



Materials Safety Data Sheet

Aluminium powder

1. Product and Company Identification

Product Name: Aluminium Powder
Formula: Al
CAS: 7429-90-5
Synonyms: Aluminum powder, Aluminium metal powder

Recommended Use: Scientific research
Uses advised against: N/A

Supplier: UltraPurMat Group Co., Ltd
Address: A11, 5th Floor, Building 5, Digital China Xi'an Science Park, No. 20 Zhangba 4th Road, High-tech Zone, Xi'an, Shaanxi, China.
Tel: +86-29-88993870
Email: sales@ulpmat.com
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2. Hazards Identification

Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 (CLP):

GHS Label elements, including precautionary statements

The classification of aluminium powder depends on particle size:

Aluminium powder with typical particle size $\geq 150 \mu\text{m}$ (coarse powder):
Not classified as hazardous according to Regulation (EC) No 1272/2008.

Aluminium powder with typical particle size $< 150 \mu\text{m}$ (fine powder):
Flammable solid, Category 2 (H228)
GHS Label elements (for fine powder only):

Pictogram: GHS02 (Flame)



Signal Word: Warning

Hazard statement(s):

H228: Flammable solid.

Precautionary Statement(s):

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240: Ground and bond container and receiving equipment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P370+P378: In case of fire: Use suitable extinguishing media for metal fires.

Other hazards:

Aluminium powder may form combustible dust-air mixtures when dispersed in air.

Fine aluminium powder may be ignited by electrostatic discharge.

Coarse aluminium powder does not meet the criteria for classification under CLP.

This substance does not contain any known or suspected endocrine disruptors.

3. Composition

Components	CAS	Classification (H)	Concentration
Aluminium (Al)	7429-90-5	Flammable solid, Cat. 2 (H228) (fine powder)	≤100%

Note: Coarse aluminium powder is not classified according to CLP.

4. First Aid Procedures

Description of first aid measures

General Treatment: Seek medical attention if symptoms persist.

Inhalation: Remove victim to fresh air. Give oxygen if breathing is difficult. Seek medical attention.

Ingestion: Seek Medical Attention.

Skin: Remove any contaminated clothing. Wash affected area with mild soap and water. Seek medical attention if symptoms develop or persist.

Eyes: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms develop or persist.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed

No data available

5. Firefighting Measures

Extinguishing media

Extinguishing Media: Bulk aluminium does not burn; however, finely divided aluminium powder may burn vigorously under fire conditions. Use suitable extinguishing agent for surrounding material and type of fire.

Unsuitable extinguishing media: Water jet may be ineffective for molten aluminium or finely divided aluminium.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Metal oxide fume

Advice for firefighters

Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

Further information

No data available

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing Vapors, mist or gas.

Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

Environmental precautions

Isolate runoff to prevent environmental pollution.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. Handling and Storage

Precautions for safe handling

Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid formation of dust. Do not get in eyes, on skin, or on clothing. Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry place in tightly closed containers. Protect from sources of ignition and avoid dust formation.

Storage class (TRGS 510):

Coarse powder: Non-combustible solid

Fine powder: Combustible solid (dust explosion hazard)

Store apart from materials and conditions listed in section 10.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

8. Exposure Controls/Personal Protection

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Protective gloves (The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.)

Body Protection

Protective work clothing. Wear close-toed shoes and long sleeves/pants.

Respiratory protection

Use a particle filter respirator (P2 or P3 according to EN 143) when dust is generated, as a backup to engineering controls. Risk assessment should be performed to determine if purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. Physical and Chemical Characteristics

Information on basic physical and chemical properties

Appearance

Form: Powder

Colour: Silver-grey powder

Odor: Odorless

pH: No data available

Melting point/range: 660 °C

Boiling point/range: 2327 °C

Flash point: No data available

Evaporation rate: No data available
Flammability (solid, gas): Combustible (fine powder)
Upper/lower flammability or explosive limits: No data available
Vapor pressure: No data available
Relative density: 2.7 g/cm³
Water solubility: (practically insoluble)
Partition coefficient: n-octanol/water: not relevant (inorganic)
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available

Other information

Molecular formula: Al
Atomic weight: 26.98 g/mol

10. Stability and reactivity

Reactivity

This material is not reactive under normal ambient conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

Conditions to avoid

Incompatible products. Excess heat. Avoid dust formation. Exposure to ignition sources in air. Static electricity and formation of sparks be prevented.

Incompatible materials

Strong oxidizing agents.

Acids (especially oxidizing acids).

Water does not react with aluminium under normal conditions.

Reaction may occur only under specific conditions (e.g. very fine powder, elevated temperature, alkaline environment).

Hazardous decomposition products

Metal oxide fume

In the event of fire: see section 5

11. Toxicological Information

Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

There are no known carcinogenic chemicals in this product.

Reproductive toxicity

No data available

Specific target organ toxicity -single exposure

No data available

Specific target organ toxicity -repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

No data available

12. Ecological Information**Toxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

This product does not contain any known or suspected endocrine disruptors.

13. Disposal Considerations**Waste treatment methods**

Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible. Disposal by licensed waste contractor in accordance with local regulations. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste.

14. Transportation Information

ADR

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

Note: Although aluminium powder may present a fire and dust explosion hazard, it is not classified as dangerous goods for transport according to ADR, IMDG or IATA regulations.

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) 1907/2006, REACH, Annex XIV list of substances subject to authorisation: Not applicable

Regulation (EC) 1907/2006, REACH, Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances: Not applicable

Regulation (EC) 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EC) 850/2004 on persistent organic pollutants, amended by (EU) No 2019/1021: Not applicable

Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance

16. Other information

Revision Date

03/03/2025

Disclaimer

The information of this safety data sheet is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.