

Safety Data Sheet

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

Product identifier:

Product name: Ammonia solution

Product code (SDS NO): 13370jis_E1-4

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

PHYSICAL AND CHEMICAL HAZARDS

Corrosive to metals: Category 1

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 1 (central nervous system, respiratory system)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H290–May be corrosive to metals

H302–Harmful if swallowed

H314–Causes severe skin burns and eye damage

H318–Causes serious eye damage

H370–Causes damage to organs after single exposure

H401–Toxic to aquatic life

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

Keep only in original container.

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

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

Absorb spillage to prevent material damage.

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.

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

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

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Disposal

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

3. Composition/information on ingredients**Mixture/Substance selection:****Mixture**

Chemical identification: Ammonia aqueous solution (MW:35.05; CAS No. 1336-21-6; ECNO:215-647-6; Chemicals No, Japan:1-314)

Ingredient name:Ammonia

Content (%):28~30

Chemical formula:H3N

Chemicals No, Japan:1-391

CAS No.:7664-41-7

MW:17.03

ECNO:231-635-3

Ingredient name:Water

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

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.

4. First-aid measures**Descriptions of first-aid measures****General measures**

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.

IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.

Immediately give the person one or two glasses of water, to dilute the chemical.

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

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Cough. Sore throat. Burning sensation. Laboured breathing. Shortness of breath. Vomiting. Abdominal pain.

(Symptoms when skin and/or eye contact)

Redness. Pain. Blurred vision. Severe deep burns. Blisters.

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 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.

Cool container with water spray.

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

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.

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.

Cautiously neutralize spilled liquid with dilute acid such as dilute sulfuric acid.

Preventive measures for secondary accident

Absorb spillage to prevent material damage.

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.

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.

Wear eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Release caps with care.

Be aware that ammonia gas can evolve from this product .

Any incompatibilities

Acids, Metals 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.

Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

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

Keep cool. Protect from sunlight.

(Incompatible storage condition)

Protect from sunlight. Do not expose to temperatures exceeding 50°C.

The product may corrode metal. Do not keep in a metal container.

Do NOT completely fill bottles with the substance: strong solutions may develop pressure.

Container and packaging materials for safe handling

Keep only in original container.

Store in corrosion resistant/specified container with a resistant inner liner.

8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

(Ammonia)

JSOH(1979) 25ppm; 17mg/m³

ACGIH(1970) TWA: 25ppm;

STEL: 35ppm (Eye dam; URT irr)

OSHA-PEL

(Ammonia)

TWA: 50ppm, 35mg/m³

NIOSH-REL

(Ammonia)

TWA: 25ppm; STEL 35ppm

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.
- Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

- Wear protective gloves. Recommended material(s): butyl rubber
- Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

- Wear chemical safety goggle.
- Wear eye/face protection.

Skin and body protection

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

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

Physical state: Volatile solution

Color: Colorless

Odor: Irritant odor

Odor threshold data is not available.

pH: 11.5 <= pH(Strong basic)

Boiling point or initial boiling point: 38°C(25%); 25°C(32%)

Boiling range data is not available.

Evaporation rate data is not available.

Melting point/Freezing point: -58°C(25%)

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT 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.

Critical temperature data is not available.

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

Vapor pressure: 48 kPa (20°C)(25%)

Vapor density data is not available.

VOC data is not available.

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.

Density and/or relative density: 0.8980g/cm³(20°C)(28%)

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent data is not available.

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

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

Very volatile.

Possibility of hazardous reactions

Reacts with many heavy metals and heavy metal salts. This produces explosive compounds.

Attacks many metals. This produces flammable/explosive gas. It reacts violently with acids.

This generates fire and explosion hazard.

Decomposes on heating. This produces toxic and corrosive fumes. This generates toxic hazard.

Conditions to avoid

Contact with incompatible materials.

Heat.

Incompatible materials

Acids, Metals.

Hazardous decomposition products

Nitrogen oxides, Hydrogen gas, Ammonia gas

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Ammonia aqueous solution) rat LD50=350mg/kg (SIDS, 2008)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Ammonia) gas: rat LC50=7679ppm/4hr (EHC 54, 1986)

Labor standard law, Japan; Toxic

Ammonia; Ammonia, aqueous solution

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Ammonia aqueous solution) rabbit corrosive (SIDS, 2008)

(Ammonia) severe necrosis (DFGOT vol. 6, 1994)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Ammonia, aqueous solution) corrosive (SIDS, 2008)

(Ammonia) severe necrosis (DFGOT vol. 6, 1994)

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.1]

[GHS Cat. Japan, base data]

(Ammonia) CNS; respiratory apparatus (ATSDR, 2004)

(Ammonia, aqueous solution) CNS; respiratory apparatus (HSDB, Access on Jun. 2014; ATSDR, 2004)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Ammonia) respiratory apparatus (ATSDR, 2004)

Aspiration hazard data is not available.

Additional data

Data on the preparation itself is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H401-Toxic to aquatic life

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Ammonia aqueous solution)

Crustacea (*Mysidopsis bahia*) LC50=2.81-98.9mg-total NH₃/L/96hr (SIDS, 2007)

(Ammonia) Fish (*Oncorhynchus gorboscha*) LC50=0.083mg-NH₃/L/96hr (EHC54, 1986)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]

(Ammonia aqueous solution)

Crustacea (*Mysidopsis bahia*) NOEC=3.47mg-total NH₃/L/32days (SIDS, 2007)

Water solubility

(Ammonia, aqueous solution) miscible (ICSC, 2018)

(Ammonia) 54 g/100 ml (20°C) (ICSC, 2013)

Persistence and degradability data is not available.

Bioaccumulative potential data is not available.

Mobility in soil data is not available.

Ozone depleting chemical data is not available.

Additional data

Data on the preparation itself is not available.

13. Disposal considerations

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.

14. Transport Information

UN No., UN CLASS

UN No.: 2672

Proper Shipping Name :

AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15 ° C in water, with more than 10% but not more than 35% ammonia

Class or division : 8

Packing group : III

ERG GUIDE No.: 154

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2672

Proper Shipping Name :

AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15 ° C in water, with more than 10% but not more than 35% ammonia

Class or division : 8

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 2672

Proper Shipping Name :

AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15 ° C in water, with more than 10% but not more than 35% ammonia

Class or division : 8

Hazard labels : Corrosive

Packing group : III

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

15. Regulatory Information

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

Environmental hazards

US major regulations

TSCA

Ammonia aqueous solution; Water; Ammonia

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).

16. Other information

GHS classification and labelling

H290–Corr. Met. 1: H290 May be corrosive to metals

H302–Acute Tox. 4: H302 Harmful if swallowed

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

H318–Eye Dam. 1: H318 Causes serious eye damage

H370–STOT SE 1: H370 Causes damage to organs after single exposure

H401–Aquatic Acute 2: H401 Toxic to aquatic life

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

Chemicals safety data management system "GHS Assistant" (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform (NITE–CHRIP)

https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop

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).