



Safety Data Sheet

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

Product identifier:

Product name: Cation(5 sorts)mixed standard solution

SDS No. : M0015E-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**

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

Label elements

No GHS label element

No Signal word

3. Composition/information on ingredients

Mixture/Substance selection:**Mixture**

Ingredient name:Ammonium sulfate

Content (%):0.037

Chemical formula:H8N2O4S

Chemicals No, Japan:1-400

CAS No.:7783-20-2

MW:132.14

ECNO:231-984-1

Ingredient name:Potassium chloride

Content (%):0.019

Chemical formula:ClK

Chemicals No, Japan:1-228

CAS No.:7447-40-7

MW:74.55

ECNO:231-211-8

Ingredient name:Sodium chloride

Content (%):0.025

Chemical formula:NaCl

Chemicals No, Japan:1-236

CAS No.:7647-14-5

MW:58.44

ECNO:231-598-3



Ingredient name:Magnesium(II) nitrate,anhydride

Content (%):0.062

Chemical formula:MgN2O6

Chemicals No, Japan:1-464

CAS No.:10377-60-3

MW:148.33

ECNO:233-826-7

Ingredient name:Calcium chloride

Content (%):0.028

Chemical formula:CaCl2

Chemicals No, Japan:1-176

CAS No.:10043-52-4

MW:110.98

ECNO:233-140-8

Ingredient name:Water

Content (%):99

Chemical formula:H2O

CAS No.:7732-18-5

MW:18.02

ECNO:231-791-2

Note : The figures shown above are not the specifications of the product. The content of products may exceed the figures shown above.

4. First-aid measures

Descriptions of first-aid measures

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.

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.

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

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

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(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"

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

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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

- Physical state: Liquid
- Color: Colorless, Clear
- Odor: None
- pH data is not available.
- Boiling point or initial boiling point data is not available.
- Boiling range data is not available.
- Melting point/Freezing point data is not available.
- 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 data is not available.
- Relative vapor density (Air=1) data is not available.
- Density and/or relative density: 1.00g/cm³
- Kinematic viscosity data is not available.
- Solubility:
 - Solubility in water: Soluble
 - n-Octanol/water partition coefficient data is not available.
 - No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Magnesium(II) nitrate,anhydride)

The substance is a strong oxidant. It reacts with combustible and reducing materials. This generates fire and explosion hazard. (ICSC 1041)

(Calcium chloride)

Decomposes on heating. This produces toxic and corrosive fumes of chlorine. The solution in water is a weak base. Attacks zinc in the presence of water. This produces flammable/explosive gas (hydrogen). Dissolves violently in water with liberation of much heat. (ICSC 1184)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Reducing agents, Combustible materials, Zinc

Hazardous decomposition products

Sulfur oxides, Nitrogen oxides, Chlorine, Hydrogen

11. Toxicological Information

Information on toxicological effects

**Acute toxicity****Acute toxicity (Oral)**

[GHS Cat. Japan, base data]

(Calcium chloride)

female rat LD50=1940mg/kg (SIDS, 2008)

[Company proprietary data]

(Potassium chloride)

rat LD50=2600 mg/kg (Hazardous Substances Data Bank)

rat LD50=3020 mg/kg (Hazardous Substances Data Bank)

(Sodium chloride)

rat LD50=3000mg/kg

(Ammonium sulfate)

Rat oral LD50 = 3000 mg/kg (Hazardous Substances Data Bank)

Irritant properties

Skin corrosion/irritation data is not available.

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Calcium chloride)

human severe irritation (SIDS Access on Dec. 2008)

(Magnesium(II) nitrate,anhydride)

rabbit Draize test:mild (IUCRID, 2000 et al)

[Company proprietary data]

(Potassium chloride)

Category 2B

(Sodium chloride)

Category 2A

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.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Calcium chloride)

respiratory tract irritation (SIDS, 2008)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

12. Ecological Information**Ecotoxicity****Aquatic toxicity****Aquatic acute toxicity component(s) data**

[GHS Cat. Japan, base data]

(Calcium chloride)

Fish, Algae, Crustacea LC/EC50 >100mg/L (SIDS, 2005)

[Company proprietary data]

(Ammonium sulfate)

Alburnus alburnus (common bleak) LC50 = 310 mg/L/96hr (Hazardous Substances Data Bank)

(Sodium chloride)

Fish(Lepomis macrochirus) LC50=9675mg/L/96hr

(Potassium chloride)

Fish(Fathead minnow) LC50= 880mg/L/96hr(Hazardous Substances Data Bank)



Crustacea(Daphnia magna) EC50= 141mg/L/48hr(Hazardous Substances Data Bank)

Water solubility

(Calcium chloride)

74.5 g/100 ml (20°C) (ICSC, 2012)

(Magnesium(II) nitrate,anhydride)

very good (ICSC, 2003)

(Potassium chloride)

good (ICSC, 2003)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Potassium chloride)

log Kow=0.15 (PHYSPROP DB, 2005)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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.

14. Transport Information

Not applicable to UN No., UN CLASS

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Z

Ammonium sulfate

Non Noxious Liquid ; Cat. OS

Potassium chloride; Water

15. Regulatory Information

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

US major regulations

Chemicals listed in TSCA Inventory

Potassium chloride; Sodium chloride; Water; Ammonium sulfate; Calcium chloride;

Magnesium(II) nitrate,anhydride

Other regulatory information

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

16. Other information

The product is not applicable to GHS classifications.

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).