



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

<b>Product identifier</b>	<b>Aluminum powder</b>	
<b>Other means of identification</b>		
SDS number	1AG	
Materion Code	1AG	
CAS number	7429-90-5	
<b>Recommended use</b>	Not available.	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	Materion Advanced Chemicals Inc.	
<b>Address</b>	407 N 13th Street 1316 W. St. Paul Avenue Milwaukee, WI 53233 United States	
<b>Telephone</b>	414.212.0290	
<b>E-mail</b>	advancedmaterials@materion.com	
<b>Contact person</b>	Laura Hamilton	
<b>Emergency phone number</b>	Chemtrec	800.424.9300
<b>Supplier</b>	Not available.	

## 2. Hazard identification

<b>Physical hazards</b>	Flammable solids	Category 1
	Pyrophoric solids	Category 1
	Self-heating substances and mixtures	Category 1
	Substances and mixtures which, in contact with water, emit flammable gases	Category 2
<b>Health hazards</b>	Not classified.	
<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

### Label elements



<b>Signal word</b>	Danger	
<b>Hazard statement</b>	In contact with water releases flammable gas. May form combustible dust concentrations in air (under certain conditions).	
<b>Precautionary statement</b>		
<b>Prevention</b>	Do not allow contact with air. Do not allow contact with water. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.	
<b>Response</b>	Get medical advice/attention if you feel unwell.	

<b>Storage</b>	Store in a dry place. Store in a closed container.
<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>	None.

### 3. Composition/information on ingredients

#### Substances

Chemical name	Common name and synonyms	CAS number	%
Aluminum, Elemental		7429-90-5	100

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

#: This substance has been assigned Community workplace exposure limit(s).

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. \*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

**Composition comments** The full text for all R- and H-phrases is displayed in section 16.

### 4. First-aid measures

<b>Inhalation</b>	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if any discomfort continues. If breathing is difficult, give oxygen.
<b>Skin contact</b>	Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes.
<b>Ingestion</b>	Rinse mouth thoroughly. Have exposed individual drink sips of water. DO NOT induce vomiting. Get medical attention immediately.
<b>Most important symptoms/effects, acute and delayed</b>	Nausea. Headache. Shortness of breath. Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically.
<b>General information</b>	If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Foam. Dry chemical powder. Dry sand. Carbon dioxide (CO <sub>2</sub> ). Dry chemical, soda ash, lime or DRY sand.
<b>Unsuitable extinguishing media</b>	Water. Do not use water jet as an extinguisher, as this will spread the fire. Carbon dioxide (CO <sub>2</sub> ).
<b>Specific hazards arising from the chemical</b>	Pressurized container may explode when exposed to heat or flame. In contact with water releases flammable gas. Contact with water may cause an explosion or may produce a flammable gas. During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear full protective clothing including self contained breathing apparatus. Structural firefighters protective clothing will only provide limited protection.

**Fire fighting equipment/instructions**

In case of fire and/or explosion do not breathe fumes. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fires involving Tanks or Car/Trailer Loads: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Do not get water inside container. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Water runoff can cause environmental damage.

**Specific methods**

Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In the event of fire and/or explosion do not breathe fumes.

**General fire hazards**

Flammable solid. Catches fire spontaneously if exposed to air. Self-heating; may catch fire. In contact with water releases flammable gas. No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Consider initial downwind evacuation for at least 300 meters (990 feet). Isolate spill or leak area immediately for at least 100 to 200 meters (330 to 660 feet) in all directions. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Use only non-sparking tools. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**

Do not get water on spilled substance or inside containers. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Neutralize with lime or soda ash. Collect spillage. 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. Prevent entry into waterways, sewer, basements or confined areas. 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.

**Environmental precautions**

Avoid release to the environment. Refer to special instructions/safety data sheets. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Do not allow contact with air. Open container carefully and only in a dry, oxygen-free or inert atmosphere. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Handle under inert gas. Minimize dust generation and accumulation. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. Explosion-proof general and local exhaust ventilation. Keep cool. Do not breathe dust. Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. When using do not eat or drink. Wear appropriate personal protective equipment. Wash thoroughly after handling. Avoid release to the environment. Do not empty into drains. Use appropriate container to avoid environmental contamination. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Never allow product to get in contact with water during storage. The pressure in sealed containers can increase under the influence of heat. Keep away from heat and sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Use appropriate container to avoid environmental contamination. Store this product in air-tight containers away from sources of heat and light. Store in a closed container away from incompatible materials. Store in tightly closed container. Store in a well-ventilated place. Store in a dry place. Store away from other materials. Maintain air gap between stacks/pallets. Keep away from food, drink and animal feedingstuffs. Keep in an area equipped with sprinklers. Use care in handling/storage.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

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

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Material	Type	Value	Form
Aluminum, Elemental (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Pyrophoric powder.
		10 mg/m <sup>3</sup>	Dust.

#### Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

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

#### Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

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

#### Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

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

#### Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Material	Type	Value	Form
Aluminum, Elemental (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Welding fume.

10 mg/m<sup>3</sup>

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Explosion-proof general and local exhaust ventilation. 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. 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.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Do not get in eyes. Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Other</b>	Avoid contact with the skin. Wear appropriate chemical resistant clothing. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Chemical resistant gloves.
<b>Respiratory protection</b>	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Do not get in eyes. When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. 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

<b>Appearance</b>	Powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	Not available.
<b>Odor</b>	Not available.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	1220 °F (660 °C)
<b>Initial boiling point and boiling range</b>	4220.6 °F (2327 °C)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available. Flammable solid.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.

<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	< 0.0000001 kPa at 25 °C
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Density</b>	2.70 g/cm <sup>3</sup> estimated
<b>Explosive properties</b>	Not explosive.
<b>Heat of combustion (NFPA 30B)</b>	0 kJ/g
<b>Molecular formula</b>	Al
<b>Molecular weight</b>	26.98 g/mol
<b>Oxidizing properties</b>	Not oxidizing.
<b>Specific gravity</b>	2.7

## 10. Stability and reactivity

<b>Reactivity</b>	May be corrosive to metals. In contact with water releases flammable gas.
<b>Chemical stability</b>	Instability caused by moisture, heat, ignition sources.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Avoid contact with acids and oxidizing substances. Exposure to air. Exposure to moisture. Keep away from combustible material.
<b>Incompatible materials</b>	Strong oxidizing agents. Air. Halogenated materials.
<b>Hazardous decomposition products</b>	Metal oxides.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Irritating to respiratory system. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
<b>Eye contact</b>	Harmful in contact with eyes.
<b>Ingestion</b>	Due to lack of data the classification is not possible.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Dusts may irritate the respiratory tract, skin and eyes. Coughing. Discomfort in the chest. Shortness of breath.
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### Information on toxicological effects

<b>Acute toxicity</b>	Not known.
<b>Skin corrosion/irritation</b>	Irritating to skin.
<b>Serious eye damage/eye irritation</b>	Harmful in contact with eyes. Direct contact with eyes may cause temporary irritation.

## Respiratory or skin sensitization

### Canada - Alberta OELs: Irritant

Aluminum, Elemental (CAS 7429-90-5) Irritant

**Respiratory sensitization** Due to lack of data the classification is not possible.

**Skin sensitization** Irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

**Germ cell mutagenicity** Due to lack of data the classification is not possible.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

### ACGIH Carcinogens

Aluminum, Elemental (CAS 7429-90-5) A4 Not classifiable as a human carcinogen.

### Canada - Manitoba OELs: carcinogenicity

Aluminum, Elemental (CAS 7429-90-5) Not classifiable as a human carcinogen.

**Reproductive toxicity** Due to lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** Due to lack of data the classification is not possible.

**Specific target organ toxicity - repeated exposure** Causes damage to organs ( ) through prolonged or repeated exposure.

**Aspiration hazard** Due to lack of data the classification is not possible.

**Chronic effects** Hazardous by OSHA criteria. Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
Aluminum, Elemental (CAS 7429-90-5)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish	LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.16 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse 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** Consult authorities before disposal. This material and its container must be disposed of as hazardous waste. Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. After recovery of solvent dispose of residue as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** 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). Avoid discharge into water courses or onto the ground.

## 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.

## 14. Transport information

### TDG

UN number	UN1396
UN proper shipping name	ALUMINUM POWDER, UNCOATED
Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Packing group	II
Environmental hazards	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

### IATA

UN number	UN1396
UN proper shipping name	Aluminum powder, uncoated
Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
Packing group	II
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

### IMDG

UN number	UN1396
UN proper shipping name	Aluminum powder, uncoated
Transport hazard class(es)	
Class	4.3
Subsidiary risk	-
Label(s)	4.3
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

### IATA; IMDG; TDG



## 15. Regulatory information

### Canadian regulations

This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR. This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.



**Controlled Drugs and Substances Act**

Not regulated.

**Export Control List (CEPA 1999, Schedule 3)**

Not listed.

**Greenhouse Gases**

Not listed.

**Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)**

Aluminum, Elemental (CAS 7429-90-5)

**Precursor Control Regulations**

Not regulated.

**International regulations****Stockholm Convention**

Not applicable.

**Rotterdam Convention**

Not applicable.

**Kyoto protocol**

Not applicable.

**Montreal 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****Issue date** 09-12-2022**Version #** 01**Further information** HMIS® is a registered trade and service mark of the NPCA.

**References**

ACGIH  
EPA: AQUIRE database  
NLM: Hazardous Substances Data Base  
US. IARC Monographs on Occupational Exposures to Chemical Agents

## Disclaimer

Materion Advanced Chemicals Inc. 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. Additional information is given in the Material Safety Data Sheet. This safety data sheet was prepared in accordance with the Safety Data Sheet for Chemical Products (JIS Z 7250:2010).

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