

Safety Data Sheet

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

Product identifier:

Product name: Toluene

Product code (SDS NO): 50070jis_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 AND CHEMICAL HAZARDS

Flammable liquids: Category 2

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2B

Reproductive toxicity: Category 1A

Reproductive toxicity – effects on or via lactation: Additional category

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

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – single exposure: Category 3 (Narcosis)

Specific target organ toxicity – repeated exposure: Category 1 (central nervous system, kidney)

Aspiration hazard: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 3

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H225–Highly flammable liquid and vapor

H332–Harmful if inhaled

H315–Causes skin irritation

H320–Causes eye irritation

H360–May damage fertility or the unborn child

H362–May cause harm to breast-fed children

H370–Causes damage to organs after single exposure

H335–May cause respiratory irritation

H336–May cause drowsiness or dizziness

H372-Causes damage to organs through prolonged or repeated exposure

H304-May be fatal if swallowed and enters airways

H401-Toxic to aquatic life

H412-Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

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

Avoid contact during pregnancy/while nursing.

Avoid release to the environment.

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 vapors.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/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 other than water for extinction.

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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 skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it 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: Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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.

Specific Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Toluene

Content (%):99.0 <

Chemical formula:C7H8

Chemicals No, Japan:3-2

CAS No.:108-88-3

MW:92.14

ECNO:203-625-9

Note : The figures shown above are not the specifications of the product.

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice 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.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

If skin irritation 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.

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. Dizziness. Drowsiness. Headache. Nausea. Unconsciousness.

Burning sensation. Abdominal pain.

(Symptoms when skin and/or eye contact)

Dry skin. Redness. Pain.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO2 to extinguish.

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

Runoff to sewer may create fire or explosion hazard.

Vapor explosion hazard indoors, outdoors or in sewers.

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.

Use clean non-sparking tools to collect absorbed material.

All equipment used when handling the product must be grounded.

Preventive measures for secondary accident

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 vapors.

(Protective measures against fire and 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.

Safety Measures

Obtain special instructions before use.

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/eye protection/face protection.

Wear protective gloves, protective clothing or face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Strong oxidizing agents should not be mixed with the chemicals.

Advice on general occupational hygiene

Avoid contact during pregnancy/while nursing.

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

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

Keep cool. Protect from sunlight.

Store locked up.

Container and packaging materials for safe handling data is not available.

8. Exposure controls/personal protection

Control parameters

Control value

Japan control value (2009) ≤ 20 ppm

Adopted value

JSOH(2013) 50ppm; 188mg/m³ (dermal)

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

OSHA-PEL

TWA: 200ppm; STEL: C 300ppm

Acceptable maximum peak: 500ppm; Maximum Duration: 10min

NIOSH-REL

TWA: 100ppm; STEL: 150ppm

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): viton

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear safety glasses with side-shields.

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: Liquid

Color: Colorless

Odor: Characteristic odor

Odor threshold: 2.14 ppm (8 mg/m³)

pH data is not available.

Boiling point or initial boiling point: 111°C

Boiling range data is not available.

Evaporation rate data is not available.

Melting point/Freezing point: -95°C

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

Flammability (gases, liquids and solids): Ignitable

Flash point: (C.C.) 4°C

Auto-ignition temperature: 480°C

Critical temperature data is not available.

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 1.1 vol %

Upper explosion limit: 7.1 vol %

Vapor pressure: 3.8 kPa (25°C)

VOC data is not available.

Relative vapor density (Air=1): 3.1

Relative density of the Vapor/air – mixture at 20°C (Air = 1): 1.01

Density and/or relative density: 0.864~0.868 g/ml (20°C)

Dynamic viscosity: 0.727mPas(40°C)

Kinematic viscosity: 0.86 mm²/s (40°C)

Solubility:

Solubility in water: 526 mg/L (25°C)

Solubility in solvent: Miscible with ethanol, diethyl ether.

n-Octanol/water partition coefficient: log Pow2.73

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.

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. Sparks.

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

rat LD50=5000 mg/kg(MOE risk assessment vol. 1, 2002)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

rabbit LD50=12400 mg/kg(EU-RAR, 2003)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

vapor: rat LC50=3319~8800ppm/4hr (EU-RAR, 2003) et al.

Labor standard law, Japan; Toxic

Toluene

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

rabbit : moderate irritation (EU-RAR, 2003)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

rabbit : slight eyes irritation (EU-RAR, 2003)

Allergenic and sensitizing effects data is not available.

Germ cell mutagenicity

[GHS Cat. Japan, base data]

mice/rat_ germ cell and somatic cell mutagenicity tests in vivo : All negative

(NITE risk assessment No. 87, 2006 et al.)

Reverse-mutation assay in bacteria (Ames test) :Negative(NITE risk assessment No. 87, 2006 et al.)

Mutagen [MOHL_J Notice]

Toluene

Carcinogenicity

IARC-Gr.3 : Not Classifiable as a Human Carcinogen

ACGIH-A4(2006) : Not Classifiable as a Human Carcinogen

EPA-I; "Inadequate Information to Assess Carcinogenic Potential"(2005)

Reproductive toxicity

[GHS Cat. Japan, base data]

cat. 1A; NITE risk assessment No. 87, 2006

cat. add; SIDS(J), Access on Apr. 2012

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

CNS (IARC 47, 1989; IRIS tox. Review, 2005)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

respiratory tract irritation (PATTY 5th, 2001)

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

[GHS Cat. Japan, base data]

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

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

CNS; kidney (Occupational medicine vol.36, 1994)

Aspiration hazard

[cat.1]

[GHS Cat. Japan, base data]

cat. 1; hydrocarbon, kinematic viscosity =0.86 mm²/s (40°C)

12. Ecological Information

Ecotoxicity

Aquatic toxicity

H401-Toxic to aquatic life

H412-Harmful to aquatic life with long lasting effects

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]

Crustacea (Ceriodaphnia dubia) EC50=3.78mg/L/48hr (NITE primary risk assessment, 2006)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]

Crustacea (Ceriodaphnia dubia) NOEC=0.74mg/L/7days (NITE primary risk assessment, 2006)

Water solubility

526 mg/L (25°C) (HSDB)

Persistence and degradability

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

Bioaccumulative potential

log Pow=2.73 (PHYSPROP DB, 2008)

Mobility in soil data is not available.

Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

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.: 1294

Proper Shipping Name : TOLUENE

Class or division : 3

Packing group : II

ERG GUIDE No.: 130

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1294

Proper Shipping Name : TOLUENE

Class or division : 3

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1294

Proper Shipping Name : TOLUENE

Class or division : 3

Hazard labels : Flamm.liquid

Packing group : II

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

15. Regulatory Information

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

Environmental hazards

MARPOL Annex V – Prevention of pollution by garbage discharge

Reproductive toxicity: cat.1, 1A, 1B

Toluene

Specific target organ toxicity – repeated exposure: cat.1

Toluene

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Y

Toluene

Oil

Toluene

Flammable Liquid

Toluene

Basel law, Japan

Toluene

US major regulations

Chemicals listed in TSCA Inventory

Toluene

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

H225-Flam. Liq. 2: H225 Highly flammable liquid and vapor

H332-Acute Tox. 4: H332 Harmful if inhaled

H315-Skin Irrit. 2: H315 Causes skin irritation

H320-Eye Irrit. 2B: H320 Causes eye irritation

H360-Repr. 1A: H360 May damage fertility or the unborn child

H362-Lact.: H362 May cause harm to breast-fed children

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

H335-STOT SE 3: H335 May cause respiratory irritation

H336-STOT SE 3: H336 May cause drowsiness or dizziness

H372-STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

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

H401-Aquatic Acute 2: H401 Toxic to aquatic life

H412-Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects

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>

JIS Z 7253 : 2019

JIS Z 7252 : 2019

2019 Recommendation on TLVs (JSOH)

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

GHS Classification Guidance for Enterprises 2013 Revised Edition (Aug. 2013, METI)

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



Toluene, JUNSEI CHEMICAL CO., LTD., 50070jis_J_E1-2,05/02/2020

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).