

Creation Date 11-Jun-2009

Revision Date 11-Dec-2020

Revision Number 10

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

| | |
|----------------------------------|--|
| Product Description: | Toluene |
| Cat No. : | 176850000; 176850010; 176850025; 176850050; 176850051; 176850250; 176855000 |
| Synonyms | Tol; Methylbenzene |
| CAS-No | 108-88-3 |
| EC-No. | 203-625-9 |
| Molecular Formula | C7 H8 |
| Reach Registration Number | 01-2119471310-51 |

1.2. Relevant identified uses of the substance or mixture and uses advised against

| | |
|---------------------------------------|---|
| Recommended Use | Laboratory chemicals. |
| Sector of use | SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites |
| Product category | PC21 - Laboratory chemicals |
| Process categories | PROC15 - Use as a laboratory reagent |
| Environmental release category | ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) |
| Uses advised against | No Information available |

1.3. Details of the supplier of the safety data sheet

| | |
|----------------|--|
| Company | UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom |
|----------------|--|

EU entity/business name
Acros Organics BVBA
Janssen Pharmaceuticaaan 3a
2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

| | |
|--|--------------------|
| Flammable liquids | Category 2 (H225) |
| Health hazards | |
| Aspiration Toxicity | Category 1 (H304) |
| Skin Corrosion/Irritation | Category 2 (H315) |
| Reproductive Toxicity | Category 2 (H361d) |
| Specific target organ toxicity - (single exposure) | Category 3 (H336) |
| Specific target organ toxicity - (repeated exposure) | Category 2 (H373) |
| Environmental hazards | |
| Chronic aquatic toxicity | Category 3 (H412) |

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

- H225 - Highly flammable liquid and vapor
- H304 - May be fatal if swallowed and enters airways
- H315 - Causes skin irritation
- H336 - May cause drowsiness or dizziness
- H361d - Suspected of damaging the unborn child
- H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
- H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

2.3. Other hazards

- Substance is not considered to be persistent, bioaccumulative and toxic (PBT)
- Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)
- Toxic to terrestrial vertebrates

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

3.1. Substances

| Component | CAS-No | EC-No. | Weight % | CLP Classification - Regulation (EC) No 1272/2008 |
|-----------|----------|-----------|----------|--|
| Toluene | 108-88-3 | 203-625-9 | >95 | Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) STOT SE 3 (H336) Repr. 2 (H361d) STOT RE 2 (H373) Aquatic Chronic 3 (H412) |

| | |
|---------------------------|------------------|
| Reach Registration Number | 01-2119471310-51 |
|---------------------------|------------------|

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

| | |
|---|---|
| General Advice | If symptoms persist, call a physician. |
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward. |
| Inhalation | Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. Risk of serious damage to the lungs (by aspiration). |
| Self-Protection of the First Aider | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. |

4.2. Most important symptoms and effects, both acute and delayed

. Causes central nervous system depression: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

4.3. Indication of any immediate medical attention and special treatment needed

| | |
|---------------------------|---|
| Notes to Physician | Treat symptomatically. Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung edema or pneumonia. Symptoms may be delayed. |
|---------------------------|---|

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

Do not use water jetstream.

5.2. Special hazards arising from the substance or mixture

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK)
(Germany)

Class 3

7.3. Specific end use(s)

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Third edition. Published 2018. **IRE** - 2018 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

| Component | The United Kingdom | European Union | Ireland |
|-----------|---|---|---|
| Toluene | STEL: 100 ppm 15 min STEL: 384 mg/m ³ 15 min TWA: 50 ppm 8 hr TWA: 191 mg/m ³ 8 hr Skin | TWA: 50 ppm (8hr) TWA: 192 mg/m ³ (8hr) STEL: 100 ppm (15min) STEL: 384 mg/m ³ (15min) Skin | TWA: 192 mg/m ³ 8 hr. TWA: 50 ppm 8 hr. STEL: 384 mg/m ³ 15 min STEL: 100 ppm 15 min Skin |

Biological limit values

List source(s):

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Derived No Effect Level (DNEL) See table for values

| Route of exposure | Acute effects (local) | Acute effects (systemic) | Chronic effects (local) | Chronic effects (systemic) |
|-------------------|-----------------------|--------------------------|-------------------------|----------------------------|
| Oral | | | | 8.13 mg/kg bw/day |
| Dermal | | | | 384 mg/kg bw/day |
| Inhalation | 384 mg/m ³ | 384 mg/m ³ | 192 mg/m ³ | 192 mg/m ³ |

Predicted No Effect Concentration (PNEC) See values below.

| | |
|------------------------------------|----------------|
| Fresh water | 0.68 mg/l |
| Fresh water sediment | 16.39 mg/kg dw |
| Marine water | 0.68 mg/l |
| Marine water sediment | 16.39 mg/kg dw |
| Water Intermittent | 0.68 mg/l |
| Microorganisms in sewage treatment | 13.61 mg/l |
| Soil (Agriculture) | 2.89 mg/kg dw |

8.2. Exposure controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

Personal protective equipment

Eye Protection

Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|----------------|-------------------|-----------------|-------------------|---|
| Viton (R) | < 240 minutes | 0.30 mm | Level 4 EN 374 | Permeation rate 68 µg/cm ² /min As tested under EN374-3 Determination of Resistance to Permeation by Chemicals |
| Viton (R) | > 480 minutes | 0.70 mm | | |

Skin and body protection Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State

Liquid

Appearance

Colorless

Odor

aromatic

Odor Threshold

1.74 ppm

Melting Point/Range

-95 °C / -139 °F

Softening Point

No data available

Boiling Point/Range

111 °C / 231.8 °F

@ 760 mmHg

Flammability (liquid)

Highly flammable

On basis of test data

Flammability (solid,gas)

Not applicable

Liquid

Explosion Limits

Lower 1.2 vol%

Upper 7 vol%

Flash Point

4 °C / 39.2 °F

Method - No information available

Autoignition Temperature

535 °C / 995 °F

Decomposition Temperature

No data available

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

| | | |
|---|--------------------------------------|-------------|
| pH | No information available | |
| Viscosity | 0.6 mPa.s @ 20 °C | |
| Water Solubility | practically insoluble 0.5 g/L @ 20°C | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | No information available | |
| Component | log Pow | |
| Toluene | 2.7 | |
| Vapor Pressure | 29 mbar @ 20 °C | |
| Density / Specific Gravity | 0.866 | |
| Bulk Density | Not applicable | Liquid |
| Vapor Density | 3.1 | (Air = 1.0) |
| Particle characteristics | Not applicable (liquid) | |

9.2. Other information

| | |
|----------------------|---|
| Molecular Formula | C7 H8 |
| Molecular Weight | 92.14 |
| Explosive Properties | Not explosive Vapors may form explosive mixtures with air |
| Oxidizing Properties | Not oxidising |
| Evaporation Rate | 2.4 (Butyl acetate = 1.0) |

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

| | |
|--------------------------|--|
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases. Halogenated compounds.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

| | |
|------------|--|
| Oral | Based on available data, the classification criteria are not met |
| Dermal | Based on available data, the classification criteria are not met |
| Inhalation | Based on available data, the classification criteria are not met |

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------|-----------|-------------|-----------------|
|-----------|-----------|-------------|-----------------|

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

| | | | |
|---------|----------------------|------------------------|-----------------------|
| Toluene | > 5000 mg/kg (Rat) | 12000 mg/kg (Rabbit) | 26700 ppm (Rat) 1 h |
|---------|----------------------|------------------------|-----------------------|

- (b) skin corrosion/irritation;** Category 2
Test method OECD 404
Test species rabbit
Observational endpoint Irritating to skin
- (c) serious eye damage/irritation;** Based on available data, the classification criteria are not met
- (d) respiratory or skin sensitization;**
Respiratory Based on available data, the classification criteria are not met
Skin Based on available data, the classification criteria are not met
- (e) germ cell mutagenicity;** Based on available data, the classification criteria are not met
 Not mutagenic in AMES Test
- (f) carcinogenicity;** Based on available data, the classification criteria are not met
 There are no known carcinogenic chemicals in this product
- (g) reproductive toxicity;** Category 2
Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects Developmental effects have occurred in experimental animals.
Teratogenicity Possible risk of harm to the unborn child.
- (h) STOT-single exposure;** Category 3
Results / Target organs Central nervous system (CNS).
- (i) STOT-repeated exposure;** Category 2
Target Organs Liver, Kidney, Central nervous system (CNS), Blood, spleen, Neuropsychological effects, Eyes, Ears.
- (j) aspiration hazard;** Category 1
- Symptoms / effects, both acute and delayed** Causes central nervous system depression. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects The product contains following substances which are hazardous for the environment.
 Contains a substance which is: Toxic to aquatic organisms.

| Component | Freshwater Fish | Water Flea | Freshwater Algae |
|-----------|----------------------|------------------------|-------------------------------|
| Toluene | 50-70 mg/L LC50 96 h | EC50: = 11.5 mg/L, 48h | EC50: = 12.5 mg/L, 72h static |

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

| | | | |
|--|--|--|---|
| | 5-7 mg/L LC50 96 h 15-19 mg/L LC50 96 h 28 mg/L LC50 96 h 12 mg/L LC50 96 h | (Daphnia magna) EC50: 5.46 - 9.83 mg/L, 48h Static (Daphnia magna) | (Pseudokirchneriella subcapitata) EC50: > 433 mg/L, 96h (Pseudokirchneriella subcapitata) |
|--|--|--|---|

| Component | Microtox | M-Factor |
|-----------|-------------------------|----------|
| Toluene | EC50 = 19.7 mg/L 30 min | |

12.2. Persistence and degradability Readily biodegradable
Persistence Persistence is unlikely.

| Component | Degradability |
|-----------------------------|---------------|
| Toluene 108-88-3 (>95) | 86% (20d) |

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|-----------|---------|-------------------------------|
| Toluene | 2.7 | 90 |

12.4. Mobility in soil The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces Spillage unlikely to penetrate soil The product is insoluble and floats on water Is not likely mobile in the environment due its low water solubility.

12.5. Results of PBT and vPvB assessment Substance is not considered to be persistent, bioaccumulative and toxic (PBT). Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Endocrine disrupting properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects
Persistent Organic Pollutant
Ozone Depletion Potential

This product does not contain any known or suspected substance
 This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not let this chemical enter the environment. Do not empty into drains.

SECTION 14: TRANSPORT INFORMATION

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

IMDG/IMO

14.1. UN number UN1294
14.2. UN proper shipping name TOLUENE
14.3. Transport hazard class(es) 3
14.4. Packing group II

ADR

14.1. UN number UN1294
14.2. UN proper shipping name TOLUENE
14.3. Transport hazard class(es) 3
14.4. Packing group II

IATA

14.1. UN number UN1294
14.2. UN proper shipping name TOLUENE
14.3. Transport hazard class(es) 3
14.4. Packing group II

14.5. Environmental hazards No hazards identified
14.6. Special precautions for user No special precautions required
14.7. Maritime transport in bulk according to IMO instruments Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

X = listed, Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), China (IECSC), Japan (ENCS), Australia (AICS), Korea (ECL).

| Component | EINECS | ELINCS | NLP | TSCA | DSL | NDSL | PICCS | ENCS | IECSC | AICS | KECL |
|-----------|-----------|--------|-----|------|-----|------|-------|------|-------|------|--------------|
| Toluene | 203-625-9 | - | | X | X | - | X | X | X | X | KE-3393 6 |

| Component | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|-----------|---|---|---|
| Toluene | | Use restricted. See item 48. (see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006R1907:EN:NOT for restriction details) | |

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals
 Not applicable

National Regulations

WGK Classification See table for values

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

| Component | Germany - Water Classification (VwVwS) | Germany - TA-Luft Class |
|-----------|--|-------------------------|
| Toluene | WGK2 | |

| Component | France - INRS (Tables of occupational diseases) |
|-----------|---|
| Toluene | Tableaux des maladies professionnelles (TMP) - RG 4bis, RG 84 |

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H304 - May be fatal if swallowed and enters airways

H315 - Causes skin irritation

H336 - May cause drowsiness or dizziness

H361d - Suspected of damaging the unborn child

H373 - May cause damage to organs through prolonged or repeated exposure

H412 - Harmful to aquatic life with long lasting effects

H225 - Highly flammable liquid and vapor

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC (volatile organic compound)

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

SAFETY DATA SHEET

Toluene

Revision Date 11-Dec-2020

Chemical incident response training.

Creation Date 11-Jun-2009
Revision Date 11-Dec-2020
Revision Summary Update to CLP Format.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No
1907/2006**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet