

**MATERION****1. Chemical and company identification**

Name of chemical (Product name) Aluminum Scandium Targets

Supplier's company name, address and phone number

Company name Materion Advanced Materials

Address 6070 Parkland Boulevard  
Mayfield Heights, OH 44124 United States

Contact person Theodore Knudson

Telephone EH&S 1.216.383.4019

e-mail address ehs@materion.com

Emergency telephone number See Section 16.

Reference number G80

**2. Hazards identification****GHS classification**

The product is not classified according to GHS.

**GHS label elements**

Pictograms None.

Signal words 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 Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response If exposed or concerned: Call a poison center/doctor.

Storage Store locked up.

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

Other hazards which do not result in classification None known.

Supplemental information For further information, please contact the Product Stewardship Department at +1.216.383.4019.

**Main symptoms and emergency overview**

Main symptoms None known.

Emergency overview 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.

**3. Composition/information on ingredients**

Substance or mixture Mixture

Components	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Aluminum	7429-90-5			60 - 80
Scandium	7440-20-2			20 - 40

Chemical formula Al (7429-90-5), Sc (7440-20-2)

**4. First aid measures**

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

If on skin Wash off with soap and water. Get medical attention if irritation develops and persists.

If in eyes Do not rub eyes.

If swallowed	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Prolonged exposure may cause chronic effects. None known.
Protection of first-aid responders	If you feel unwell, seek medical advice (show the label where possible). 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. Keep victim under observation. Symptoms may be delayed.

## 5. Fire-fighting measures

Extinguishing media	Powder. Dry sand.
Extinguishing media to avoid	Water. Do not use water jet as an extinguisher, as this will spread the fire. Carbon dioxide (CO <sub>2</sub> ).
Specific hazards	None known.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Wear suitable protective equipment.
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, protective equipment and emergency procedures	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.
Methods and materials for containment and cleaning 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. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

## 7. Handling and storage

Handling	
Technical measures (e.g. Local and general ventilation)	Provide appropriate exhaust ventilation at places where dust is formed.
Safe handling advice	Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.
Contact avoidance measures	For further information, please refer to section 10 of the SDS.
Hygiene measures	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.
Storage	
Safe storage conditions	Store locked up. Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).
Safe packaging materials	Store in original tightly closed container.

## 8. Exposure controls/personal protection

Control parameters	Follow standard monitoring procedures.
--------------------	--

### Occupational exposure limits

#### Japan. OELs - ISHL. (Workplace Environment Assessment Standards)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TLV	0.025 mg/m <sup>3</sup>	Dust.

#### Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	2 mg/m <sup>3</sup>	Total dust.

Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits)

Components	Type	Value	Form
		0.5 mg/m <sup>3</sup>	Respirable dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.

**Engineering measures**

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 material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

**Personal protective equipment**

- Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.
- Hand protection** Wear gloves to prevent metal cuts and skin abrasions during handling.
- Eye protection** If contact is likely, safety glasses with side shields are recommended.
- Skin and body protection** Use of an impervious apron is recommended.

**9. Physical and chemical properties**

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Silver-white.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.
<b>Melting point/freezing point</b>	1220 °F (660 °C) estimated / Not applicable.
<b>Boiling point, initial boiling point, and boiling range</b>	Not applicable.
<b>Combustibility</b>	None known.
<b>Lower and upper explosion limit / flammability limit</b>	
<b>Flammability limit - lower (%)</b>	Not applicable.
<b>Flammability limit - lower (%) temperature</b>	Not applicable.
<b>Flammability limit - upper (%)</b>	Not applicable.
<b>Flammability limit - upper (%) temperature</b>	Not applicable.
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Kinematic viscosity</b>	Not applicable.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not applicable.

Vapor pressure	Not applicable.
Density and/or relative density	
Density	2.70 g/cm <sup>3</sup> estimated
Relative density	Not applicable.
Vapor density	Not applicable.
Particle characteristics	Not applicable.
Other information	
Evaporation rate	Not applicable.
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	2.7 estimated
Viscosity (Coefficient of viscosity)	Not applicable.

## 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	Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

## 11. Toxicological information

Acute toxicity	None known.
Skin corrosion/irritation	Not likely, due to the form of the product.
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	Not classifiable as to carcinogenicity to humans.
ACGIH Carcinogens	
Aluminum (CAS 7429-90-5)	A4 Not classifiable as a human carcinogen.
Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

## 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 product.
Bioaccumulation	No data available.
Mobility in soil	The product is immiscible with water and will spread on the water surface.
Hazardous to the ozone layer	No data available.
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

<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>	Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

### 14. Transport information

<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
<b>National regulations</b>	Follow regulation in section 15 for domestic transportation.

### 15. Regulatory information

<b>Industrial Safety and Health Act</b>	
<b>Notifiable substances</b>	
ALUMINUM	Table 9 Ordinance No. 37 60 - 80 %
<b>Labeling substances</b>	
ALUMINIUM AND ITS WATER-SOLUBLE SALTS	60 - 80 %
<b>Poisonous and Deleterious Substances Control Act</b>	
<b>Specified poisonous substances</b>	
Not regulated.	
<b>Poisonous substances</b>	
Not regulated.	
<b>Deleterious substances</b>	
Not regulated.	
<b>Act on the Regulation of Manufacture and Evaluation of Chemical Substances</b>	
<b>Class I specified chemical substances</b>	
Not regulated.	
<b>Class II specified chemical substances</b>	
Not regulated.	
<b>Monitoring chemical substances</b>	
Not regulated.	
<b>Priority Assessment Chemical Substances (PACs)</b>	
Not regulated.	
<b>Reporting Exempted Substances</b>	
Not regulated.	
<b>Law concerning Pollutant Release and Transfer Register</b>	
<b>Specified class 1 substances (substance name, ordinance number and content)</b>	
Not regulated.	
<b>Class 1 substances (substance name, ordinance number and content)</b>	
Not regulated.	
<b>Class 2 substances (substance name, ordinance number and content)</b>	
Not regulated.	
<b>Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule</b>	Not regulated.
<b>Air Law, Enforcement Rule</b>	Not regulated.

**Explosives Control Act**

Not regulated.

**16. Other information****Bibliography**

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012  
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits  
JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"  
JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)  
National Toxicology Program (NTP) Report on Carcinogens

**Further information**

Transportation Emergency  
Call Chemtrec at:  
International: 703.741.5970  
Spain: 900.868.538  
Switzerland: 0800.564.402  
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059

**Disclaimer**

This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.