date of issue: 27/01/2014

Safety Data Sheets

1. Identification

Product name: 1mol/L Acetic acid

Name of supplier :JUNSEI CHEMICAL CO., LTD.

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

Division :Quality Assurance Department

Phone :+81-48-986-6161 FAX :+81-48-989-2787 E-mail :shiyaku-t@junsei.co.jp Product code(SDS NO) :95333jis_E1-1

2. Hazards identification

GHS classification and label elements of the product

GHS classification

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

3. Composition/information on ingredients

Substance/Preparation : Preparation

Ingredient name: Acetic acid

content(%):ca. 6

Chemical formula:C2H4O2

Chemicals No, Japan:2-688

CAS No.:64-19-7

MW:60.05

HAZCODE_EU:3_H226; 1A_H314 (conc.≥90)

ECNO:200-580-7

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

4. First-aid measures

IF INHALED

Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

IF ON SKIN(or hair)

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 FYES

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

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

Specific hazards arising from the chemical

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear cold insulating gloves/face shield/eye 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

Ventilate area after material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to the rivers, lakes, ocean, groundwater.

Methods and materials for neutralization, 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)

Use personal protective equipment as required.

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, vapor, mist, or gas.

Safety Measures/Incompatibility

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

When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

Recommendation for storage

Keep container tightly closed.

Keep cool . Protect from sunlight.

Store in well-ventilated place.



8. Exposure controls/personal protection

Control parameters e.g. occupational exposure limit values or biological limit values

Adopted value

(Acetic acid)

ACGIH(2003) TWA: 10ppm

STEL: 15ppm (URT & eye irr; pulm func)

OSHA-PEL

(Acetic acid)

TWA 10ppm, 25mg/m3

NIOSH-REL

(Acetic acid)

TWA 10ppm, 25mg/m3; STEL 15ppm, 37mg/m3

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Protective equipment

Respiratory protection

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

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

9. Physical and Chemical Properties

Physical properties

Appearance :liquid

Color :colorless

odour data N.A.

pH:2.4

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

Vapor pressure data N.A

Vapor density data N.A

Relative Vapor Density (Air=1) 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

Stability

Stable under normal storage/handling conditions.

Conditions to avoid

Contact with incompatible materials.

Heat.

Incompatible materials

Bases, Oxidizing agents



Hazardous decomposition products
Carbon oxides

11. Toxicological Information

Symptoms related to the physical, chemical and toxicological characteristics

Acute toxicity

Oral toxicity component(s) data

(Acetic acid)

rat LD50=3310 mg/kg (PATTY 5th, 2001)

Dermal toxicity component(s) data

(Acetic acid)

rabbit LD50=1060 mg/kg (PATTY 5th, 2001)

Irritant properties

Skin corrosion/irritation

Skin corrosion/Irritation component(s) data

(Acetic acid)

rabbit 525 mg open; SEVERE rabbit 50 mg/24H; MILD

Serious eye damage /irritation

Eye damage/irritation component(s) data

(Acetic acid)

rabbit $50 \mu g$; SEVERE rabbit 100 mg rinse; MILD

No Allergenic and sensitizing effects data available

No Mutagenic effects data available

No Teratogenic effects data available

No Carcinogenic effects data available

No Toxicity for reproduction data available

No Delayed/chronic effects from short/long-term exposure data available

No Aspiration hazard data available

Additional data

There are no data available on the preparation itself.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Aquatic toxicity component(s) data

(Acetic acid)

Crustacea (Daphnia magna) EC50=65 mg/L/48hr (AQUIRE, 2010)

Water solubility

(Acetic acid)

miscible (ICSC, 1997)

Persistence and degradability

(Acetic acid)

BOD_Degradation: 74% (Registered chemicals data check & review, Japan)

Bioaccumulative potential

(Acetic acid)

log Pow=-0.17(PHYSPROP Database, 2005)

Additional data

There are no data available on the preparation itself.

13. Disposal Considerations

Disposal methods



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

14. Transport Information

UN No. UN CLASS

Not applicable to UN NO.

15. Regulatory Information

Sea pollutants control law

Noxious Liquid; Cat. Z: Acetic acid Non Noxious Liquid; Cat. OSWater

The product is not applicable to GHS classifications.

US major regulations

TSCA

Acetic acid: Water

Other regulatory information

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

16. Other information

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (4th ed., 2011), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 17th edit. UN Classification, labelling and packaging of substances and mixtures (reg.(EC) No 1272/2008) 2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT)

2013 TLVs and BEIs. (ACGIH)

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

Supplier's data/information

Chemical Risk Information Platform (CHRIP)(NITE) http://www.safe.nite.go.jp/japan/db.html GHS Classification Guidance for Enterprises 2013 Revised Edition (August, 2013,METI)

Other information

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 test 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 currentEU official data