Date of issue: 06/10/2015
revised date 01/02/2017

Safety Data Sheet

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

Product identifier:

Product name: Diethyl ether

Product code(SDS NO): 33475jis_J_E1-2

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

PHYSICAL HAZARDS

Flammable liquids: Category 1

HEALTH HAZARDS

Acute toxicity Oral: Category 4

Serious eye damage/eye irritation: Category 2B

Reproductive toxicity: Category 2

Specific target organ toxicity - single exposure: Respiratory tract irritation Category 3

Specific target organ toxicity - single exposure: Narcosis Category 3

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

Label elements

Signal word: Danger

HAZARD STATEMENT

Extremely flammable liquid and vapor

Harmful if swallowed

Causes eye irritation

Suspected of damaging fertility or the unborn child

May cause respiratory irritation

May cause drowsiness or dizziness

PRECAUTIONARY STATEMENT

Prevention

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves and face protection.
Use personal protective equipment as required.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media.
IF exposed or concerned: Get medical advice/attention.
Call a POISON CENTER or doctor/physician if you feel unwell.
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.
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.

Storage

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

Disposal

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

Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients

Substance/Mixture:

Substance

Ingredient name:Diethyl ether
Content(%):99.0 <
Chemical formula:C4H10O
Chemicals No, Japan:2-361
CAS No.:60-29-7
MW:74.12
ECNO:200-467-2

Impurities and stabilizing additives

Stabilizer : Phenol derivative (2ppm)

4. First-aid measures

Descriptions of first-aid measures

General measures

IF exposed or concerned: Get medical attention/advice.
Call a POISON CENTER or doctor/physician if you feel unwell.

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.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, dry powder.

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

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 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.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Avoid breathing dust/fume/gas/mist/vapors/spray.

(Protective measures against fire & explosion)

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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

Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Wear protective gloves, protective clothing or face protection.
Wear protective gloves and face protection.
Use personal protective equipment as required.
When using do not eat, drink or smoke.

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

Control value

Japan control value (1995) <= 400ppm

Adopted value

JSOH(1997) 400ppm; 1200mg/m3
ACGIH(1966) TWA: 400ppm
STEL: 500ppm (CNS impair; URT irr)

OSHA-PEL

TWA 400ppm, 1200mg/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.

Eye protection

Wear eye/face protection.

Safety and Health measures

Wash ... thoroughly after handling.
Do not eat, drink or smoke when using this product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical properties

Appearance: Volatile liquid
Color: Colorless-Clear
Odor: Characteristic odor
pH data N.A.

Phase change temperature

Initial Boiling Point/Boiling point: 35℃
Melting point/Freezing point: -116℃

Decomposition temperature data N.A.
Flash point: (C.C.) -45℃
Auto-ignition temperature: 160～180℃
Explosive properties: Flammability or explosive limit
lower limit: 1.7 vol %
upper limit: 48 vol %
Vapor pressure: 58.6 kPa (20℃)
Relative Vapor Density (Air=1): 2.6
Relative density of the Vapor/air-mixture at 20℃ (Air = 1): 1.9
Specific gravity/Density: 0.712～0.714 g/ml (20℃)
Solubility
Solubility in water: 60.4g/liter(25℃)
Solubility in solvent: Very sol in ethanol, benzene and chloroform.
n-Octanol /water partition coefficient: log Pow0.89

10. Stability and Reactivity

Chemical stability
Stable under normal storage/handling conditions.
Extremely flammable.
Possibility of hazardous reactions
The vapour is heavier than air and may travel along the ground; distant ignition possible.
As a result of flow, agitation, etc., electrostatic charges can be generated.
The substance can form explosive peroxides under the influence of light and air.
Reacts violently with halogens, interhalogens, sulfur compounds and oxidants. This generates fire and explosion hazard.
Attacks plastics and rubber.
Conditions to avoid
Contact with incompatible materials.
Open flames. Heat. Light. Air.
Incompatible materials
Oxidizing agents, Halogens, Interhalogens, Sulfur compounds .
Hazardous decomposition products
Carbon oxides

11. Toxicological Information

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[GHS Cat. Japan, base data]
rat LD50=1207 mg/kg (PATTY 5th, 2005)
Acute toxicity (Inhalation)
[GHS Cat. Japan, base data]
vapor : rat LC50=73000ppm/150min(converted value : LC50=45625ppm/4hr)(DFGOT vol.13, 1999)
Labor standard law, Japan; Toxic
Diethyl ether
Irritant properties
Skin corrosion/irritation
[GHS Cat. Japan, base data]
rabbit : no stimulativeness (DFGOT vol.13, 1999)
Serious eye damage /irritation
[GHS Cat. Japan, base data]

rabbit : mild reversible stimulativeness (DFGOT vol.13, 1999)

No Allergenic and sensitizing effects data available

No Mutagenic effects data available

No Carcinogenic effects data available

Reproductive toxicity

[GHS Cat. Japan, base data]

cat.2; rat : IUCLID, 2005

No Teratogenic effects data available

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

STOT

STOT-single exposure

[cat.3(resp. irrit.)]

[Japan published data]

Respiratory tract irritation (IUCLID, 2005)

[cat.3(drow./dizz.)]

[Japan published data]

Narcosis (IUCLID, 2005)

No Aspiration hazard data available

12. Ecological Information

Toxicity

Aquatic toxicity

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

Crustacea(Daphnia magna) LC50=1378.63 mg/L/48hr (ECETOC, 2003)

Water solubility

60.4 g/L (PHYSPROP Database, 2005)

Persistence and degradability

Non-biodegradable (Registered chemicals data check & review)

Bioaccumulative potential

log Pow=0.89 (ICSC, 2002); BCF(conc. : 500 ug/L)=0.9～1.4 (Registered chemicals data check & review)

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: 1155

UN proper shipping name: DIETHYL ETHER (ETHYL ETHER)

Transport hazard class(es): 3

Packing group: I

ERG GUIDE NO.: 127

15. Regulatory Information

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

US major regulations

TSCA

Diethyl ether

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

Flam. Liq. 1: H224 Extremely flammable liquid and vapor
Acute Tox. 4: H302 Harmful if swallowed
Eye Irrit. 2B: H320 Causes eye irritation
Repr. 2: H361 Suspected of damaging fertility or the unborn child
STOT SE 3: H335 May cause respiratory irritation
STOT SE 3: H336 May cause drowsiness or dizziness

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 18th edit., 2013 UN Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)
2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT)
2016 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)

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 2015).