PRODUCT INFORMATION SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name of the substance	Copper Product
Identification number	029-024-00-X (Index number)
Registration number	-
Document number	015
Synonyms	None.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Manufacture of computer, electronic and optical products, electrical equipment Scientific research and development
Uses advised against	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

Supplier

Company name	Materion Electronic Materials	
Address	6070 Parkland Boulevard Mayfield Heights, OH 44124 United States	
Division		
Telephone		1.216.383.4019
e-mail	ehs@materion.com	
Contact person	Theodore Knudson	

1.4. Emergency telephone number See Section 16.

1.3. Details of the supplier of the product information sheet

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Company name	Materion Electronic Materials	
Address	6070 Parkland Boulevard Mayfield Heights, OH 44124 United States	
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Telephone		1.216.383.4019
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Contact person	Theodore Knudson	

1.4. Emergency telephone number See Section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classificatior applies. The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard	Category 1 M-Factor = 10.	H400 - Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term aquatic hazard	Category 1 M-Factor = 10.	H410 - Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains:	Copper

Hazard pictograms

Signal word Warning

Hazard statements

The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

Observe good industrial hygiene practices.

P273 Avoid release to the environment.

Response

Wash hands after handling.

P391 Collect spillage.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information For further information, please contact the Product Stewardship Department at +1.216.383.4019.

2.3. Other hazards This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII. The substance is not included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Copper	99 - 100	7440-50-8 231-159-6	01-2119480154-42-0000	-	

Classification: -

List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.
M: M-factor
vPvB: very persistent and very bioaccumulative substance.
PBT: persistent, bioaccumulative and toxic substance.
#: This substance has been assigned Union workplace exposure limit(s).
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash hands with water as a precaution.

Eye contact Flush eyes with water as a precaution.

Ingestion Rinse mouth. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed Under normal conditions of intended use, this material does not pose a risk to health.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Powder. Dry sand.

Unsuitable extinguishing media Do not use water as an extinguisher.

5.2. Special hazards arising from the substance or mixture This product is not flammable.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear suitable protective equipment.

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Wear appropriate personal protective equipment.

For emergency responders Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the Product Information Sheet. Use personal protection recommended in Section 8 of the PIS.

6.2. 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.

6.3. Methods and material for containment and cleaning up The product is immiscible with water and will spread on the water surface. Prevent product from entering drains. Clean up in accordance with all applicable regulations. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. The product is insoluble in water.

6.4. Reference to other sections For personal protection, see section 8 of the Product Information Sheet. For waste disposal, see section 13 of the Product Information Sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Wear gloves to prevent metal cuts and skin abrasions during handling.

7.2. Conditions for safe storage, including any incompatibilities Keep locked up. Store in tightly closed container.

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 1 Categories of dangerous substances
Hazard categories in accordance with Regulation (EC) No 1272/2008
- H2 ACUTE TOXIC (Lower-tier requirements = 50 tonnes; Upper-tier requirements = 200 tonnes)
- E1 Hazardous to the Aquatic Environment Acute (Lower-tier requirements = 100 tonnes; Upper-tier requirements = 200 tonnes)
- E1 Hazardous to the Aquatic Environment Chronic (Lower-tier requirements = 100 tonnes; Upper-tier requirements = 200 tonnes)

Store away from incompatible materials (see Section 10 of the PIS).

7.3. Specific end use(s) Observe industrial sector guidance on best practices.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value	Form
Copper Product	VLE	2 mg/m3	Dust.

Regulatory status: Indicative limit (VL)

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value	Form
	VME	1 mg/m3	Dust.
Regulatory status:	Indicative limit (VL)		
		0,2 mg/m3	Fume.
Regulatory status:	Indicative limit (VL)		

Components	Type	Value	Form
Copper (CAS 7440-50-8)	VLE	2 mg/m3	Dust.
Regulatory status:	Indicative limit (VL)		
	VME	1 mg/m3	Dust.
Regulatory status:	Indicative limit (VL)		
		0,2 mg/m3	Fume.
Regulatory status:	Indicative limit (VL)		

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

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) 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.

Individual protection measures, such as personal protective equipment

General information Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear safety glasses with side shields (or goggles). Wear approved safety glasses, goggles, face shield and/or welder's helmet when risk of eye injury is present, particularly during operations that generate dust, mist or fume.

Skin protection

- Hand protection Wear gloves to prevent metal cuts and skin abrasions during handling.

- Other No specific recommendations.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

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.

Environmental exposure controls Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Solid.

Form Solid.

Colour Copper.

Odour None.

Odour threshold Not applicable.

Melting point/freezing point 1083 °C (1981,4 °F) / Not applicable.

Boiling point or initial boiling point and boiling range Not applicable.

Flammability None known.

Upper/lower flammability or explosive limits

Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit – upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
Flash point	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
pH	Not applicable.
Kinematic viscosity	Not applicable.
Solubility	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water) (log value)	Not applicable.
Vapour pressure	Not applicable.
Vapour pressure temp.	Not applicable.
Density and/or relative density	
Density	8,94 g/cm3 estimated 8,94 g/cm3 estimated estimated Not applicable.
Relative density	Not applicable.
Vapour density	Not applicable.
Particle characteristics	
Particle size	Not applicable
9.2. Other information	
9.2.1. Information with regard to physical hazard classes	No relevant additional information available.
9.2.2. Other safety characteristics	
Evaporation rate	Not applicable.
Molecular formula	Cu
Molecular weight	63,55 g/mol
Viscosity	Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	Not likely, due to the form of the product.
Skin contact	Not relevant, due to the form of the product.
Eye contact	Not relevant, due to the form of the product.
Ingestion	Not relevant, due to the form of the product.
Symptoms	None known.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	Not known.
Skin corrosion/irritation	Not relevant, due to the form of the product.
Serious eye damage/eye irritation	Not likely, due to the form of the product.
Respiratory sensitisation	Not a respiratory sensitiser.
Skin sensitisation	Not a skin sensitiser.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Not classified.
Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Not an aspiration hazard.
Mixture versus substance information	No information available.

11.2. Information on other hazards

Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to human health, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity Very toxic to aquatic life with long lasting effects.

Product		Species	Test Results
Copper Product			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	0,0318 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0,0219 - 0,0446 mg/l, 96 hours

Components		Species	Test Results
Copper (CAS 7440-50-8)			
Aquatic			
Acute			
Crustacea	EC50	Blue crab (Callinectes sapidus)	0,0031 mg/l
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	0,02 mg/l, 96 hours

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

12.2. Persistence and degradability	No data is available on the degradability of this product.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.
12.6. Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to the environment, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
12.7. Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	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.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping name	Not regulated as dangerous goods.
14.3. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
Hazard No. (ADR)	Not assigned.
Tunnel restriction code	Not assigned.
14.4. Packing group	-
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not assigned.

RID

14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping name	Not regulated as dangerous goods.
14.3. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
14.4. Packing group	-
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not assigned.

ADN

14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping name	Not regulated as dangerous goods.
14.3. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
14.4. Packing group	-
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not assigned.

IATA

14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping name	Not regulated as dangerous goods.
14.3. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
14.4. Packing group	-

14.5. Environmental hazards No.

14.6. Special precautions for user Not assigned.

IMDG

14.1. UN number Not regulated as dangerous goods.

14.2. UN proper shipping name Not regulated as dangerous goods.

14.3. Transport hazard class(es)

Class Not assigned.

Subsidiary risk -

14.4. Packing group -

14.5. Environmental hazards

Marine pollutant No.

EmS Not assigned.

14.6. Special precautions for user Not assigned.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Copper (CAS 7440-50-8)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended - Conditions of restriction given for the associated entry number should be considered

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex I, as amended

Not listed.

Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex II, as amended

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 1 Categories of dangerous substances
Hazard categories in accordance with Regulation (EC) No 1272/2008
- H2 ACUTE TOXIC
- E1 Hazardous to the Aquatic Environment Acute
- E1 Hazardous to the Aquatic Environment Chronic

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

National regulations

Follow national regulation for work with chemical agents.

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

France regulations

France INRS Table of Occupational Diseases

Not regulated.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
IATA: International Air Transport Association.
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
IMDG: International Maritime Dangerous Goods.
MARPOL: International Convention for the Prevention of Pollution from Ships.
PBT: Persistent, bioaccumulative and toxic.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
VLE: Exposure Limit Value.
VME: Exposure Average Value.
vPvB: Very persistent and very bioaccumulative.

References

Not available.

Information on evaluation method leading to the classification of mixture

Not applicable.

Full text of any statements, which are not written out in full under sections 2 to 15

None.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Training information

Follow training instructions when handling this material.

Disclaimer

To avoid any misunderstandings or incorrect assumptions by the receiver of the safety information, it should be made clear that the supplied information is not in the form of a Safety Data Sheet (SDS), but is actually a voluntary Product Information Sheet closely following the guidelines of the Safety Data Sheet – COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 (REACH/SDS).