



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

<b>Product identifier</b>	<b>Chromium Nickel Aluminum Targets</b>
<b>Other means of identification</b>	
<b>SDS number</b>	G19
<b>Recommended use</b>	Manufacture of computer, electronic and optical products, electrical equipment Scientific research and development Other: Manufacture of medical and defense equipment
<b>Recommended restrictions</b>	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

<b>Company name</b>	Materion Advanced Materials	
<b>Address</b>	6070 Parkland Boulevard Mayfield Heights, OH 44124 United States	
<b>Telephone</b>	EH&S	1.216.383.4019
<b>Website</b>	www.materion.com	
<b>E-mail</b>	ehs@materion.com	
<b>Contact person</b>	Theodore Knudson	
<b>Emergency phone number</b>	See Section 16.	
<b>Supplier</b>	See above.	

## 2. Hazard identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Sensitization, skin	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 1
<b>Environmental hazards</b>	Not classified.	

#### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure.
<b>Precautionary statement</b>	
<b>Prevention</b>	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. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.
<b>Response</b>	If on skin: Wash with plenty of water. If exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
<b>Storage</b>	Store locked up.

<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Other hazards</b>	None known.
<b>Supplemental information</b>	For further information, please contact the Product Stewardship Department at +1.216.383.4019.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminum		7429-90-5	58 - 90
Chromium		7440-47-3	5 - 30
Nickel		7440-02-0	5 - 12

### 4. First-aid measures

<b>Inhalation</b>	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse with water. If eye irritation persists: Get medical advice/attention.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	May cause an allergic skin reaction. Prolonged exposure may cause chronic effects.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	If exposed or concerned: get medical attention/advice.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water Spray or Fog. Powder. Dry sand.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire. Carbon dioxide (CO2).
<b>Specific hazards arising from the chemical</b>	No unusual fire or explosion hazards noted.
<b>Special protective equipment and precautions for firefighters</b>	Wear suitable protective equipment.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<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. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

### 7. Handling and storage

<b>Precautions for safe handling</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
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**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

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m <sup>3</sup>	Inhalable fraction.
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m <sup>3</sup>	Inhalable fraction.

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Pyrophoric powder.
		10 mg/m <sup>3</sup>	Dust.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m <sup>3</sup>	

#### Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m <sup>3</sup>	Total
Nickel (CAS 7440-02-0)	TWA	0.05 mg/m <sup>3</sup>	

#### Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m <sup>3</sup>	Inhalable fraction.
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m <sup>3</sup>	Inhalable fraction.

#### Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TWA	1 mg/m <sup>3</sup>	Inhalable fraction.

#### Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Welding fume.
		10 mg/m <sup>3</sup>	
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TWA	1 mg/m <sup>3</sup>	

#### Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	15 minute	20 mg/m <sup>3</sup>	Dust.
		10 mg/m <sup>3</sup>	Pyrophoric powder.
	8 hour	5 mg/m <sup>3</sup>	Pyrophoric powder.
		10 mg/m <sup>3</sup>	Dust.
Chromium (CAS 7440-47-3)	15 minute	1.5 mg/m <sup>3</sup>	
	8 hour	0.5 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	15 minute	3 mg/m <sup>3</sup>	Inhalable fraction.

Components	Type	Value	Form
	8 hour	1.5 mg/m3	Inhalable fraction.
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).		
<b>Appropriate engineering controls</b>	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. General ventilation normally adequate.		
<b>Individual protection measures, such as personal protective equipment</b>			
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).		
<b>Skin protection</b>			
<b>Hand protection</b>	Suitable gloves can be recommended by the glove supplier. Wear gloves to prevent metal cuts and skin abrasions during handling.		
<b>Other</b>	Use personal protective equipment as required.		
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment. In case of inadequate ventilation, use respiratory protection.		
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.		
<b>General hygiene considerations</b>	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. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.		

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Grey metallic.

**Odor** None.

**Odor threshold** Not applicable.

**pH** Not applicable.

**Melting point/freezing point** 2453 °F (1345 °C) estimated / Not applicable.

**Initial boiling point and boiling range** Not applicable.

**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.
<b>Other information</b>	
Density	7.30 - 8.50 g/cm <sup>3</sup>
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Surface tension	Not applicable.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong acids. Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Prolonged inhalation may be harmful.
<b>Skin contact</b>	May cause an allergic skin reaction.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	Expected to be a low ingestion hazard.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	May cause an allergic skin reaction.
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### Information on toxicological effects

<b>Acute toxicity</b>	Not known.
<b>Skin corrosion/irritation</b>	Not likely, due to the form of the product.
<b>Serious eye damage/eye irritation</b>	Not likely, due to the form of the product.

### Respiratory or skin sensitization

#### Canada - Alberta OELs: Irritant

Aluminum (CAS 7429-90-5)	Irritant
Chromium (CAS 7440-47-3)	Irritant

<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
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<b>Skin sensitization</b>	May cause an allergic skin reaction.
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<b>Germ cell mutagenicity</b>	Not classified.
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<b>Carcinogenicity</b>	Suspected of causing cancer.
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#### ACGIH Carcinogens

Aluminum (CAS 7429-90-5)	A4 Not classifiable as a human carcinogen.
Nickel (CAS 7440-02-0)	A5 Not suspected as a human carcinogen.

#### Canada - Manitoba OELs: carcinogenicity

Aluminum (CAS 7429-90-5)	Not classifiable as a human carcinogen.
Nickel (CAS 7440-02-0)	Not suspected as a human carcinogen.

## IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3)

3 Not classifiable as to carcinogenicity to humans.

Nickel (CAS 7440-02-0)

2B Possibly carcinogenic to humans.

## US. National Toxicology Program (NTP) Report on Carcinogens

Nickel (CAS 7440-02-0)

Known To Be Human Carcinogen.

Reasonably Anticipated to be a Human Carcinogen.

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

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous.

Product		Species	Test Results
Chromium Nickel Aluminum Targets			
<b>Aquatic</b>			
<i>Acute</i>			
Fish	LC50	Fish	0.3444 mg/l, 96 hours estimated
Components		Species	Test Results
Nickel (CAS 7440-02-0)			
<b>Aquatic</b>			
<i>Acute</i>			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.06 mg/l, 4 days

<b>Persistence and degradability</b>	No data is available on the degradability of any ingredients in the mixture.
<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. 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

### TDG

<b>UN number</b>	UN3178
<b>UN proper shipping name</b>	FLAMMABLE SOLID, INORGANIC, N.O.S.

**Transport hazard class(es)**  
 Class 4.1  
 Subsidiary risk -  
 Packing group III  
 Environmental hazards Not available.  
 Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

**IATA**

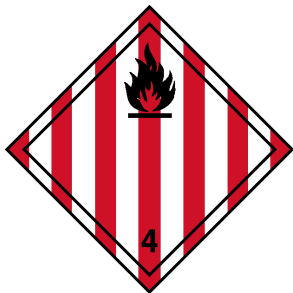
UN number UN3178  
 UN proper shipping name Flammable solid, inorganic, n.o.s.  
**Transport hazard class(es)**  
 Class 4.1  
 Subsidiary risk -  
 Packing group III  
 Environmental hazards No.  
 ERG Code 3L  
 Special precautions for user Read safety instructions, SDS and emergency procedures before handling.  
**Other information**  
 Passenger and cargo aircraft Allowed with restrictions.  
 Cargo aircraft only Allowed with restrictions.

**IMDG**

UN number UN3178  
 UN proper shipping name FLAMMABLE SOLID, INORGANIC, N.O.S.  
**Transport hazard class(es)**  
 Class 4.1  
 Subsidiary risk -  
 Packing group III  
 Environmental hazards  
 Marine pollutant No.  
 EmS F-A, S-G  
 Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

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

**IATA; IMDG; TDG**



**15. Regulatory information**

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

**Controlled Drugs and Substances Act**

Not regulated.

**Export Control List (CEPA 1999, Schedule 3)**

Not listed.

## Greenhouse Gases

Not listed.

## Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Aluminum (CAS 7429-90-5)

Chromium (CAS 7440-47-3)

Nickel (CAS 7440-02-0)

## Precursor Control Regulations

Not regulated.

## International regulations

### Stockholm Convention

Not applicable.

### Rotterdam Convention

Not applicable.

### Kyoto protocol

Not applicable.

### Montreal Protocol

Not applicable.

### Basel Convention

Not applicable.

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

<b>Issue date</b>	11-06-2019
<b>Revision date</b>	07-14-2021
<b>Version #</b>	03
<b>Further information</b>	Transportation Emergency Call Chemtrec at: International: 703.741.5970 Spain: 900.868.538 Switzerland: 0800.564.402



## Disclaimer

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