



**Specialized in chemicals**

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## **Material Safety Data Sheet**

### **Magnesium Powder**

#### **Section 1: Chemical Product and Company Identification**

**Name:** Aluminum Powder

**CAS:** 7429-90-5

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#### **Section 2: Composition and Information on Ingredients**

Chief constituents	Aluminum content	CAS NO.:
Aluminum	≥99.70%	7429-90-5

#### **Section 3: Hazards Identification**

Silver gray powder particle. Meet open flame, high temperature, easy cause combustion. Mixed with air can form explosive mixture. Meet moist air and water, water vapor, can generate flammable and explosive gases. React with acid, alkali or strong oxidizer, generate the flammable and explosive gas. Long-term inhalation deposition leads to the aluminum pneumoconiosis in lung.

Dangerous cargo grade:

Water-reactive; class 4.3

Inhalation pathway: Inhalation、skin contact

Health hazard: Long-time inhaled can cause aluminum pneumoconiosis.

It may cause skin irritation.

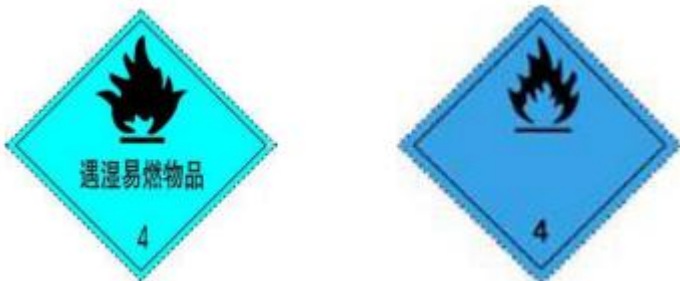
Environmental hazard: No data.

Explosion conditions:

- 1、Reacts with water、some chemicals to produce hydrogen.
- 2、Flammable, mixed with air can form explosive mixture.

Label element:

Pictorial chart:



Caution word: Warning

Dangers explain: Meet open flame, high temperature, easy cause combustion. Mixed with air can form explosive mixture. Meet moist air and water, water vapor, can generate flammable and explosive gases. React with acid, alkali or strong oxidizer, generate the flammable and explosive gas. Long-term inhalation deposition leads to the aluminum pneumoconiosis in lung.

Precaution explain:

Precaution:

Operation after received specific guidance, do not operate if you do not understand all the safety measures.

Keep away from heat, spark, open fire, hot surface. Using the tools which do not produce sparks.

Adopt prevent static electricity measure, container and accepting device grounding.

Use explosion proof type electric appliance, ventilation, illumination and other equipment.

Workplace cannot take food, drinking water, smoking.

Adorn anti-dust respirator.

Accident response:

Ingestion, drink full dose warm boiled water emetic, seek medical advice if it is serious.

Inhalation, remove to fresh air immediately.

Skin contact, wash exposed area with soap and water thorough-paced.

Eye contact, flush eyes with plenty of water or normal saline immediately, seek medical advice if it is serious.

Gather the leakage.

Use dry sand and fire blanket to do fire suppression when outbreak of fire.

Safe storage:

Stored in a cool, dry and ventilated warehouse.

Lock the warehouse.

Discard dispose:

This product can adopt safety bury method to dispose.

Physical and chemical danger:

Meet open flame, high temperature, easy cause combustion. Mixed with air can form explosive mixture. Meet moist air and water, water vapor, can generate flammable and explosive gases. React with acid, alkali or strong oxidizer, generate the flammable and explosive gas.

Health hazard:

Long-term inhalation deposition leads to the aluminum pneumoconiosis in lung.

Environmental hazard: No data.

#### **Section 4: First Aid Measures**

Skin contact: Wash exposed area with soap and water thorough-paced.

Eye contact: Flush eyes with plenty of water or normal saline immediately, seek medical advice if it is serious.

Inhalation: Remove to fresh air immediately.

Ingestion: Drink full dose warm boiled water emetic, seek medical advice.

Notice for lifeguard: Enter the accident site have to wear anti-dust respirator.

Special suggestion for doctor: Nothing

### Section 5: Fire Fighting Measures

Fire extinguishing agent: Use the inert dry granular material (e.g. dry sand), asbestos quilt etc. fire-fighting materials, gently covered in circle; avoid kick up aluminum powder; only Class D fire extinguisher is applicative.

Dangerous property:

- 1、 Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- 2、 May cause burning even explode, when quantities of Al powder encounter water, water vapour and damp air.
- 3、 It will be reacted with oxidizer, and it may explosive mixture when it is more seriously.
- 4、 May cause burning when encounter the naked flame、 high heat.
- 5、 Violent chemical reaction would be happened when it contact with fluorine and chlorine.
- 6、 It will reacts with acids and alkali, and will release of flammable hydrogen gas.

Fire-fighting comments and measures: Fire-fighters must wear Fire-fighting protective clothes. Water-solubility and carbon dioxide extinguishers are forbidden. It is strictly prohibited to use water to put out the fire.

### Section 6: Accidental Release Measures

Operating personnel safeguard procedures, protective device and emergency disposal procedure:

Emergency personnel should wear anti-dust respirator, heat-proof clothes and use the explosion prevention tools and equipments.

All equipment must grounding during operating.

Try the best to cut off the source of leaks.

Eliminate all the ignition source.

Irrelevant personnel evacuate to safe area through upwind.

Environmental protection measures: Collect the leakages, avoid environmental pollution.

Leakage chemical collect, clear away method and dispose material:

Small quantity leakage: Avoid powder flying, use the clean shovel to collect the leakage into dry, clean and closed container.

Large quantity leakage: Use plastic cloth, canvas to cover the leakage. Use no spark tools to transfer and collect.



## **Section7: Handling and storage**

### Handling announcements:

1. Operators must pass the special training, obey the operating rules strictly.
2. Suggest operators wear filter-type dust-proof respirator, chemical safe goggles, and static-free working clothes.
3. Far away from fire source and heat source, no smoking in working area.
4. Use explosion-proof type ventilation systems and equipment.
5. Avoid power flying and contact with oxidizer, acids and alkalis.
6. Handle with care, avoid package and container damage.
7. Reserve the applicable quantity and type of fire-fighting equipments and leakage emergency treatment equipment.
8. It may leave harmful materials in emptied out containers.

### Storage:

1. Stored in a cool, dry and ventilated warehouse.
2. Far away from fire source and heat source. Humidity of the warehouse should less 85%.
3. Packing should be sealed. Cannot store together with oxidizer, acids, alkalis and halogen, avoid mixed stored.
4. The interval with door or window has to more than 1 meter.
5. Use explosion-proof type lighting, ventilation facilities. It had better not stored long time to avoid moisture absorption metamorphism.
6. Reserve the applicable quantity and type of fire-fighting equipments. Storage area should have applicable tools to gather and storage the leakage.
7. Forbidden use tools and mechanical equipment which are easy engenders spark.

## **Section 8: Exposure controls/personal protection**

China MAC (mg/m<sup>3</sup>) : 2[AL]

The Soviet Union MAC (mg/m<sup>3</sup>) : 2[AL]

USA TLV-TWA: NO Standard TLVTN: ACGIH 10mg/m<sup>3</sup> [dust]/ 5mg/m<sup>3</sup> [welding smoke]

USA TLV-STEL: NO Standard TLVWN: NO Standard

Monitoring method: No data

Project Control: Have to operate airtight, strengthen ventilated. Provide shower and safety equipment.

Respiratory tract protection: Must wear protective mask when contacting the powder, if necessary, wear air-purifying respirators.

Eye Protection: Use chemical safety goggles.

Body protection: Wear antistatic working clothes.

Hands' protection: Wear antistatic gloves.

Additional information: No smoking, eating and drinking in the workshop, wash the hands before eating. Take a shower and change clothing when finish work.

Pay attention to personal clean sanitation. Physical examination before obtain employment, and periodic physical examination, prevent pneumoconiosis.

## Section 9: Physical and chemical properties

**Appearance:** silver-gray powder.

**Boiling point (°C) :** 2467

**Melting point (°C) :** 660°C

**Relative density ( water = 1 ):**  $\cong$  1.40 (Tap density)

**Relative density of steam (air=1):** No Data

**Saturated vapor pressure:** 0.13 (1284°C)

**Burning hot:** 822.9

**Critical temperature (°C):** Insignificance

**Critical press (MPa):** Insignificance

**Flash point:** No Data

**Octanol/water partion coefficient:** No Data

**Ignition Temperature (°C):** 700 °C

**Explosion max limit:** No Data

**Explosion min limit:** 40g/ m<sup>3</sup>

**Solubility:** React with water and ethanol, insoluble in other organic solvents.

**Mainly applications:** Metal pigment, chemical catalyst, gunpowder and refractory material and so on.

**Other chemical and physical properties:** Microns grade powder, no organic, no radioactive and corrosive, min ignition heat 15millijoule.

## Section 10: Stability and reactivity

**Stability:** Stable

**Hazardous Polymerization:** Will not occur.

**Avoid contact:** fire, heat and humid air.

**Conditions to Avoid:** flames, heat, moisture

**Taboo:** water, acids, alkalis and strong oxidant.

**Combustion product:** Al<sub>2</sub>O<sub>3</sub>

## Section 11: Toxicological information

*Acute toxicity: LD50: No Data*

*LC50: No Data*

*Irritation: Low stimulus to eyes*

*Allergenicity: No Data*

*Sub-acute and chronic toxicity: No Data*

*Mutagenicity: No Data*

*Teratogenicity: No Data*

*Carcinogenicity: No Data*

## Section 12: Ecological information

*Biological effect: This substance is harmful to environment, please pay special attention to mammal.*

*Biodegradable: No Data*

*Non-biodegradable: No Data*

*Bioconcentration: No Data*

*Environmental migration: No Data*

## Section 13: Disposal considerations

*Waste characters: Not belong to hazardous waste*

*Waste: Must follow the laws of the Country and location before dispose it. If can recycling, also can bury safety.*

*Disposal attentions: Suggest the operator wear self-priming and filter to dust mask.*

## Section 14: Transport information

*Dangerous goods Code: 43013*

*UN No: 1396*

*Packing mark: Contact with damp, emit inflammable gases*

*Packing Group: III*

*Packing: Put into the double-coated woven bag, sealing with double HDPE (High Density Polyethylene) bags in inner. Or put into the steel drums, 0.5mm thick, with double-coated HDPE bags sealing.*

*Attentions:*

*Railway transportation should be strictly accordance with the Ministry of Railway's the Transportation of Dangerous Goods Rules in the distribution of dangerous goods loaded table for compatibility. It is ban to put away when the goods on railway transportation. It should be packing well when shipment, loading should be safe. During the shipment, must ensure the containers no leaking, no collapsing, not falling, no damage. It is strictly prohibited shipping mix with oxidizer, acids, bases, etc. Transportation vehicles should be equipped with the corresponding variety and quantity of the leak and fire equipment and emergency equipment. During the transport should prevent insolate, anti-rain, anti-high temperature, and anti-leaking and throwing and sprinkling, and it should stop away from fire and heat. The vehicles and vessels must be dry, and have good water-resistant facilities. The vehicles must be cleaning completely after transporting.*

## **Section 15: Regulatory information**

*The safety administration of hazardous chemicals ordinance (February 16, 2011 promulgated by the state council), workplace safety use chemicals rules (labor department is sent [1996] no. 423), and other laws and regulations for the safe use of hazardous chemicals, production, storage, transportation, loading and unloading, etc, in the corresponding provisions, chemicals classification and risk general public (GB 13690-2009 will be the material into the first 4.3 of wet. Other regulations in flammable items: aluminum and magnesium powder processing dust explosive safety procedures (GB17269-2003). Workshop al and alumina, aluminum alloy air dust health standard (GB11726-89), etc*

## **Section 16: Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

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*The information above is believed to be accurate and represents the best information currently*



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