



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier C19400 with A91145 Inlay and Tin/Copper Plating

Other means of identification

SDS number R10

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Materion Technical Materials Inc.

Address 5 Wellington Road

Lincoln, RI 02865

United States

Telephone 1.401.333.1700

Website www.materion.com

E-mail Mia.DeCelles@materion.com

Contact person Mia DeCelles

Emergency phone number Chemtrec 1.703.527.3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Carcinogenicity	Category 2
Reproductive toxicity (fertility, the unborn child)	Category 1A
Specific target organ toxicity, repeated exposure	Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Suspected of causing cancer. May damage fertility. May damage the unborn child. May cause harm to breast-fed children. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid breathing dust. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. 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. Call a poison center/doctor. If eye irritation persists: Get medical advice/attention.

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.

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

Supplemental information For further information, please contact the Product Stewardship Department at +1.800.862.4118.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Copper		7440-50-8	96 - 99
Iron		7439-89-6	2 - 2.5
Aluminum		7429-90-5	0.5 - 1
Tin		7440-31-5	0 - 0.6
Lead		7439-92-1	0 - 0.1

4. First-aid measures

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

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Prolonged exposure may cause chronic effects.

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

General information If you feel unwell, seek medical advice (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media Powder. Dry sand.

Unsuitable extinguishing media Carbon dioxide (CO₂).

Specific hazards arising from the chemical None known.

Special protective equipment and precautions for firefighters Use protective equipment appropriate for surrounding materials.

Fire fighting equipment/instructions 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.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS.

Environmental precautions Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling Do not handle until all safety precautions have been read and understood. Wash hands thoroughly after handling. Pregnant women should not work with the product, if there is the least risk of lead exposure. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³

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

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
Copper (CAS 7440-50-8)	PEL	1 mg/m ³	Dust and mist.
		0.1 mg/m ³	Fume.
Tin (CAS 7440-31-5)	PEL	2 mg/m ³	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m ³	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0.2 mg/m ³	Fume.
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m ³	Welding fume or pyrophoric powder.
		5 mg/m ³	Respirable.
		10 mg/m ³	Total
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0.1 mg/m ³	Fume.
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	PEL	5 mg/m ³	Welding fume.
		5 mg/m ³	Respirable fraction.
		5 mg/m ³	Pyrophoric powder.
		10 mg/m ³	Total dust.
Copper (CAS 7440-50-8)	PEL	1 mg/m ³	Dust and mist.
		0.1 mg/m ³	Fume.
Lead (CAS 7439-92-1)	PEL	0.05 mg/m ³	Dust and fume.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Components	Type	Value	Form
	TWA	0.03 mg/m ³	Dust and fume.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Lead (CAS 7439-92-1)	200 µg/l	Lead	Blood	*

* - For sampling details, please see the source document.

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

Eye/face protection If contact is likely, safety glasses with side shields are recommended.

Skin protection

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

Other Wear suitable protective clothing.

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

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state Solid.
Form Solid.
Color Copper/Silver/Gray.

Odor None.

Odor threshold Not applicable.

pH Not applicable.

Melting point/freezing point 1220 °F (660 °C) estimated

Initial boiling point and boiling range Not applicable.

4220.6 °F (2327 °C) estimated

Flash point Not applicable.

Evaporation rate Not applicable.

Flammability (solid, gas) 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.

Vapor pressure Not applicable.

Vapor density Not applicable.

Relative density Not applicable.

Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.
Other information	
Density	Varies.
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	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Not likely, due to the form of the product.
Eye contact	Not likely, due to the form of the product.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Prolonged exposure may cause chronic effects.

Information on toxicological effects

Acute toxicity	None known.
Skin corrosion/irritation	None known.
Serious eye damage/eye irritation	Not likely, due to the form of the product.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Lead (CAS 7439-92-1) 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Lead (CAS 7439-92-1) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity May damage the unborn child.

Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
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.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	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.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
Toxic Substances Control Act (TSCA)		
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)		
Copper (CAS 7440-50-8)	Listed.	
Lead (CAS 7439-92-1)	Listed.	
SARA 304 Emergency release notification	Not regulated.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)		
Lead (CAS 7439-92-1)	Reproductive toxicity	
	Central nervous system	
	Kidney	

Blood
Acute toxicity

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum	7429-90-5	0.5 - 1
Copper	7440-50-8	96 - 99
Lead	7439-92-1	0 - 0.1

Other federal regulations

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

Lead (CAS 7439-92-1)

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

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

California Proposition 65



WARNING: This product can expose you to Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Lead (CAS 7439-92-1) Listed: October 1, 1992

California Proposition 65 - CRT: Listed date/Developmental toxin

Lead (CAS 7439-92-1) Listed: February 27, 1987

California Proposition 65 - CRT: Listed date/Female reproductive toxin

Lead (CAS 7439-92-1) Listed: February 27, 1987

California Proposition 65 - CRT: Listed date/Male reproductive toxin

Lead (CAS 7439-92-1) Listed: February 27, 1987

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

Aluminum (CAS 7429-90-5)
Copper (CAS 7440-50-8)
Iron (CAS 7439-89-6)
Lead (CAS 7439-92-1)
Tin (CAS 7440-31-5)

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

Issue date 06-12-2017
Revision date 01-22-2019
Version # 02

Disclaimer

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Other information

Revised information in Section 4.

Revised information in Section 5.

Revised information in Section 6.

Revised information in Section 8.

Revised information in Section 9.

Revised information in Section 11.

Revised information in Section 15.