



## Safety Data Sheet

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

**Product identifier:**

Product name: Ammonium perchlorate

SDS No. : 0401E-2

**Relevant identified uses of the substance or mixture and uses advised against**

Research and Development

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

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

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

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

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### Section 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Oxidizing solids: Category 2

**HEALTH HAZARDS**

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

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

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

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

May intensify fire; oxidizer

Causes skin irritation

Causes serious eye irritation

May cause respiratory irritation

**PRECAUTIONARY STATEMENT****Prevention**

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

Keep away from clothing and other combustible materials.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

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

**Response**

In case of fire: Use appropriate media to extinguish.

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

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



IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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.

#### Storage

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

#### Disposal

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

#### Specific Physical and Chemical hazards

Oxidizing material. Organic or combustible material may catch fire in contact with it.

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### Section 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Substance

Ingredient name:Ammonium perchlorate

Content (%):98(min)

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

Chemicals No, Japan:1-220

CAS No.:7790-98-9

MW:117.49

ECNO:232-235-1

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

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### Section 4. First-aid measures

#### Descriptions of first-aid measures

##### General measures

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

##### IF INHALED

Remove person to fresh air and keep comfortable for breathing.

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.

Wash with plenty of soap and water.

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/doctor/physician if you feel unwell.

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### Section 5. Fire-fighting measures

#### Extinguishing media

##### Suitable extinguishing media

In case of fire, use water mist, foam, dry sand to extinguish.

##### Unsuitable extinguishing media

Inactive gas firefighting equipment

Halogenated firefighting system



Dry-powder firefighting equipment – hydrogen carbonate etc.

Dry-powder firefighting equipment – other (except for phosphate etc.,hydrogen carbonate etc.)

Carbon dioxide extinguisher

Halogenated extinguisher

Dry-powder extinguisher – hydrogen carbonate etc.

Dry-powder extinguisher – other (except for phosphate etc.,hydrogen carbonate etc.)

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 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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## Section 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.

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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## Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Avoid breathing 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.

Keep away from clothing and other combustible materials.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/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.



Take off contaminated clothing and wash it before reuse.

#### 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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#### Section 8. Exposure controls/personal protection

Control parameters

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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#### Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystals

Color: Colorless to white

Odor: Odorless

Melting point/Freezing point: (decomposes) > 200°C

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

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

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 20 g/100 ml (25°C)

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

Vapor pressure data is not available.

Density and/or relative density: 1.95 g/cm<sup>3</sup>

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

Particle characteristics data is not available.



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

Not available.

**Chemical stability**

Hygroscopic (absorbs moisture from the air).

**Possibility of hazardous reactions**

May decompose on shock, friction, concussion or heating. The substance is a strong oxidant. It reacts violently with combustible and reducing materials and metals. This produces toxic and corrosive fumes including ammonia and hydrogen chloride. This generates fire and explosion hazard. (ICSC 1255)

**Conditions to avoid**

Contact with incompatible materials.

Contact with fire source.

**Incompatible materials**

Reducing agents, Combustible materials, Metals

**Hazardous decomposition products**

Ammonia, Hydrogen chloride

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**Section 11. Toxicological Information****Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ammonium perchlorate)

rat LD50=4200mg/kg (RTECS, 2005)

**Acute toxicity (Dermal)**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ammonium perchlorate)

rat no death at 3500mg/kg (IUCLID, 2000)

**Irritant properties****Skin corrosion/irritation**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ammonium perchlorate)

skin irritation (HSDB, 2005 et al)

**Serious eye damage/irritation**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ammonium perchlorate)

mucous membrane irritation (HSDB, 2005 et al)

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.

**Specific target organ toxicity (STOT)****STOT-single exposure**

[Data for components of the product]

[cat.3 (respiratory tract irritation)]

[GHS Cat. Japan, base data]

(Ammonium perchlorate)



respiratory tract irritation (HSDB, 2005)  
STOT-repeated exposure data is not available.  
Aspiration hazard data is not available.

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**Section 12. Ecological Information****Toxicity****Aquatic toxicity**

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[GHS Cat. Japan, base data]

(Ammonium perchlorate)

Crustacea (Daphnia magna) EC50=396.21mg/L/48hr (AQUIRE, 2020)

Hazardous to the aquatic environment, long-term (chronic)

[GHS Cat. Japan, base data]

(Ammonium perchlorate)

Crustacea (Daphnia magna) NOEC=80mg/L/21 days (AQUIRE, 2020)

**Water solubility**

(Ammonium perchlorate)

20 g/100 ml (25°C) (ICSC, 2006)

**Persistence and degradability**

[Data for components of the product]

(Ammonium perchlorate)

Not rapidly degradable (BIOWIN)

**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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**Section 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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**Section 14. Transport Information**

UN Number or ID Number : 1442

UN Proper Shipping Name :

AMMONIUM PERCHLORATE

Class or division (Transport hazard class) : 5.1

Packing group : II

ERG GUIDE No.: 143

Special provisions No.: 152

**IMDG Code (International Maritime Dangerous Goods Regulations)**

UN Number or ID Number : 1442

UN Proper Shipping Name :

AMMONIUM PERCHLORATE

Class or division (Transport hazard class) : 5.1

Packing group : II

Special provisions No.: 152

**IATA (Dangerous Goods Regulations)**

UN Number or ID Number : 1442  
UN Proper Shipping Name :  
AMMONIUM PERCHLORATE  
Class or division (Transport hazard class) : 5.1  
Hazard labels : Oxidizer  
Packing group : II  
Special provisions No.: A22

**Environmental hazards**

Marine pollutants (yes/no) : no

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**Section 15. Regulatory Information**

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

Ammonium perchlorate

Other regulatory information

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

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**Section 16. Other information**

GHS classification and labelling

Oxidising Solids, Category 2: H272 May intensify fire; oxidiser

Skin corrosion/irritation, Category 2: H315 Causes skin irritation

Serious eye damage/eye irritation, Category 2: H319 Causes serious eye irritation

STOT – single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2020 Edition (Incorporating Amendment 40-20)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2022 TLVs and BEIs. (ACGIH)

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 2021).