Date of issue: 09/05/2014
Date of revision : 13/12/2017

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_E1-3

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
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

Physiacal 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 hazard: Category 2

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

Label elements

Signal word: Danger

HAZARD STATEMENT

May be corrosive to metals

Harmful if swallowed

Causes severe skin burns and eye damage

Causes serious eye damage

Causes damage to organs after single exposure

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 eye irritation persists: Get medical advice/attention.

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

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store locked up.

Store in corrosive resistant/...container with a resistant inner liner.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Ammonia, aqueous solution

Content(%):28～30

Chemical formula:NH4OH

Chemicals No, Japan:1-314

CAS No.:1336-21-6

MW:35.05(NH3:17.03)

ECNO:215-647-6

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.

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)

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

(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.

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 peace 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 after material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFTY: Ventilate closed spaces before entering.

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.

Cautiously neutralize spilled liquid with 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.
Avoid breathing dust, fume, gas, mist or vapor.

Safety Measures/Incompatibility
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.

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.

Incompatible storage condition
The product may corrode metal. Do not keep in a metal container.
Do NOT completely fill bottles with the substance.

Recommendation on container and packaging materials
Keep only in original container.
Store in corrosive resistant/...container with a resistant inner liner.

8. Exposure controls/personal protection

Control parameters

No control value data available in MHLW

Adopted value
(Ammonia)
JSOH(1979) 25ppm; 17mg/m3
ACGIH(1970) TWA: 25ppm STEL: 35ppm

OSHA-PEL
(Ammonia)
TWA 50ppm, 35mg/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.
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.

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: Volatile solution

Color: Colorless

Odor: Strong pungent odor

pH: 11.5 <= pH(Strong basic)

Phase change temperature

Initial Boiling Point/Boiling point: 38℃(25%)

Melting point/Freezing point: -69.2℃(28%)

Decomposition temperature data N.A.

Flash point data N.A.

Auto-ignition temperature data N.A.

Explosive properties: Flammability or explosive limit

Lower limit: 15vol % (as NH3)

Upper limit: 33.6vol % (as NH3)

Vapor pressure: 48 kPa (20℃)(25%)

Relative Vapor Density (Air=1): 0.6～1.2

Specific gravity/Density: 0.8980g/cm3(20℃)(28%)

Solubility

Solubility in water: miscible

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

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.

Reacts violently with acids.

Conditions to avoid

Contact with incompatible materials.

Heat.

Incompatible materials

Acids, Metals.

Hazardous decomposition products

Nitrogen oxides, Hydrogen gas

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

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

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

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

Serious eye damage /irritation

[GHS Cat. Japan, base data]

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

No Allergenic and sensitizing effects data available

No Mutagenic effects data available

No Carcinogenic effects data available

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]

(Ammonia, aqueous solution)

CNS; respiratory apparatus/system (HSDB, Access on June 2014; ATSDR, 2004)

No Aspiration hazard data available

Additional data

There are no data available on the preparation itself.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Toxic to aquatic life

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

(Ammonia, aqueous solution)

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

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]

(Ammonia, aqueous solution)

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

Water solubility

(Ammonia, aqueous solution) miscible (ICSC, 1995)

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

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 number: 2672

UN 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

Transport hazard class(es): 8

Packing group: III

ERG GUIDE NO.: 154

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

Ammonia, aqueous solution

Non Noxious Liquid ; Cat. OS

Water

US major regulations

TSCA

Ammonia, aqueous solution; Water

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

Corr. Met. 1: H290 May be corrosive to metals
Acute Tox. 4: H302 Harmful if swallowed
Skin Corr. 1: H314 Causes severe skin burns and eye damage
Eye Dam. 1: H318 Causes serious eye damage
STOT SE 1: H370 Causes damage to organs after single exposure
Aquatic Acute 2: H401 Toxic to aquatic life

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).