



## Safety Data Sheet

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

**Product identifier:**

Product name: Ammonium chloride

SDS No. : 0375E-2

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

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.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 4

Serious eye damage/eye irritation: Category 2B

Specific target organ toxicity – single exposure: Category 2(nerve/nervous system)

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

**ENVIRONMENT HAZARDS**

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 2

(Note) GHS classification without description: Not classified/Classification not possible

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

Harmful if swallowed

Causes eye irritation

May cause damage to organs after single exposure(nerve/nervous system)

Causes damage to organs through prolonged or repeated exposure(systemic toxicity)

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

**PRECAUTIONARY STATEMENT****Prevention**

Avoid release to the environment.

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

Wash contaminated parts thoroughly after handling.

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

**Response**

Collect spillage.

Get medical advice/attention if you feel unwell.

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

IF SWALLOWED: Rinse mouth.

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:Ammonium chloride

Content (%):98(min)

Chemical formula:NH<sub>4</sub>Cl

Chemicals No, Japan:1-218

CAS No.:12125-02-9

MW:53.49

ECNO:235-186-4

Note : The figures shown above are not the specifications of the product.

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### 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

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

IF ON SKIN (or hair)

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

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

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.

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

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### 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

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.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/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

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Avoid raising dust.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

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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/sparks/open flames/hot surfaces. – No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Wear protective gloves, protective clothing or face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

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

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling

Glass

Polyethylene

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## 8. Exposure controls/personal protection

Control parameters

Adopted value

(Ammonium chloride)

ACGIH(1970) TWA: 10mg/m<sup>3</sup>;

STEL: 20mg/m<sup>3</sup> (Eye & URT irr)

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.
  - Eye protection
    - Wear eye/face protection.

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## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

- Physical state: Crystalline powder or blocking
- Color: White
- Odor: Odorless
- pH: 4.5–6.0 (50g/L, 25°C)
- Boiling point or initial boiling point: 520°C
- Boiling range data is not available.
- Melting point/Freezing point: (decomposes) 338°C
- Decomposition temperature data is not available.
- Flammability (gases, liquids and solids) data is not available.
- Flash point data is not available.
- Auto-ignition temperature data is not available.
- Lower and upper explosion limit/flammability limit data is not available.
- Vapor pressure: 0.13 kPa (160°C)
- Relative vapor density (Air=1) data is not available.
- Density and/or relative density: 1.5g/cm<sup>3</sup>
- Kinematic viscosity data is not available.
- Solubility:
  - Solubility in water: 28.3g/100 ml (25°C)
  - n-Octanol/water partition coefficient data is not available.
- No Particle characteristics data is not available.

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## 10. Stability and Reactivity

### Reactivity

- Not available.

### Chemical stability

- Stable under normal storage/handling conditions.

### Possibility of hazardous reactions

- Decomposes on heating. This produces toxic and irritating fumes (nitrogen oxides, ammonia and hydrogen chloride). The solution in water is a weak acid. Reacts violently with ammonium nitrate and potassium chlorate. This generates fire and explosion hazard. Attacks copper and its compounds. (ICSC 1051)

### Conditions to avoid

- Contact with incompatible materials.
- Contact with fire source.

### Incompatible materials

- Ammonium nitrate, Potassium chlorate

### Hazardous decomposition products

- Nitrogen oxides, Ammonia, Hydrogen chloride



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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Ammonium chloride)

rat LD50=1410mg/kg (SIDS, 2009)

#### Irritant properties

Skin corrosion/irritation data is not available.

##### Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Ammonium chloride)

rabbit mild irritation (ACGIH 7th, 2001)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

#### STOT

##### STOT-single exposure

[cat.2]

[GHS Cat. Japan, base data]

(Ammonium chloride)

nerve/nervous system (SIDS, 2009)

##### STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Ammonium chloride)

systemic toxicity (SIDS, 2009)

Aspiration hazard data is not available.

#### Additional data

May cause lung disorders by massive inhalation of powdered substance.

-e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

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## 12. Ecological Information

### Ecotoxicity

#### Aquatic toxicity

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

##### Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Ammonium chloride)

Fish (rainbow trout) LC50=0.696mg NH<sub>3</sub>/L/96hr=2.19mg NH<sub>4</sub>Cl/L/96hr (ECETOC TR91, 2003)

#### Water solubility

(Ammonium chloride)

28.3 g/100 ml (25°C) (ICSC, 2000)

#### 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

Avoid release to the environment (- if this is not the intended use).

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

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### 14. Transport Information

UN No.: 3077

Proper Shipping Name :

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division : 9

Packing group : III

ERG GUIDE No.: 171

Special provisions No.: 274; 331; 335; 375

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 3077

Proper Shipping Name :

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division : 9

Packing group : III

Special provisions No.: 274; 335; 966; 967; 969

IATA Dangerous Goods Regulations

UN No.: 3077

Proper Shipping Name :

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division : 9

Hazard labels : Miscellaneous & Environmentally hazardous

Packing group : III

Special provisions No.: A97; A158; A179; A197

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Ammonium chloride

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

Ammonium chloride

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### 15. Regulatory Information

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

US major regulations

Chemicals listed in TSCA Inventory

Ammonium chloride

Other regulatory information

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



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**16. Other information****GHS classification and labelling**

Acute Tox. 4: H302 Harmful if swallowed

Eye Irrit. 2B: H320 Causes eye irritation

STOT SE 2: H371 May cause damage to organs after single exposure

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Aquatic Acute 2: H401 Toxic to aquatic life

Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects

**Reference Book**

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (60th Edition) 2019

Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2019 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

**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 2018).