

Material Safety Data Sheet

Aluminum, Sheet



Section 1. Product and Company Identification

Product name	: Aluminum, Sheet
Product code	: AX0635
Synonym	: None.
Material uses	: Other non-specified industry: Analytical reagent.
Manufacturer	: EMD Chemicals Inc. P.O. Box 70 480 Democrat Road Gibbstown, NJ 08027 856-423-6300 Technical Service Monday - Friday: 8:00 - 5:00 PM
Validation date	: 3/9/2007.
Print date	:
In case of emergency	: 800-424-9300 CHEMTREC (USA) 613-996-6666 CANUTEC (Canada) 24 Hours/Day: 7 Days/Week

Section 2. Hazards Identification

Physical state	: Solid. (Metal solid.)
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: WARNING! CAUSES DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, EYES, EYE, LENS OR CORNEA. INHALATION OF ALUMINUM IN DUST OR POWDER FORM MAY CAUSE IRRITATION AND HAS BEEN REPORTED AS A CAUSE OF PULMONARY FIBROSIS. ALUMINUM POWDER OR DUST IS A FLAMMABLE SOLID WHICH FORMS FLAMMABLE AND EXPLOSIVE MIXTURES WITH AIR. Contact with water liberates extremely flammable gases.
Routes of entry	: Warnings apply to aluminum in its powdered form. : Inhalation. Ingestion.
Potential acute health effects	
Eyes	: Dust may cause mechanical irritation to eyes.
Skin	: No known significant effects or critical hazards.
Inhalation	: Inhalation of finely divided powder has been reported as a cause of pulmonary fibrosis.
Ingestion	: No known significant effects or critical hazards.
Carcinogenic effects	: No known significant effects or critical hazards.
Mutagenic effects	: No known significant effects or critical hazards.
Teratogenicity / Reproductive toxicity	: No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	: Repeated or prolonged exposure to the substance can produce target organs damage.
See toxicological information (section 11)	

Section 3. Composition/Information on Ingredients

United States

Name	CAS number	% by Weight
Aluminum	7429-90-5	100

Section 4. First Aid Measures

Eye contact	: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Inhalation	: Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if symptoms occur. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Ingestion	: Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if symptoms occur. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire Fighting Measures

Flammability of the product	: This material is flammable in powder form only.
Products of combustion	: Some metallic oxides.
Extinguishing media	
Suitable	: Use an extinguishing agent suitable for the surrounding fire.
Not suitable	: None known.
Special exposure hazards	: Not available.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Special remarks on fire hazards	: This material is flammable in powder form only.
Special remarks on explosion hazards	: Fine powder forms flammable and explosive mixtures in air.

Section 6. Accidental Release Measures

Personal precautions	: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	: If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

Section 7. Handling and Storage

Handling	: Wash thoroughly after handling. Do not breathe dust.
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Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Product name

Exposure limits

United States

Aluminum

ACGIH TLV (United States, 1/2006). Notes: as Al
TWA: 5 mg/m³ 8 hour/hours.
TWA: 5 mg/m³ 8 hour/hours. Form: Fume
OSHA PEL (United States, 8/1997). Notes: as Al
TWA: 5 mg/m³ 8 hour/hours. Form: Respirable fraction
TWA: 15 mg/m³ 8 hour/hours. Form: Total dust
OSHA PEL 1989 (United States, 3/1989). Notes: as Al
TWA: 15 mg/m³ 8 hour/hours. Form: Dust
TWA: 5 mg/m³ 8 hour/hours. Form: Pyrophoric
TWA: 5 mg/m³ 8 hour/hours. Form: Respirable fraction
ACGIH TLV (United States, 1/2006).
TWA: 10 mg/m³ 8 hour/hours. Form: Dust
NIOSH REL (United States, 12/2001).
TWA: 5 mg/m³ 10 hour/hours. Form: Respirable fraction
TWA: 10 mg/m³ 10 hour/hours. Form: Total
OSHA PEL 1989 (United States, 3/1989). Notes: as Al
As determined from breathing-zone air samples
TWA: 5 mg/m³ 8 hour/hours. Form: Welding fume

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control airborne levels. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and Chemical Properties

- Physical state** : Solid. (Metal solid.)
- Flash point** : Closed cup: 644.85°C (1192.7°F).
- Color** : Grayish-white.
- Molecular weight** : 26.98 g/mole
- Molecular formula** : Al
- Boiling/condensation point** : 2450°C (4442°F)
- Melting/freezing point** : 660°C (1220°F)
- Relative density** : 2.7 (Water = 1)

Section 10. Stability and Reactivity

- Stability and reactivity** : The product is stable.
- Incompatibility with various substances** : Reactive or incompatible with the following materials: acids, alkalis and moisture. Contact with water liberates extremely flammable gases. (Aluminum powders)
- Hazardous polymerization** : Will not occur.
- Conditions of reactivity** : This material is flammable in powder form only.
Fine powder forms flammable and explosive mixtures in air.

Section 11. Toxicological Information

Toxicity data

- Chronic effects on humans** : Causes damage to the following organs: upper respiratory tract, skin, eyes, eye, lens or cornea.
- Other toxic effects on humans** : No specific information is available in our database regarding the other toxic effects of this material to humans.
- Specific effects**
- Carcinogenic effects** : No known significant effects or critical hazards.
- Mutagenic effects** : No known significant effects or critical hazards.
- Teratogenicity / Reproductive toxicity** : No known significant effects or critical hazards.
- Sensitization**
- Ingestion** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Eyes** : Dust may cause mechanical irritation to eyes.
- Skin** : No known significant effects or critical hazards.

Section 12. Ecological Information

Ecotoxicity data

United States

Product/ingredient name	Species	Period	Result
Aluminum	Oncorhynchus mykiss (LC50)	96 hour/hours	0.12 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	0.16 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	0.31 mg/l

- Environmental precautions** : No known significant effects or critical hazards.
- Products of degradation** : Some metallic oxides.
- Toxicity of the products of biodegradation** : The product itself and its products of degradation are not toxic.

Section 13. Disposal Considerations


- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport Information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	UN1396	ALUMINUM POWDER, UNCOATED (See Section Section 16)	4.3	II		Not available.

PG* : Packing group

Section 15. Regulatory Information

United States

HCS Classification : Target organ effects

U.S. Federal regulations : TSCA 8(b) inventory: Listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Aluminum

(SARA classification for powdered form only.)

SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

Aluminum: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

(SARA classification for powdered form only.)

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

Product name	CAS number	Concentration	
			Form R - Reporting requirements :
Aluminum	7429-90-5	100	
			Supplier notification :
Aluminum	7429-90-5	100	

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : Pennsylvania RTK: Aluminum : (special hazard, environmental hazard, generic environmental hazard)
Massachusetts RTK: Aluminum
New Jersey: Aluminum

Canada

WHMIS (Canada) : Class B-6: Reactive flammable material
Class D-2B: Material causing other toxic effects (Toxic).
WHMIS classifications apply to aluminum in powdered form.

CEPA DSL/CEPA NDSL : CEPA DSL: Aluminum

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU regulations

Hazard symbol/symbols :



Risk phrases : R15- Contact with water liberates extremely flammable gases.
R17- Spontaneously flammable in air.

Safety phrases : S2- Keep out of the reach of children.
S7/8- Keep container tightly closed and dry.

S43- In case of fire, use [***].

International regulations

International lists

: Australia (NICNAS): Aluminum

China: Aluminum

Germany water class: Aluminum

Korea (TCCL): Aluminum

Philippines (RA6969): Aluminum

Section 16. Other Information

Label requirements

: WARNING!

CAUSES DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, EYES, EYE, LENS OR CORNEA.

INHALATION OF ALUMINUM IN DUST OR POWDER FORM MAY CAUSE IRRITATION AND HAS BEEN REPORTED AS A CAUSE OF PULMONARY FIBROSIS.

ALUMINUM POWDER OR DUST IS A FLAMMABLE SOLID WHICH FORMS FLAMMABLE AND EXPLOSIVE MIXTURES WITH AIR.

Contact with water liberates extremely flammable gases.

Warnings apply to aluminum in its powdered form.

**National Fire
Protection
Association (U.S.A.)**

0 **Flammability**

Health 0 1 **Instability**

W **Special**

Other special considerations : DOT is for aluminum powders. DOT for other forms of aluminum is CHEMICALS, N.O.S.

Notice to reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.
