



MATERIAL SAFETY DATA SHEETS

19

Aluminium (powder)

1. CHEMICAL IDENTITY

Chemical Name : Aluminium (powder)

Chemical Classification: Flammable

Trade Name :

Synonyms: Aluminium, Aluminum metal, Aluminum powder, Elemental aluminum

Formula : Al

CAS No: 7429-90-5

UN No: 1396

Regulated Identification

Shipping Name : Aluminum powder, Coated

Hazchem Code : 4W

Codes / Label : Class 4.3, Flammable

Hazardous Waste ID No :

HAZARDOUS INGREDIENTS	C.A.S. No.	HAZARDOUS INGREDIENTS	C.A.S. No.
1 Aluminium (powder)	7429-90-5	3	
2		4	

2. PHYSICAL / CHEMICAL DATA

Boiling Pt. °C: 2327

Physical State: Solid, powder.

Appearance: Light, silvery-white to gray, metallic, powder.

Melting Pt °C: 660

Vapour Pressure @ 35°C mmHg: 1 mmHg at 1284°C

Odour: Odourless

Vapour Density(Air =1): >1

Solubility in water at 30°C g/100ml: Insoluble

Others: Soluble in HCl, H₂SO₄, and alkalis.

Specific Gravity (Water =1): 2.7 g/cm³

pH :

3. FIRE / EXPLOSION HAZARD DATA

Flammability : Yes

LEL:

Flash Point °C in OC:

TDG Flammability:

UEL:

Flash Point °C in CC: 645

Autoignition Temperature °C : 400

Explosion sensitivity to impact:

Explosion sensitivity to static Electricity: Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge.

Hazardous Combustion Products : Fire will produce irritating, corrosive and/or toxic gases.

Hazardous Polymerization : Will not occur.

Combustible Liquid:

Explosive Material: Yes

Corrosive Material

Flammable Material: Yes

Oxidiser :

Others:

Pyrophoric Material:

Organic Peroxide :

4. REACTIVITY DATA

Chemical Stability : Stable under ordinary conditions of use and storage. Reacts with some acids and caustic solutions to produce hydrogen. Combines vigorously or explosively with water.

Incompatibility with other material : Acids, alkalis, acid chlorides, halogenated agents, metal salts, strong oxidizing agents.

Reactivity : Contact with water liberates highly flammable gases. A violent reaction or flaming is likely in the reaction of chromic anhydride and aluminum powder.

Hazardous : Aluminum oxide, aluminum fumes.

Reaction Products

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, skin, eyes and ingestion

Effects of Exposure / Symptoms:

Inhalation: May cause respiratory tract irritation. May cause lung damage. May cause respiratory difficulty and coughing. Skin: May cause skin irritation. Eyes: May cause eye irritation. Aluminum particles may cause corneal necrosis. Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause hemorrhaging of the digestive tract. May cause bone marrow damage.

Emergency Treatment :

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do not induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

LD50 (oral-rat) mg/kg:

STEL:

LC50 (rat) mg/kg:

Odour Threshold:

Permissible Exposure Limit: 15 mg/m³

TLV (ACGIH) : 10 mg/m³

NFPA Hazard	Health	Flammability	Reactivity	Special
Signals	1	3	1	

6. PREVENTIVE MEASURES

Personal Protective Equipment : Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Skin: Wear appropriate gloves to prevent skin exposure. Clothing: Wear appropriate protective clothing to minimize contact with skin.

Handling : Keep out of reach of children (if sold to general public). Keep container tightly closed and dry. Use only in a well ventilated area. Do not allow water to get into the container because of violent reaction. Do not allow contact with water. Keep from contact with moist air and steam. Wash thoroughly after handling.

Storage : Keep away from sources of ignition. Store in a cool, dry place. Keep away from water, flammable area. Keep away from acids. Do not store near alkaline substances.

Precautions : Conditions to avoid: Moisture, heat, flames, ignition sources and incompatibles. Avoid contact with skin and eyes.

7. EMERGENCY / FIRST AID MEASURES

FIRE:

Fire Extinguishing Media : Smother with dry sand, dry clay, dry ground limestone, or use approved Class D extinguishers. Do not use carbon dioxide or halogenated extinguishing agents. Do not use water.

Special Procedure : Large fires must be isolated and allowed to burn out, but small ones can be controlled by sand, talc, or sodium chloride.

Unusual Hazards : During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

EXPOSURE: First Aid Measures:

Inhalation: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do not induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Antidotes / Dosages:

SPILLS :

Steps To Be Taken : Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Do not expose spill to water. Cover with dry earth, dry sand or other non-combustible material.

Waste Disposal Method: Aluminum compounds are treated under anhydrous conditions to prevent violent reactions, recover solvent, and form Al compounds suitable for landfill by reaction with anhydrous hydrolysis agent, eg. calcium hydroxide.

8. ADDITIONAL INFORMATION / REFERENCES

Aluminium powder does not vaporize even at high temperatures, but finely divided aluminum dust is easily ignited. It is a good conductor of heat and electricity. Because aluminum is only sparingly absorbed from the gut, LD50 values for aluminum ingestion are unavailable, since death occurs from intestinal blockage due to precipitated aluminum species rather than systemic aluminum toxicity.

9. MANUFACTURERS / SUPPLIERS DATA

NAME OF FIRM :	Contact person
MAILING ADDRESS :	in Emergency :
TELEPHONE / TELEX NOS :	Local Bodies involved :
TELEGRAPHIC ADDRESS :	Standard Packing :
OTHERS :	Trem Card Details / Ref :

10. DISCLAIMER

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Total No. of Pages: 3