust.

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Control parameters

Follow standard monitoring procedures.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Wear safety glasses with side shields (or goggles).

#### Skin protection

##### Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

##### Other

Wear suitable protective clothing.

#### Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

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.

## 9. Physical and chemical properties

### Appearance

#### Physical state

Solid.

#### Form

Not available.

#### Color

Not available.

### Odor

Not applicable.

### Odor threshold

Not available.

### pH

Not available.

### Melting point/freezing point

1760.9 °F (960.5 °C) estimated

### Initial boiling point and boiling range

3632 °F (2000 °C) estimated

Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
<b>Upper/lower flammability or explosive limits</b>	
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.
Relative density	Not available.
<b>Solubility(ies)</b>	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not available.
<b>Other information</b>	
Density	17.47 g/cm <sup>3</sup> estimated
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	17.47 estimated

## 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	Contact with incompatible materials.
Incompatible materials	Ammonia. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Dust may irritate the eyes.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics  
Dusts may irritate the respiratory tract, skin and eyes.

### Information on toxicological effects

#### Acute toxicity

Product	Species	Test Results
Gold Silver Copper		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rat	11293 mg/kg estimated
<b>Oral</b>		
LD50	Rat	28234 mg/kg estimated

Components	Species	Test Results
Silver (CAS 7440-22-4)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rat	> 2000 mg/kg
<b>Oral</b>		
LD50	Rat	> 5000 mg/kg

\* Estimates for product may be based on additional component data not shown.

<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	
Not listed.	
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

Product	Species	Test Results
Gold Silver Copper		
<b>Aquatic</b>		
Crustacea	EC50 Daphnia	0.0274 mg/l, 48 hours estimated
Fish	LC50 Fish	13.1729 mg/l, 96 hours estimated
Components	Species	Test Results
RM Copper - Solid (CAS 7440-50-8)		
<b>Aquatic</b>		
Crustacea	EC50 Water flea (Daphnia magna)	0.036 mg/l, 48 hours
Fish	LC50 Fathead minnow (Pimephales promelas)	0.0319 - 0.0544 mg/l, 96 hours

Components	Species	Test Results
Silver (CAS 7440-22-4)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Daphnia magna) 0.0002 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas) 0.0023 - 0.0033 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	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

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	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).
<b>Contaminated packaging</b>	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.

### 14. Transport information

<b>DOT</b>	
<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substances, solid, n.o.s. (Silver RQ = 5647 LBS, RM Copper - Solid RQ = 194553 LBS)
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	9
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33
<b>Packaging exceptions</b>	155
<b>Packaging non bulk</b>	213
<b>Packaging bulk</b>	240

#### IATA

<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s. (Silver, RM Copper - Solid)
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	Yes
<b>ERG Code</b>	9L
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

**Other information**

**Passenger and cargo aircraft** Allowed.  
**Cargo aircraft only** Allowed.

**IMDG**

**UN number** UN3077  
**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver, RM Copper - Solid), MARINE POLLUTANT  
**Transport hazard class(es)**  
**Class** 9  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards**  
**Marine pollutant** Yes  
**EmS** F-A, S-F  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**DOT; IATA; IMDG**



**Marine pollutant**



**General information** IMDG Regulated Marine Pollutant.

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

RM Copper - Solid (CAS 7440-50-8) Listed.  
Silver (CAS 7440-22-4) Listed.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

## Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** No

### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
RM Copper - Solid	7440-50-8	0.1 - 35
Silver	7440-22-4	0.1 - 5

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

## US state regulations

### US - New Jersey RTK - Substances: Listed substance

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US - Pennsylvania RTK - Hazardous Substances: All compounds of this substance are considered environmental hazards

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

### US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US. Massachusetts RTK - Substance List

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US. New Jersey Worker and Community Right-to-Know Act

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US. Pennsylvania RTK - Hazardous Substances

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US. Pennsylvania Worker and Community Right-to-Know Law

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US. Rhode Island RTK

RM Copper - Solid (CAS 7440-50-8)  
Silver (CAS 7440-22-4)

### US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.



## 16. Other information, including date of preparation or last revision

**Issue date** 09-17-2015

**Version #** 01

**Disclaimer** Materion - Buffalo 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. The information in the sheet was written based on the best knowledge and experience currently available.