

Safety Data Sheet

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

Product identifier:

Product name: 0.1mol/L Cerium(IV)diammonium nitrate solution

Product code(SDS NO): 95501jis_J_E1-1

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

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

Division: Quality Assurance Department

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity Inhalation: Category 3

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 2(respiratory system)

Specific target organ toxicity – repeated exposure: Category 2(respiratory system)

(Note) GHS classification without description: Not applicable/Out of classification/Not classifiable

Label elements



Signal word: Danger

HAZARD STATEMENT

Toxic if inhaled

Causes severe skin burns and eye damage

Causes serious eye damage

May cause damage to organs after single exposure

May cause damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENT

Prevention

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 protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

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

Response

Get medical advice/attention if you feel unwell.

Immediately call a POISON CENTER or doctor/physician.

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

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash contaminated clothing before reuse.

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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. Do NOT induce vomiting.

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.

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name: Cerium(IV)diammonium nitrate

Content(%): 5.48 (w/v)

Chemical formula: $CeH_8N_8O_{18}$

Chemicals No, Japan: 1-626

CAS No.: 16774-21-3

MW: 548.22

ECNO: 240-827-6

Ingredient name: Sulfuric acid

Content(%): ca. 5 (w/v)

Chemical formula: H_2O_4S

Chemicals No, Japan: 1-430

CAS No.: 7664-93-9

MW: 98.08

ECNO: 231-639-5

Ingredient name: Water

Content(%): Residual quantity of the ingredient mentioned above

Chemical formula: H_2O

CAS No.: 7732-18-5

MW: 18.02

ECNO: 231-791-2

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.

Immediately call a POISON CENTER or doctor/physician.

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

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IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.
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.

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/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 after material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to the 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.

Preventive measures for secondary accident

Collect spillage.

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.

Avoid breathing dust, fume, gas, mist or vapor.

Safety Measures/Incompatibility

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

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Conditions for safe storage, including any incompatibilities

Recommendation for storage

- Store in a well-ventilated place. Keep container tightly closed.
- Keep cool. Protect from sunlight.
- Store locked up.

8. Exposure controls/personal protection

Control parameters

No control value data available in MHLW

Adopted value

- (Sulfuric acid)
- JSOH(2000) (ceiling limit) 1mg/m³
- ACGIH(2000) TWA: 0.2mg/m³(T) (Pulm func)

OSHA-PEL

- (Sulfuric acid)
- TWA 1mg/m³

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 eye/face protection.

Safety and Health measures

- Wash ... thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wash contaminated clothing before reuse.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical properties

- Appearance: Liquid
- Color: Red-orange
- Odor data N.A.
- pH: Acidic

Phase change temperature

- Initial Boiling Point/Boiling point data N.A.
- Melting point/Freezing point data N.A.
- Decomposition temperature data N.A.
- Flash point data N.A.
- Auto-ignition temperature data N.A.
- Explosive properties data N.A.
- Vapor pressure data N.A.

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Vapor density data N.A.

Specific gravity/Density data N.A.

Solubility

Solubility in water: Miscible

n-Octanol /water partition coefficient data N.A.

10. Stability and Reactivity

Chemical stability

Stable under normal storage/handling conditions.

Conditions to avoid

Contact with incompatible materials.

Heat.

Incompatible materials

Bases

Hazardous decomposition products

Sulfur oxides, Nitrogen oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Sulfuric acid) rat LD50=2140 mg/kg (SIDS, 2001)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Sulfuric acid) mist : rat LC50=0.347 mg/L/4hr (SIDS, 2001)

Labor standard law, Japan; Toxic

Sulfuric acid

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Sulfuric acid) corrosive substance

Serious eye damage /irritation

[GHS Cat. Japan, base data]

(Sulfuric acid) human : severe damage (ATSDR, 1998)

No Allergenic and sensitizing effects data available

No Mutagenic effects data available

Carcinogenicity

(Sulfuric acid)

IARC-Gr.1 : Carcinogenic to humans

ACGIH-A2(2000) : Suspected Human Carcinogen

No reproductive toxicity data available

Delayed and immediate effects and also chronic effects from short- and long-term exposure

STOT

STOT-single exposure

[cat.1]

[Japan published data]

(Sulfuric acid) respiratory apparatus/system (ATSDR, 1998)

STOT-repeated exposure

[cat.1]

[Japan published data]

(Sulfuric acid) respiratory apparatus/system (ATSDR, 1998)

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No Aspiration hazard data available

Additional data

There are no data available on the preparation itself.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Sulfuric acid) Fish(bluegill) LC50=16~28mg/L/96hr (SIDS, 2003)

Water solubility

(Sulfuric acid) miscible (ICSC, 2000)

No Persistence and degradability data available

No Bioaccumulative potential data available

Additional information

There are no data available on the preparation itself.

13. Disposal considerations

Waste treatment methods

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

14. Transport Information

UN No, UN CLASS

UN number: 2796

UN proper shipping name: SULPHURIC ACID with not more than 51% acid or BATTERY FLUID, ACID

Transport hazard class(es): 8

Packing group: II

ERG GUIDE NO.: 157

15. Regulatory Information

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

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

Noxious Liquid ; Cat. Y

Sulfuric acid

Non Noxious Liquid ; Cat. OS

Water

US major regulations

TSCA

Sulfuric acid; Water; Cerium(IV)diammonium nitrate

Other regulatory information

We are not able to check up the regulatory information in 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.

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

Acute Tox. 3: H331 Toxic if inhaled

Skin Corr. 1: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage

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

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN

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

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2017 TLVs and BEIs. (ACGIH)

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

Supplier's data/information

NITE Chemical Risk Information Platform (NITE-CHRIP) <http://www.safe.nite.go.jp/japan/db.html>

GHS Classification Guidance for Enterprises 2013 Revised Edition (August, 2013, METI)

General Disclaimer

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own tests to determinate the safety and suitability of each such product or combination for their own purposes.

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 2016).