MATERION

SAFETY DATA SHEET

1. Product and company identification

Name of the chemical Tantalum Chromium Alloy Bar

Other means of identification

SDS number H01

Recommended use of the chemical and restrictions on use

Recommended use Manufacture of computer, electronic and optical products, electrical equipment
Other: Manufacture of medical and defense equipment Scientific research and development

Recommended restrictions Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Consumer uses: Private households (= general public = consumers)

Manufacturer/Importer/Supplier/ Distributor information Materion Newton Inc.

Address 6070 Parkland Boulevard
Mayfield Heights OH 44124
United States

Telephone 1+216.383.4019

E-mail ehs@materion.com

Contact person Theodore Knudson

Emergency telephone number See Section 16.

2. Hazards identification

Hazard classification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

Label elements

Symbols None.

Signal word None.

Hazard statement 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.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

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 (%)
Chromium	7440-47-3	1 - 3

4. First aid measures

First aid measures for different exposure routes

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

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

Eye contact Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms and effects	None known.
Personal protection for first-aid responders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Notes to physician	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

5. Fire-fighting measures

Extinguishing media	Water fog. Foam. Dry chemical powder. Dry sand.
Extinguishing media to avoid	Carbon dioxide (CO2).
Specific hazards during fire fighting	This product is not flammable.
Special fire fighting procedures	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Use protective equipment appropriate for surrounding materials.
General fire hazards	No unusual fire or explosion hazards noted.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. 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 SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Spill cleanup methods	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling	Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Storage	Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Keep in an area equipped with sprinklers. 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)

Material	Type	Value	Form
Tantalum Chromium Alloy Bar	STEL	10 mg/m3	Dust.
	TWA	5 mg/m3	Dust.

Components	Type	Value
Chromium (CAS 7440-47-3)	STEL	2 mg/m3
	TWA	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m3	Inhalable fraction.

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

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. 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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn.

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 Wear suitable protective clothing.

Respiratory protection Wear respirator with dust filter.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. 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.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Solid.

Color Dark grey.

Odor None.

Odor threshold Not applicable.

Melting point/freezing point 3452 °F (1900 °C) estimated / Not applicable.
5424.8 °F (2996 °C)

pH Not applicable.

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

Flammability (solid, gas) Not applicable. Flammable solid.

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 - upper (%) Not applicable.

Explosive limit - lower (%) Not applicable.

Explosive limit - upper (%) Not applicable.

Vapor pressure Not applicable.

Vapor density Not applicable.

Density 15.30 g/cm3 estimated

Solubility(ies)

Solubility (water) Insoluble

Partition coefficient (n-octanol/water) Not applicable.

Evaporation rate	Not applicable.

Other data

Explosive properties	Not explosive.
Flammability	Not applicable.
Kinematic viscosity	Not applicable.
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 oxidizing agents. Fluorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Not relevant, due to the form of the product.
Ingestion	Expected to be a low ingestion hazard.
Symptoms	None known.

Information on toxicological effects

Acute toxicity	None known.
Skin corrosion/irritation	Not likely, due to the form of the product.
Serious eye damage/eye irritation	None known.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	None known.

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	No data is available on the degradability of this substance.
Bioaccumulation	No data available.
Mobility in soil	The product is immiscible with water and will spread on the water surface.

Other hazardous 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.

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 applicable.

15. Regulatory information

Applicable regulations Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste
Regulations for the Labeling and Hazard Communication of Hazardous Chemicals
Toxic Chemical Substances Control Act
Toxic Chemical Substances Labeling and Materials Safety Data Sheets 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.

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

Chromium (CAS 7440-47-3)

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.

GHS Classification List: GHS implementation phase 1, 2 and 3 (CLA No. 0980145063, 0990146707, and 1020146801)

Chromium (CAS 7440-47-3)

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

Country(s) or region	Inventory name	On inventory (yes/no)*
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: 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)

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Prepared by

Not available.