

**SAFETY DATA SHEET**

Creation Date 25-Oct-2010

Revision Date 29-Mar-2024

Revision Number 6

**1. Identification**

**Product Name** Aluminum powder

**Cat No. :** 41001

**CAS No** 7429-90-5  
**Synonyms** No information available

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

**Details of the supplier of the safety data sheet****Company**

Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757

**Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
**Emergency Number US:**001-201-796-7100 / **Europe:** +32 14 57 52 99  
**CHEMTREC** Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

**2. Hazard(s) identification****Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|  |            |
|--|------------|
| Substances/mixtures which, in contact with water, emit flammable gases | Category 2 |
| Pyrophoric solids  | Category 1 |
| Combustible dust   | Yes        |

**Label Elements****Signal Word**

Danger

**Hazard Statements**

May form combustible dust concentrations in air  
In contact with water releases flammable gas  
Catches fire spontaneously if exposed to air

**Precautionary Statements****Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Do not allow contact with air

Wear protective gloves/protective clothing/eye protection/face protection

Keep away from any possible contact with water, because of violent reaction and possible flash fire

Handle under inert gas. Protect from moisture

**Skin**

Brush off loose particles from skin. Immerse in cool water/wrap with wet bandages

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage**

Store under an inert atmosphere

Store in a dry place. Store in a closed container

Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

| Component | CAS No    | Weight % |
|-----------|-----------|----------|
| Aluminium | 7429-90-5 | <=100    |

### 4. First-aid measures

**General Advice**

If symptoms persist, call a physician.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects**

None reasonably foreseeable.

**Notes to Physician**

Treat symptomatically

### 5. Fire-fighting measures

**Suitable Extinguishing Media**

Dry sand; dry clay; Limestone powder; approved class D extinguishers.

|   |  |
|---|--|
| <b>Unsuitable Extinguishing Media</b>   | DO NOT USE WATER, Carbon dioxide (CO <sub>2</sub> ), Dry chemical, Do not use halogenated extinguishing agents or foam |
| <b>Flash Point</b>                      | No information available   |
| <b>Method -</b>                         | No information available   |
| <b>Autoignition Temperature</b>         | 400 °C / 752 °F  |
| <b>Explosion Limits</b>                 |  |
| <b>Upper</b>                            | No data available  |
| <b>Lower</b>                            | No data available  |
| <b>Sensitivity to Mechanical Impact</b> | No information available   |
| <b>Sensitivity to Static Discharge</b>  | No information available   |

**Specific Hazards Arising from the Chemical**

Water reactive. Contact with water liberates extremely flammable gases. Spontaneously flammable in air. Fine dust dispersed in air may ignite. Dust can form an explosive mixture with air. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Hydrogen. Fumes of aluminum or aluminum oxide.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

**Health**  
0

**Flammability**  
4

**Instability**  
1

**Physical hazards**  
W

## 6. Accidental release measures

|                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | Use personal protective equipment as required. Avoid dust formation. Ensure adequate ventilation. |
| <b>Environmental Precautions</b> | Should not be released into the environment.  |

|   |  |
|---|--|
| <b>Methods for Containment and Clean Up</b> | Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. |
|---|--|

## 7. Handling and storage

|                 |   |
|-----------------|---|
| <b>Handling</b> | Wear personal protective equipment/face protection. Avoid dust formation. Avoid ingestion and inhalation. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. |
|-----------------|---|

|                 |   |
|-----------------|---|
| <b>Storage.</b> | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area. Store under an inert atmosphere. Keep away from water or moist air. Incompatible Materials. Water. Strong acids. Strong bases. Alcohols. Halogens. Halogenated compounds. Carbon dioxide (CO <sub>2</sub> ). |
|-----------------|---|

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | ACGIH TLV                | OSHA PEL   | NIOSH   | Mexico OEL (TWA)         |
|-----------|--------------------------|--|---|--------------------------|
| Aluminium | TWA: 1 mg/m <sup>3</sup> | (Vacated) TWA: 15 mg/m <sup>3</sup><br>(Vacated) TWA: 5 mg/m <sup>3</sup><br>TWA: 15 mg/m <sup>3</sup><br>TWA: 5 mg/m <sup>3</sup> | TWA: 10 mg/m <sup>3</sup><br>TWA: 5 mg/m <sup>3</sup> | TWA: 1 mg/m <sup>3</sup> |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration  
NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures** Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Personal Protective Equipment

**Eye/face Protection** 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 and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended Filter type:** Particulates filter conforming to EN 143.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

### 9. Physical and chemical properties

|  |                                |
|--|--------------------------------|
| Physical State                         | Powder Solid                   |
| Appearance                             | Grey                           |
| Odor                                   | Odorless                       |
| Odor Threshold                         | No information available       |
| pH                                     | Not applicable                 |
| Melting Point/Range                    | 660 °C / 1220 °F               |
| Boiling Point/Range                    | 2327 °C / 4220.6 °F @ 760 mmHg |
| Flash Point                            | No information available       |
| Evaporation Rate                       | Not applicable                 |
| Flammability (solid,gas)               | No information available       |
| Flammability or explosive limits       |                                |
| Upper                                  | No data available              |
| Lower                                  | No data available              |
| Vapor Pressure                         | No information available       |
| Vapor Density                          | Not applicable                 |
| Specific Gravity                       | 2.7020                         |
| Solubility                             | insoluble                      |
| Partition coefficient; n-octanol/water | No data available              |
| Autoignition Temperature               | 400 °C / 752 °F                |
| Decomposition Temperature              | No information available       |
| Viscosity                              | Not applicable                 |
| Molecular Formula                      | Al                             |
| Molecular Weight                       | 26.98                          |

### 10. Stability and reactivity

|                        |  |
|------------------------|--|
| Reactive Hazard        | Yes  |
| Stability              | Water reactive. Moisture sensitive. Air sensitive. Pyrophoric: Spontaneously flammable in air.             |
| Conditions to Avoid    | Avoid dust formation. Incompatible products. Exposure to air. Exposure to moist air or water. Excess heat. |
| Incompatible Materials | Water, Strong acids, Strong bases, Alcohols, Halogens, Halogenated compounds, Carbon                       |

dioxide (CO<sub>2</sub>)**Hazardous Decomposition Products** Hydrogen, Fumes of aluminum or aluminum oxide**Hazardous Polymerization** Hazardous polymerization does not occur.**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

### Acute Toxicity

**Product Information** No acute toxicity information is available for this product

#### **Component Information**

| Component | LD50 Oral  | LD50 Dermal | LC50 Inhalation               |
|-----------|------------|-------------|-------------------------------|
| Aluminium | Not listed | Not listed  | LC50 > 0.888 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** No information available**Sensitization** No information available**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------|-----------|------------|------------|------------|------------|------------|
| Aluminium | 7429-90-5 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available**Reproductive Effects** No information available.**Developmental Effects** No information available.**Teratogenicity** No information available.**STOT - single exposure** None known**STOT - repeated exposure** None known**Aspiration hazard** No information available**Symptoms / effects, both acute and delayed** No information available**Endocrine Disruptor Information** No information available**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

**Persistence and Degradability** Insoluble in water**Bioaccumulation/ Accumulation** No information available.**Mobility** Is not likely mobile in the environment due its low water solubility.

## 13. Disposal considerations

**Waste Disposal Methods**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT**

UN-No UN1396  
 Proper Shipping Name ALUMINUM POWDER, UNCOATED  
 Hazard Class 4.3  
 Packing Group II

**TDG**

UN-No UN1396  
 Proper Shipping Name ALUMINUM POWDER, UNCOATED  
 Hazard Class 4.3  
 Packing Group II

**IATA**

UN-No UN1396  
 Proper Shipping Name ALUMINIUM POWDER, UNCOATED  
 Hazard Class 4.3  
 Packing Group II

**IMDG/IMO**

UN-No UN1396  
 Proper Shipping Name ALUMINIUM POWDER, UNCOATED  
 Hazard Class 4.3  
 Packing Group II

## 15. Regulatory information

**United States of America Inventory**

| Component | CAS No    | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|-----------|-----------|------|--|--------------------------------|
| Aluminium | 7429-90-5 | X    | ACTIVE   | -                              |

**Legend:**

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b) - Notices of Export**

Not applicable

**International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

| Component | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|-----------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Aluminium | 7429-90-5 | X   | -    | 231-072-3 | X     | X    |      | X    | X     | KE-00881 |

KECL - NIER number or KE number (<http://ncis.nier.gov.kr/en/main.do>)

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

| Component | CAS No | Weight % | SARA 313 - Threshold | SARA 313 - Reporting |
|-----------|--------|----------|----------------------|----------------------|
|-----------|--------|----------|----------------------|----------------------|

|           |           |       | Values % | thresholds |
|-----------|-----------|-------|----------|------------|
| Aluminium | 7429-90-5 | <=100 | 1.0 %    | -          |

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------|---------------|------------|--------------|----------|--------------|
| Aluminium | X             | X          | X            | -        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product contains the following DHS chemicals:  
**Legend** - STQs = Screening Threshold Quantities, APA = A placarded amount

| Component | DHS Chemical Facility Anti-Terrorism Standard |
|-----------|---|
| Aluminium | Theft STQs - 100lb (powder)                   |

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

| Component | CAS No    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|-----------|-----------|---|---|---|
| Aluminium | 7429-90-5 | -   | Use restricted. See item 75.<br>(see link for restriction details)            | -   |

**REACH links**

<https://echa.europa.eu/substances-restricted-under-reach>

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

| Component | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-----------|-----------|----------|------------------------------|---------------------------|--|
| Aluminium | 7429-90-5 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

| Component | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-----------|-----------|---|--|----------------------------|------------------------------------|
| Aluminium | 7429-90-5 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other information

#### Prepared By

Health, Safety and Environmental Department  
Email: chem.techinfo@thermofisher.com  
www.thermofisher.com

#### Creation Date

25-Oct-2010

#### Revision Date

29-Mar-2024

#### Print Date

29-Mar-2024

#### Revision Summary

New emergency telephone response service provider.

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**