

## Safety Data Sheet

### 1. Identification of the substance/mixture and of the company/undertaking

#### Product identifier:

Product name: Aluminium fluoride

Reference number(SDS): 64015jis\_E1-3

#### Product type:

Reagent

#### Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

### 2. Hazards identification

#### GHS classification and label elements of the product

#### Classification of the substance or mixture

##### HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Serious eye damage/eye irritation: Category 2

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 1 (bone)

#### Label elements



Signal word: Danger

#### HAZARD STATEMENT

H301–Toxic if swallowed

H319–Causes serious eye irritation

H361–Suspected of damaging fertility or the unborn child

H335–May cause respiratory irritation

H372–Causes damage to organs through prolonged or repeated exposure

#### PRECAUTIONARY STATEMENT

##### Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear eye protection/face protection.

Use personal protective equipment as required.

Do not eat, drink or smoke when using this product.

##### Response

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER/doctor/physician.

#### Storage

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

Store locked up.

#### Disposal

Dispose of contents/container in accordance with local/national regulation.

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### 3. Composition/information on ingredients

Mixture/Substance selection:

#### Substance

Ingredient name: Aluminium fluoride

Content (%): 95.0 <

Chemical formula:  $\text{AlF}_3$

Chemicals No, Japan: 1-14

CAS No.: 7784-18-1

MW: 83.98

ECNO: 232-051-1

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### 4. First-aid measures

Descriptions of first-aid measures

#### General measures

Get medical advice/attention if you feel unwell.

Keep victim warm and quiet.

Call emergency medical service.

Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

#### IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Give artificial respiration if victim is not breathing.

Administer oxygen if breathing is difficult.

Call a POISON CENTER/doctor/physician if you feel unwell.

#### IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

If skin irritation or rash occurs: Get medical advice/attention.

Remove and isolate contaminated clothing and shoes.

For minor skin contact, avoid spreading material on unaffected skin.

#### IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

#### IF SWALLOWED

Rinse mouth.

If victim is conscious, give 1 - 2 glasses of water.

Immediately call a POISON CENTER/doctor/physician.

Call a POISON CENTER/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Cough. Shortness of breath. Sore throat.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes

Redness of the skin. Pain.

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## 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

The product is non-flammable.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

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## 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

EVACUATION : Spill: See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

If appropriate, moisten first to prevent dusting.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.

Keep out of low areas.

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## 7. Handling and storage

### Precautions for safe handling

#### Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

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

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

#### Safety Measures

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area.

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

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

#### Any incompatibilities

Strong acids, Strong oxidizing agents should not be mixed with the chemicals.

#### Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

#### Storage

##### Conditions for safe storage

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

Keep cool. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

Container and packaging materials for safe handling data is not available.

#### Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

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## 8. Exposure controls/personal protection

### Control parameters

Control value in MHLW is not available.

#### Adopted value

Adopted value in JSOH is not available.

ACGIH(2008) TWA: (Insoluble)1mg/m<sup>3</sup>(R) (Pneumoconiosis; LRT irr; neurotoxicity)

ACGIH(1996) TWA: 2.5mg-F/m<sup>3</sup> (Bone dam; fluorosis)

### Exposure controls

#### Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures

##### Respiratory protection

Wear respiratory protection.

**Hand protection**

Wear protective gloves.

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

**Eye protection**

Wear safety glasses with side-shields.

Wear eye/face protection.

**Skin and body protection**

Wear impervious clothing and boots in case of repeated or prolonged treatment.

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**9. Physical and Chemical Properties****Information on basic physical and chemical properties**

Physical state: Crystals or crystalline powder

Color: Colorless or white

Odor: None

Odor threshold data is not available.

Melting point/Freezing point data is not available.

Boiling point or initial boiling point: 1272°C(sublimation)

Boiling range data is not available.

Flammability (gases, liquids and solids): Non-flammable

Lower and upper explosion limit/flammability limit data is not available.

Flash point: Non-flammable

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 0.5 g/100 ml (20°C)

Solubility in solvent: Insoluble in ethanol and acetone.

n-Octanol/water partition coefficient data is not available.

Vapor pressure: 1mmHg(1238°C)

Vapor density data is not available.

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density: 2.9g/cm<sup>3</sup>

Relative vapor density (Air=1) data is not available.

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Critical temperature data is not available.

Particle characteristics data is not available.

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**10. Stability and Reactivity****Reactivity**

Reactivity data is not available.

**Chemical stability**

Stable under normal storage/handling conditions.

Hygroscopic.

**Possibility of hazardous reactions**

Decomposes on heating and under the influence of moisture. This produces toxic and corrosive fumes including hydrogen fluoride

## Conditions to avoid

Contact with incompatible materials.

Heat, Moisture.

## Incompatible materials

Strong acids, Strong oxidizing agents

## Hazardous decomposition products

Fluorides, Aluminum oxides.

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## 11. Toxicological Information

## Information on toxicological effects

## Acute toxicity

## Acute toxicity (Oral)

[GHS Cat. Japan, base data]

mouse LD50=103mg/kg (HSDB, Access on June 2015)

## Labor standard law, Japan; Toxic

Aluminium fluoride

## Irritant properties

Skin corrosion/irritation data is not available.

## Serious eye damage/irritation

[GHS Cat. Japan, base data]

severe eyes irritation (HSDB, Access on June 2015)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

## Carcinogenicity

ACGIH-A4(2008) : Not Classifiable as a Human Carcinogen(as Aluminum and its insoluble substances)

ACGIH-A4(1996) : Not Classifiable as a Human Carcinogen(as Fluorides)

## Reproductive toxicity

[GHS Cat. Japan, base data]

cat. 2; rat : HSDB, 2015

## STOT

## STOT-single exposure

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

respiratory tract irritation (HSDB, Access on June 2015))

## STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

bone (ACGIH, 2001)

Aspiration hazard data is not available.

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## 12. Ecological Information

## Ecotoxicity

Ecotoxicity data is not available.

## Persistence and degradability

Persistence and degradability data is not available.

## Bioaccumulative potential

Bioaccumulative potential data is not available.

## Mobility in soil

Mobility in soil data is not available.

## Other adverse effects

Ozone depleting chemical data is not available.

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**13. Disposal considerations**

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

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**14. Transport Information**

UN No., UN CLASS

UN No. or ID No.: 1759

UN Proper Shipping Name : CORROSIVE SOLID, N.O.S.

Class or division (Transport hazard class) : 8

Packing group : II

ERG GUIDE No.: 154

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1759

Proper Shipping Name : CORROSIVE SOLID, N.O.S.

Class or division : 8

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1759

Proper Shipping Name : CORROSIVE SOLID, N.O.S.

Class or division : 8

Hazard labels : Corrosive

Packing group : II

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Aluminium fluoride

Maritime transport in bulk according to IMO instruments

Not applicable to Maritime transport in bulk according to IMO instruments

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**15. Regulatory Information**

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

Chemicals listed in TSCA Inventory

Aluminium fluoride

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

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## 16. Other information

### GHS classification and labelling

- H301–Acute Tox. 3: H301 Toxic if swallowed
- H319–Eye Irrit. 2: H319 Causes serious eye irritation
- H361–Repr. 2: H361 Suspected of damaging fertility or the unborn child
- H335–STOT SE 3: H335 May cause respiratory irritation
- H372–STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

### Reference Book

- Globally Harmonized System of classification and labelling of chemicals, UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN IMDG Code, 2018 Edition (Incorporating Amendment 39–18)
- IATA Dangerous Goods Regulations (62nd Edition) 2021
- 2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
- 2021 TLVs and BEIs. (ACGIH)
- JIS Z 7252 : 2019
- JIS Z 7253 : 2019
- 2020 Recommendation on TLVs (JSOH)
- Supplier's data/information
- Chemicals safety data management system "GHS Assistant" Version 4.11 (<https://www.asahi-ghs.com/>)
- NITE Chemical Risk Information Platform "NITE-CHRIP" ([https://www.nite.go.jp/en/chem/chrip/chrip\\_search/systemTop](https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop))
- GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

### Definitions and Abbreviations

- SDS (Safety Data Sheet)
- LD50 (Lethal Dose, 50%)
- LC50 (Lethal Concentration, 50%)
- IARC (International Agency for Research on Cancer)
- ACGIH (American Conference of Governmental Industrial Hygienists)
- EPA (US Environmental Protection Agency)
- NTP (US National Toxicology Program)
- JSOH (Japan Society for Occupational Health)
- EU (European Union)
- EC50 (Effective Concentration, 50%)
- NOEC (No Observed Effect Concentration)
- BOD (Biochemical Oxygen Demand)
- COD (Chemical Oxygen Demand)
- BCF (Bioconcentration Factor)
- anh (anhydride)

### General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2019).