




# SAFETY DATA SHEET

**MATERION**

## 1. Product and company identification

<b>Name of the chemical</b>	<b>Nickel Chromium Targets</b>	
<b>Other means of identification</b>		
SDS number	G15	
<b>Recommended use of the chemical and restrictions on use</b>		
<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)	
<b>Manufacturer/Importer/Supplier/ Distributor information</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>E-mail</b>	ehs@materion.com	
<b>Contact person</b>	Theodore Knudson	
<b>Emergency telephone number</b>	See Section 16.	

## 2. Hazards identification

<b>Hazard classification</b>		
<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 (Respiratory system)
<b>Environmental hazards</b>	Not classified.	
<b>Label elements</b>		
<b>Symbols</b>		
<b>Signal word</b>	Danger	
<b>Hazard statement</b>	May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.	
<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. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.	
<b>Response</b>	If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If experiencing respiratory symptoms: Call a poison center/doctor.	
<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

#### Mixture

Chemical name	CAS Number	Concentration (%)
Nickel	7440-02-0	50 - 99
Chromium	7440-47-3	1 - 50

### 4. First aid measures

#### First aid measures for different exposure routes

<b>Inhalation</b>	Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help.
<b>Skin contact</b>	Thoroughly wash skin cuts or wounds to remove all particulate debris from the wound. Seek medical attention for wounds that cannot be thoroughly cleansed. Treat skin cuts and wounds with standard first aid practices such as cleansing, disinfecting and covering to prevent wound infection and contamination before continuing work. Obtain medical help for persistent irritation. Material accidentally implanted or lodged under the skin must be removed.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.
<b>Ingestion</b>	Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects** Not available.

**Personal protection for first-aid responders** If exposed or concerned: get medical attention/advice.

**Notes to physician** Not available.

### 5. Fire-fighting measures

<b>Extinguishing media</b>	Powder. Dry sand.
<b>Extinguishing media to avoid</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards during fire fighting</b>	This product is not flammable.
<b>Special fire fighting procedures</b>	Move container from fire area if it can be done without risk.
<b>Protection of fire-fighters</b>	None.

### 6. Accidental release measures

<b>Personal precautions</b>	As supplied, this product poses no special release issues.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so.
<b>Spill cleanup methods</b>	For waste disposal, see section 13 of the SDS.

### 7. Handling and storage

<b>Handling</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. 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. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
<b>Storage</b>	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

### 8. Exposure controls/personal protection

#### Exposure limits

##### OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)

Components	Type	Value
Chromium (CAS 7440-47-3)	STEL	2 mg/m <sup>3</sup>
	TWA	1 mg/m <sup>3</sup>
Nickel (CAS 7440-02-0)	STEL	2 mg/m <sup>3</sup>
	TWA	1 mg/m <sup>3</sup>

## US. ACGIH Threshold Limit Values

Components	Type	Value	Form
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.

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

**Appropriate engineering controls** Follow standard monitoring procedures.

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

**Eye/face protection** 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** Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities.

**Respiratory protection** In case of inadequate ventilation, use respiratory protection.

**Thermal hazards** Not applicable.

**General hygiene considerations** 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** Metallic.

**Odor** None.

**Odor threshold** Not applicable.

**Melting point/freezing point** 2651 °F (1455 °C) estimated / Not applicable.

**pH** Not applicable.

**Boiling point, initial boiling point, and boiling range** Not applicable.

**Flammability (solid, gas)** None known.

**Flash point** Not applicable.

**Decomposition temperature** Not applicable.

**Auto-ignition temperature** Not applicable.

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not applicable.

**Flammability limit - lower (%) temperature** Not applicable.

**Flammability limit - upper (%)** Not applicable.

**Flammability limit - upper (%) temperature** Not applicable.

**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.

**Density** 8.31 g/cm<sup>3</sup> estimated

<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Other data</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.
<b>Viscosity</b>	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>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.
<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>	Not relevant, due to the form of the product.
<b>Ingestion</b>	Expected to be a low ingestion hazard.

**Symptoms** May cause an allergic skin reaction. Prolonged exposure may cause chronic effects.

### Information on toxicological effects

<b>Acute toxicity</b>	None known.
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Not likely, due to the form of the product.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	May cause sensitization by skin contact.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	Suspected of causing cancer.

#### ACGIH Carcinogens

Nickel (CAS 7440-02-0) A5 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.

<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	May cause damage to organs (respiratory system) 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

<b>Ecotoxicity</b>	No ecotoxicity data noted for the ingredient(s).
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<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulation</b>	Not available.
<b>Mobility in soil</b>	Not available.
<b>Other hazardous effects</b>	Not available.

### 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>Residual waste</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.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.

### 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 available.

### 15. Regulatory information

**Applicable regulations** This material safety data sheet was prepared in accordance with the Regulation of Labeling and Hazard Communication of Hazardous Chemicals.

#### Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

Chromium (CAS 7440-47-3)	Listed.
Nickel (CAS 7440-02-0)	Listed.

#### Priority Management Chemical List (Regulations on Handling Priority Managed Chemicals), as amended

Chromium (CAS 7440-47-3)	
Nickel (CAS 7440-02-0)	

#### Toxic Chemical Substances (TCS) List (EPA Toxic Substances Notice No. 0960095331E, Tables 1-3, Dec. 17, 2007, as amended)

Not listed.

#### Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Chromium (CAS 7440-47-3)	Listed.
Nickel (CAS 7440-02-0)	Listed.

#### Specified Hazardous Chemicals (Guidelines for Prevention of Danger Posed by Special Hazardous Chemicals (CLA No. 659306)

Nickel (CAS 7440-02-0)	Class 3 Category C
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#### GHS Classification List: GHS implementation phase 1, 2 and 3 (CLA No. 0980145063, 0990146707, and 1020146801)

Chromium (CAS 7440-47-3)	
Nickel (CAS 7440-02-0)	

#### International regulations

##### Stockholm Convention

Not applicable.

##### Rotterdam Convention

Not applicable.

##### Montreal Protocol

Not applicable.

##### Kyoto 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****References**

ACGIH  
 EPA: ACQUIRE database  
 NLM: Hazardous Substances Data Base  
 US. IARC Monographs on Occupational Exposures to Chemical Agents  
 Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)  
 Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)  
 Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)  
 Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)  
 Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)

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**Prepared by**

Not available.