



SAFETY DATA SHEET

MATERION

1. Product and company identification

Name of the chemical	Nickel Chromium Targets
Other means of identification	
SDS number	G15
Recommended use of the chemical and restrictions on use	
Recommended use	Manufacture of computer, electronic and optical products, electrical equipment Scientific research and development Other: Manufacture of medical and defense equipment
Recommended restrictions	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Manufacturer/Importer/Supplier /Distributor information	Materion Advanced Materials Germany GmbH
Address	Borsigstrasse 10 Alzenau 63755 Germany
Telephone	49.60.23.91.82.0
E-mail	Materion.Germany@materion.com
Contact person	Hermann Schmiing
Emergency telephone number	49.60.23.91.82.0

2. Hazards identification

Hazard classification	
Physical hazards	Not classified.
Health hazards	Sensitization, skin Category 1 Carcinogenicity Category 2 Specific target organ toxicity, repeated exposure Category 1 (Respiratory system)
Environmental hazards	Not classified.

Label elements

Symbols



Signal word

Danger

Hazard statement

May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

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. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.

Response

If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If experiencing respiratory symptoms: Call a poison center/doctor.

Storage

Store locked up.

Disposal

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

Other hazards

None known.

Supplemental information

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

Inhalation	Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help.
Skin contact	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.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.
Ingestion	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

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

6. Accidental release measures

Personal precautions As supplied, this product poses no special release issues.

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

Spill cleanup methods For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling 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.

Storage 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

Taiwan. OELs (Standards of Permissible Exposure Limits at Workplace, OSHA No. 10302007931), as amended

Components	Type	Value
Chromium (CAS 7440-47-3)	STEL	2 mg/m3
Nickel (CAS 7440-02-0)	STEL	2 mg/m3

Taiwan. OELs. (Standards of Permissible Exposure Limits at Workplace)

Components	Type	Value
Chromium (CAS 7440-47-3)	TWA	1 mg/m3
Nickel (CAS 7440-02-0)	TWA	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m3	
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m3	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 ³ estimated

Solubility(ies)

Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not applicable.
Evaporation rate	Not applicable.

Other data

Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Viscosity	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
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 acids.
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	May cause an allergic skin reaction.
Eye contact	Not relevant, due to the form of the product.
Ingestion	Expected to be a low ingestion hazard.

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

Information on toxicological effects

Acute toxicity	None known.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
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	May cause sensitization by skin contact.

Germ cell mutagenicity Not classified.

Carcinogenicity Suspected of causing cancer.

ACGIH Carcinogens

Chromium (CAS 7440-47-3)	A4 Not classifiable as a human carcinogen.
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.

Reproductive toxicity Not classified.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs (respiratory system) through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged exposure may cause chronic effects.

12. Ecological information

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

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.
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.
Local disposal regulations	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.

Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Chromium (CAS 7440-47-3) Listed.

Nickel (CAS 7440-02-0) Listed.

Guidelines for Prevention of Danger Posed by Specified Hazardous Chemicals

Nickel (CAS 7440-02-0) Class 3 Category C

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 Additional information is given in the Safety Data Sheet.

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

16. Other information

References

ACGIH

EPA: AQUIRE 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)

Issued by

Not available.

Prepared by

Not available.

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