date of issue : 14/01/2014

Safety Data Sheets

1. Identification

Product name :Toluene

Name of supplier :JUNSEI CHEMICAL CO., LTD.

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Division :Quality Assurance Department

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Product code(SDS NO) :50070jis_J_E1-1

2. Hazards identification

GHS classification and label elements of the product

GHS classification

PHYSICAL HAZARDS

Flammable liquids : Category 2

HEALTH HAZARDS

Skin corrosion/irritation : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure; Narcosis Category 3

Specific target organ toxicity-repeated exposure : Category 2

Aspiration hazard : Category 1

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

Signal word : Danger

HAZARD STATEMENT

Highly flammable liquid and Vapor

Causes skin irritation.

Suspected of damaging fertility or the unborn child

May cause drowsiness and dizziness

May causes damage to organs following repeated exposure.

May be fatal if swallowed and enters airways.

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

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.

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

Wash contaminated parts thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/eye protection/face protection.
Use personal protective equipment as required.

Response

Get medical advice/attention if you feel unwell.
Do NOT induce vomiting.
Take off contaminated clothing and wash before reuse.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
If skin irritation occurs: Get medical advice/attention.
In case of fire: Use appropriate media other than water for extinction.

Storage

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

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/Preparation :Substance

Ingredient name:Toluene
content(%):99.0 <
Chemical formula:C7H8
Chemicals No, Japan:3-2
CAS No.:108-88-3
MW:92.14
HAZCODE_EU:2_H225; 1_H304; 2_H315; 3_H336; 2_H361d ***; 2_H373 **
ECNO:203-625-9

4. First-aid measures

General procedures

Get medical attention/advice if you feel unwell.
IF exposed or concerned: Get medical attention/advice.

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.
Wash with plenty of soap and water.
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 call a POISON CENTER or doctor/physician.

5. Fire-fighting measures

Suitable extinguishing media

In case of fire, use foam, dry powder, CO2

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.

Specific fire-fighting measures

Cool container with water spray.

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)

Do not breathe dust/fume/gas/mist/vapours/spray.
Use personal protective equipment as required.
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

Obtain special instructions before use.
Use only outdoors or in a well-ventilated area.

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

8. Exposure controls/personal protection

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

Adopted value

ACGIH(2006) TWA: 20ppm (Visual impair; female repro; pregnancy loss)

OSHA-PEL

TWA 200ppm; STEL 300mg/m3

NIOSH-REL

TWA 100ppm, 375mg/m3; STEL 150ppm, 560mg/m3

California proposition 65

developmental MADL

(female) MADL=7000μg/day

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.

Safety and Health measures

Wash ... thoroughly after handling.
Take off contaminated clothing.

9. Physical and Chemical Properties

Physical properties

Appearance :LIQUID
Color :COLOURLESS
Odor :CHARACTERISTIC ODOUR
pH data N.A.

Phase change temperature

Initial Boiling Point/Boiling point :111℃
Melting point/Freezing point :-95℃
Decomposition temperature data N.A.
Flash point :(C.C.) 4℃
Auto-ignition temperature :480℃
Explosion :Flammability or explosive limit

lower limit :1.1 vol %
upper limit :7.1 vol %

Vapor pressure :3.8 kPa (25℃)
Relative Vapor Density (Air=1) :3.1

Relative density of the Vapor/air-mixture at 20℃ (Air = 1) :1.01
Specific gravity/Density :0.87
Solubility
Solubility in water :526 mg/L (25℃)
Solubility in solvent :Miscible with ethanol, diethyl ether.
n-Octanol /water partition coefficient : log Pow2.73

10. Stability and Reactivity

Stability

Stable under normal storage/handling conditions.
Highly flammable.

Possibility of hazardous reactions

The vapour mixes well with air, explosive mixtures are easily formed. As a result of flow, agitation, etc., electrostatic charges can be generated.
Reacts violently with strong oxidants. This generates fire and explosion hazard.

Conditions to avoid

Contact with incompatible materials.
Open flames. Heat.

Incompatible materials

Strong 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

rat LD50=5580-7530 mg/kg(EU-RAR (2003), EHC 52 (1985))

Inhalation toxicity component(s) data

vapor : rat LC50 =3319-8800 ppm/4hr (EU-RAR(2003), PATTY (5th, 2001)

Irritant properties

Skin corrosion/irritation

Skin corrosion/Irritation component(s) data

rabbit 435 mg ; MILD 500 mg ; MODERATE

Serious eye damage /irritation

Eye damage/irritation component(s) data

rabbit 0.87 mg ; MILD 2 mg/24H ; SEVERE 100 mg/30S rinse ; MILD

No Allergenic and sensitizing effects data available
No Mutagenic effects data available
No Teratogenic effects data available

Carcinogenic effects

IARC-Gr.3 ; Not Classifiable as a Human Carcinogen.
ACGIH-A4(2006) : Not Classifiable as a Human Carcinogen
EPA "Inadequate Information to Assess Carcinogenic Potencial"(2005)

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

Specific target organ toxicity single exposure cat.3(drowsiness/dizziness) component(s) data

Narcosis (EHC 52, 1985; IARC 47, 1989)

Aspiration hazard

Aspiration hazard cat.1 component(s) data

hydrocarbon, kinematic viscosity =0.86 mm2/s (40℃)(NITE)

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Aquatic toxicity component(s) data

Crustacea (Ceriodaphnia dubia) EC50 = 3.78 mg/L/48hr, NOEC = 0.74 mg/L/7days (EPA_Japan, 2006)

Water solubility

526 mg/L (25℃) (HSDB)

Persistence and degradability

BOD_Degradation : 123% (Registered chemicals data check & review, Japan)

Bioaccumulative potential

log Pow=2.73 (PHYSPROP Database, 2008)

13. Disposal Considerations

Disposal methods

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

14. Transport Information

UN No, UN CLASS

UN No :1294

UN CLASS :3

PG :II

Proper shipping name :TOLUENE

ERG GUIDE NO :130

15. Regulatory Information

Sea pollutants control law

Noxious Liquid ; Cat. Y :Toluene

Flammable Liquid :Toluene

GHS classification and labelling

Flam. Liq. 2 : H225 Highly flammable liquid and Vapor

Skin Corr. 2 : H315 Causes skin irritation.

Repr. 2 : H361 Suspected of damaging fertility or the unborn child

STOT SE 3 : H336 May cause drowsiness and dizziness

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

Asp. Tox. 1 : H304 May be fatal if swallowed and enters airways.

US major regulations

TSCA

Toluene

California proposition 65

developmental

Toluene

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/monoeval/grlist.html
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 currentJapan official data, EU official data