

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 26-Jan-2023
 Revision Number 2.04

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name | Aluminium, Powder |
| Product Code | 010-01782,014-01785 |
| Manufacturer | FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-5964 |
| Supplier | FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029 |
| Emergency telephone number | +81-6-6203-3741 / +81-3-3270-8571 |
| Recommended uses and restrictions on use | For research use only |

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

| | |
|---|------------|
| Substances and mixtures which, in contact with water, emit flammable gases | Category 2 |
| Specific target organ toxicity (single exposure) | Category 1 |
| Category 1 respiratory system | |
| Specific target organ toxicity (repeated exposure) | Category 1 |
| Category 1 respiratory system | |

Pictograms



Signal word

Danger

Hazard statements

- H261 - In contact with water releases flammable gases
- H370 - Causes damage to the following organs: respiratory system
- H372 - Causes damage to the following organs through prolonged or repeated exposure: respiratory system

Precautionary statements-(Prevention)

- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Keep away from any possible contact with water, because of violent reaction and possible flash fire
- Handle under inert gas. Protect from moisture
- Wear protective gloves/protective clothing/eye protection/face protection

Precautionary statements-(Response)

- IF exposed: Call a POISON CENTER or doctor/physician
- Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages

- In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary statements-(Storage)

- Store locked up
- Store in a dry place. Store in a closed container

Precautionary statements-(Disposal)

- Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula Al

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|---------------|----------|------------------|------|----------|-----------|
| Aluminium | 99.5 | 26.982 | - | N/A | 7429-90-5 |

Note on ISHL No.: * in the table means announced chemical substances.

Impurities and/or Additives: Not applicable

Section 4: FIRST AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

dry sand, dry diatomaceous earth, dry slaked lime

Unsuitable extinguishing media

Do not use straight streams

Specific hazards arising from the chemical product

Produce flammable gases on contact with water

Special extinguishing method

No information available

Special protective actions for**fire-fighters**

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin,

or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up

Sweep up and gather scattered particles, and collect it in an empty airtight container.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling

Technical measures

Avoid contact with water and moisture. Avoids contact with acids. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle In places other than those specified, should not be smoking or eating and drinking Should not be brought contaminated protective equipment and gloves to rest stops Deny unnecessary entry of non-emergency personnel to the handling area

Safety handling precautions

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Storage

Safe storage conditions

Storage conditions

Store away from sunlight in well-ventilated place at room temperature (preferably cool).
Keep container tightly closed.

Safe packaging material

Polyethylene, Polypropylene

Incompatible substances

steam, Acids, Alkali

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

| Chemical Name | JSOH (Japan) | ISHL (Japan) | ACGIH |
|------------------------|--|--------------|---|
| Aluminium 7429-90-5 | TWA: 2 mg/m ³ OEL TWA: 0.5 mg/m ³ OEL | N/A | TWA: 1 mg/m ³ respirable particulate matter |

Personal protective equipment

Respiratory protection

Dust mask

Hand protection

Protection gloves

Eye protection

protective eyeglasses or chemical safety goggles

Skin and body protection

Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Color

White - silver

Appearance

powder

Odor

no data available

Melting point/freezing point

658.8 °C

Boiling point, initial boiling point and boiling range

2337 °C

Flammability

no data available

Evaporation rate:

no data available

| | |
|--|--|
| Flammability (solid, gas): | no data available |
| Upper/lower flammability or explosive limits | |
| Upper: | no data available |
| Lower: | no data available |
| Flash point | no data available |
| Auto-ignition temperature: | no data available |
| Decomposition temperature: | no data available |
| pH | no data available |
| Viscosity (coefficient of viscosity) | no data available |
| Dynamic viscosity | no data available |
| Solubilities | dil. hydrochloric acid , dil. sulfuric acid , sodium hydroxide (aq.) , soluble . water and organic solvents : practically insoluble,or insoluble . |
| n-Octanol/water partition coefficient:(log Pow) | no data available |
| Vapour pressure | no data available |
| Specific Gravity / Relative density | 2.702 |
| Vapour density | no data available |
| Particle characteristics | no data available |

Section 10: STABILITY AND REACTIVITY

Stability

| | |
|---|---|
| Reactivity | no data available |
| Chemical stability | Stable under recommended storage conditions. |
| Hazardous reactions | None under normal processing |
| Conditions to avoid | Extremes of temperature and direct sunlight, Moisture |
| Incompatible materials | steam, Acids, Alkali |
| Hazardous decomposition products | Metal oxides |

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

| Chemical Name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity -inhalation gas-source information |
|---------------|---|---|---|
| Aluminium | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

| Chemical Name | Acute toxicity -inhalation vapor- source information | Acute toxicity -inhalation dust-source information | Acute toxicity -inhalation mist-source information |
|---------------|--|--|--|
| Aluminium | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

Skin irritation/corrosion

| Chemical Name | Skin corrosion/irritation source information |
|---------------|---|
| Aluminium | Based on the NITE GHS classification results. |

Serious eye damage/ irritation

| Chemical Name | Serious eye damage/irritation source information |
|---------------|--|
| Aluminium | Based on the NITE GHS classification results. |

Respiratory or skin sensitization

| Chemical Name | Respiratory or Skin sensitization source information |
|---------------|--|
| Aluminium | Based on the NITE GHS classification results. |

Reproductive cell mutagenicity

| Chemical Name | germ cell mutagenicity source information |
|---------------|---|
| Aluminium | Based on the NITE GHS classification results. |

Carcinogenicity

| Chemical Name | Carcinogenicity source information |
|---------------|---|
| Aluminium | Based on the NITE GHS classification results. |

Reproductive toxicity

| Chemical Name | Reproductive toxicity source information |
|---------------|---|
| Aluminium | Based on the NITE GHS classification results. |

STOT-single exposure

| Chemical Name | STOT -single exposure- source information |
|---------------|---|
| Aluminium | Based on the NITE GHS classification results. |

STOT-repeated exposure

| Chemical Name | STOT -repeated exposure- source information |
|---------------|---|
| Aluminium | Based on the NITE GHS classification results. |

Aspiration hazard

| Chemical Name | Aspiration Hazard source information |
|---------------|---|
| Aluminium | Based on the NITE GHS classification results. |

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity No information available

Other data

| Chemical Name | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|---------------|--|---|
| Aluminium | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

Persistence and degradability No information available

Bioaccumulative potential No information available

Mobility in soil No information available

Hazard to the ozone layer No information available

Section 13: DISPOSAL CONSIDERATIONS**Waste from residues**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION**ADR/RID**

UN number UN1396
Proper shipping name: Aluminium powder, uncoated
UN classification 4.3
Subsidiary hazard class
Packing group II
Marine pollutant Not applicable

IMDG

UN number UN1396
Proper shipping name: Aluminium powder, uncoated
UN classification 4.3
Subsidiary hazard class
Packing group II
Marine pollutant (Sea) Not applicable
Transport in bulk according to No information available

Annex II of MARPOL 73/78 and the IBC Code

IATA

| | |
|-------------------------------------|----------------------------|
| UN number | UN1396 |
| Proper shipping name: | Aluminium powder, uncoated |
| UN classification | 4.3 |
| Subsidiary hazard class | |
| Packing group | II |
| Environmentally Hazardous Substance | Not applicable |

Section 15: REGULATORY INFORMATION

International Inventories

| | |
|---------------|--------|
| EINECS/ELINCS | Listed |
| TSCA | Listed |

Japanese regulations

| | |
|---|---|
| Fire Service Act | Not applicable |
| Poisonous and Deleterious Substances Control Law | Not applicable |
| Industrial Safety and Health Act | Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9)No.37 Dangerous Substances - Ignitable Substance (Enforcement Order Attached Table 1 Item 2) |
| Regulations for the carriage and storage of dangerous goods in ship | Flammable Solids - Dangerous When Wet (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1) |
| Civil Aeronautics Law | Flammable Solids - Dangerous When Wet (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1) |
| Pollutant Release and Transfer Register Law (~2023.3.31) | Not applicable |
| Pollutant Release and Transfer Register Law (2023/4/1~) | Not applicable |
| Water Pollution Control Act | Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3) |
| Export Trade Control Order | Appendix 1 Export licensed items |

| Chemical Name | Poisonous and Deleterious Substances Control Law | Industrial Safety and Health Act Substances (Law Art.57-2) (~2024.3.31) | Pollutant Release and Transfer Register Law (~2023.3.31) |
|---------------------------------|--|---|--|
| Aluminium 7429-90-5 (99.5) | - | Applicable | - |

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
<http://www.safe.nite.go.jp/japan/db.html>
 IATA dangerous Goods Regulations
 RTECS:Registry of Toxic Effects of Chemical Substances
 Japan Industrial Safety and Health Association GHS Model SDS
 Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.
 Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
 etc

Disclaimer

This SDS is according to JIS Z 7253: 2019. 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, 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.

GHS Classification is according to JIS Z7252(2019). *JIS: Japanese Industrial Standards

End of Safety Data Sheet