

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

Name of chemical (Product name)	Aluminum Scandium Products		
Company name	Materion Advanced Materials Group		
Address	42 Mt. Ebo Road South Brewster, NY 10509 United States		
Telephone	1+845.279.0900		
Emergency telephone number	Chemtrec	1+703.527.3887	
Reference number	340		

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

<b>Physical hazards</b>	The product is not classified according to GHS.		
<b>Health hazards</b>	Specific target organ toxicity, single exposure	Category 1 (respiratory system)	
	Specific target organ toxicity, repeated exposure	Category 1 (respiratory system)	
<b>Environmental hazards</b>	The product is not classified according to GHS.		

**GHS label elements****Symbols****Signal words**

Danger

**Hazard statement**

Causes damage to organs (respiratory system). Causes damage to organs (respiratory system) through prolonged or repeated exposure.

**Precautionary statement**

<b>Prevention</b>	Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.
<b>Response</b>	IF exposed or concerned: 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.

**Other hazards which do not result in classification**

None known.

**Supplemental information**

100% of the mixture consists of component(s) of unknown acute oral toxicity. 100% of the mixture consists of component(s) of unknown acute dermal toxicity. 100% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

**Main symptoms and emergency overview**

<b>Main symptoms</b>	Prolonged exposure may cause chronic effects.
<b>Emergency overview</b>	Causes damage to organs.

**3. Composition/information on ingredients**

Substance or mixture Mixture

Components	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Aluminum	7429-90-5			75 - 99.9
Scandium	7440-20-2			0.1 - 25

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	Rinse with water. Get medical attention if irritation develops and persists.
If swallowed	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Prolonged exposure may cause chronic effects.
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	Do not use water jet as an extinguisher, as this will spread the fire. Carbon dioxide (CO <sub>2</sub> ).
Specific hazards	During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
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 measures	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.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Methods or materials for containment and cleaning up	Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

## 7. Handling and storage

<b>Handling</b>	
Technical measures (e.g. Local and general ventilation)	Provide adequate ventilation.
Safe handling advice	Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Contact avoidance measures	Strong oxidizing agents.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.
<b>Storage</b>	
Safe storage conditions	Store locked up.
Safe packaging materials	Store in original tightly closed container.

## 8. Exposure controls/personal protection

### 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.
		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 (typically 10 air changes per hour) 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.

### Personal protective equipment

<b>Respiratory protection</b>	Wear positive pressure self-contained breathing apparatus (SCBA).
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Eye protection</b>	If contact is likely, safety glasses with side shields are recommended.
<b>Skin and body protection</b>	Use of an impervious apron is recommended.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Not available.

**Odor** Not available.

**pH** Not available.

**Melting point/Freezing point** 1220 °F (660 °C) estimated

**Boiling point, initial boiling point, and boiling range** 4220.6 °F (2327 °C) estimated

**Flash point** Not available.

**Combustion characteristics (solid, gas)** Not available.

### Upper/lower flammability or explosive limits

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

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

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** 0.00001 hPa estimated

**Vapor density** Not available.

**Specific gravity** 2.7 estimated

### Solubility(ies)

**Solubility (water)** Not available.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity (Coefficient of viscosity)** Not available.

### Other information

**Density** 2.70 g/cm<sup>3</sup> estimated

**Explosive properties** Not explosive.

**Oxidizing properties** Not oxidizing.

## 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.

<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 oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

<b>Acute toxicity</b>	Not known.
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

### Carcinogenicity

#### ACGIH Carcinogens

Aluminum (CAS 7429-90-5)

A4 Not classifiable as a human carcinogen.

<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Causes damage to organs (respiratory system).
<b>Specific target organ toxicity - repeated exposure</b>	Causes damage to organs (respiratory system) through prolonged or repeated exposure.
<b>Aspiration hazard</b>	Not an aspiration hazard.

## 12. Ecological information

<b>Ecotoxicity</b>	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.
<b>Persistence and degradability</b>	
<b>Bioaccumulation</b>	No data available.
<b>Mobility in soil</b>	No data available for this product.
<b>Hazardous to the ozone layer</b>	No data available.
<b>Other hazardous 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

Dispose in accordance with all applicable 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>	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

### 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.

National regulations Follow regulation in section 15 for domestic transportation.

## 15. Regulatory information

### Industrial Safety and Health Act

#### Notifiable substances

ALUMINUM

Table 9 Ordinance No. 37 75 - 100 %

#### Labeling substances

ALUMINIUM AND ITS WATER-SOLUBLE SALTS

75 - 100 %

### Poisonous and Deleterious Substances Control Act

#### Specified poisonous substances

Not regulated.

#### Poisonous substances

Not regulated.

#### Deleterious substances

Not regulated.

### Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

#### Class I specified chemical substances

Not regulated.

#### Class II specified chemical substances

Not regulated.

#### Monitoring chemical substances

Not regulated.

#### Priority Assessment Chemical Substances (PACs)

Not regulated.

#### Reporting Exempted Substances

Not regulated.

### Law concerning Pollutant Release and Transfer Register

#### Specified class 1 substances (substance name, ordinance number and content)

Not regulated.

#### Class 1 substances (substance name, ordinance number and content)

Not regulated.

#### Class 2 substances (substance name, ordinance number and content)

Not regulated.

### Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule

Not regulated.

### Air Law, Enforcement Rule

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  
National Toxicology Program (NTP) Report on Carcinogens  
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits  
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012  
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)

Materion Advanced Materials Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

