# SAFETY DATA SHEET

**Creation Date** 11-Jun-2009 **Revision Date** 03-Jan-2021 **Revision Number** 6

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

### 1.1. Product identifier

| | |
|---|---|
| **Product Description:** | **Toluene** |
| **Cat No. :** | **SP/2650/27SS** |
| **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**

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

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

**E-mail address** begel.sdsdesk@thermofisher.com

### 1.4. Emergency telephone number

Tel: 01509 231166
Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

**CLP Classification - Regulation (EC) No 1272/2008**

**Physical hazards**

| | |
|---|---|
| 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

### 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)<br>Asp. Tox. 1 (H304)<br>Skin Irrit. 2 (H315)<br>STOT SE 3 (H336)<br>Repr. 2 (H361d)<br>STOT RE 2 (H373)<br>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**

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 ($CO_2$).

### 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)** Storage Class/LGK 3

### 7.3. Specific end use(s)

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 -** 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority.

| Component | European Union | The United Kingdom | France | Belgium | Spain |
|---|---|---|---|---|---|
| Toluene | TWA: 50 ppm (8hr)<br>TWA: 192 mg/m³ (8hr)<br>STEL: 100 ppm (15min)<br>STEL: 384 mg/m³ (15min)<br>Skin | STEL: 100 ppm 15 min<br>STEL: 384 mg/m³ 15 min<br>TWA: 50 ppm 8 hr<br>TWA: 191 mg/m³ 8 hr<br>Skin | TWA / VME: 20 ppm (8 heures). restrictive limit<br>TWA / VME: 76.8 mg/m³ (8 heures). restrictive limit<br>TWA / VME: 1000 mg/m³ (8 heures).<br>STEL / VLCT: 100 ppm. restrictive limit<br>STEL / VLCT: 384 mg/m³. restrictive limit<br>STEL / VLCT: 1500 mg/m³.<br>Peau | TWA: 20 ppm 8 uren<br>TWA: 77 mg/m³ 8 uren<br>STEL: 100 ppm 15 minuten<br>STEL: 384 mg/m³ 15 minuten<br>Huid | STEL / VLA-EC: 100 ppm (15 minutos).<br>STEL / VLA-EC: 384 mg/m³ (15 minutos).<br>TWA / VLA-ED: 50 ppm (8 horas)<br>TWA / VLA-ED: 192 mg/m³ (8 horas)<br>Piel |

| Component | Italy | Germany | Portugal | The Netherlands | Finland |
|---|---|---|---|---|---|
| Toluene | TWA: 50 ppm 8 ore. Media Ponderata nel Tempo<br>TWA: 192 mg/m³ 8 ore. Media Ponderata nel Tempo<br>Pelle | TWA: 50 ppm (8 Stunden). AGW - exposure factor 4<br>TWA: 190 mg/m³ (8 Stunden). AGW - exposure factor 4<br>TWA: 50 ppm (8 Stunden). MAK<br>TWA: 190 mg/m³ (8 Stunden). MAK<br>Höhepunkt: 100 ppm<br>Höhepunkt: 380 mg/m³<br>Haut | STEL: 100 ppm 15 minutos<br>STEL: 384 mg/m³ 15 minutos<br>TWA: 50 ppm 8 horas<br>TWA: 192 mg/m³ 8 horas<br>Pele | STEL: 384 mg/m³ 15 minuten<br>TWA: 150 mg/m³ 8 uren | TWA: 25 ppm 8 tunteina<br>TWA: 81 mg/m³ 8 tunteina<br>STEL: 100 ppm 15 minuutteina<br>STEL: 380 mg/m³ 15 minuutteina<br>Iho |

| Component | Austria | Denmark | Switzerland | Poland | Norway |
|---|---|---|---|---|---|
| Toluene | Haut<br>MAK-KZW: 100 ppm 15 Minuten<br>MAK-KZW: 380 mg/m³ 15 Minuten<br>MAK-TMW: 50 ppm 8 Stunden<br>MAK-TMW: 190 mg/m³ 8 Stunden | TWA: 25 ppm 8 timer<br>TWA: 94 mg/m³ 8 timer<br>Hud | Haut/Peau<br>STEL: 200 ppm 15 Minuten<br>STEL: 760 mg/m³ 15 Minuten<br>TWA: 50 ppm 8 Stunden<br>TWA: 190 mg/m³ 8 Stunden | STEL: 200 mg/m³ 15 minutach<br>TWA: 100 mg/m³ 8 godzinach | TWA: 25 ppm 8 timer<br>TWA: 94 mg/m³ 8 timer<br>STEL: 37.5 ppm 15 minutter. value calculated<br>STEL: 141 mg/m³ 15 minutter. value calculated<br>Hud |

| Component | Bulgaria | Croatia | Ireland | Cyprus | Czech Republic |
|---|---|---|---|---|---|
| Toluene | TWA: 50 ppm<br>TWA: 192.0 mg/m³<br>STEL : 100 ppm<br>STEL : 384.0 mg/m³<br>Skin notation | kože<br>TWA-GVI: 50 ppm 8 satima.<br>TWA-GVI: 192 mg/m³ 8 satima.<br>STEL-KGVI: 100 ppm 15 minutama.<br>STEL-KGVI: 384 mg/m³ 15 minutama. | TWA: 192 mg/m³ 8 hr.<br>TWA: 50 ppm 8 hr.<br>STEL: 384 mg/m³ 15 min<br>STEL: 100 ppm 15 min<br>Skin | Skin-potential for cutaneous absorption<br>STEL: 100 ppm<br>STEL: 384 mg/m³<br>TWA: 50 ppm<br>TWA: 192 mg/m³ | TWA: 200 mg/m³ 8 hodinách.<br>Potential for cutaneous absorption<br>Ceiling: 500 mg/m³ |

| Component | Estonia | Gibraltar | Greece | Hungary | Iceland |
|---|---|---|---|---|---|
| Toluene | Nahk | Skin notation | skin - potential for | STEL: 380 mg/m³ 15 | STEL: 50 ppm |

| | | | | | |
|---|---|---|---|---|---|
| | TWA: 50 ppm 8 tundides.<br>TWA: 192 mg/m³ 8 tundides.<br>STEL: 100 ppm 15 minutites.<br>STEL: 384 mg/m³ 15 minutites. | TWA: 50 ppm 8 hr<br>TWA: 192 mg/m³ 8 hr<br>STEL: 100 ppm 15 min<br>STEL: 384 mg/m³ 15 min | cutaneous absorption<br>STEL: 100 ppm<br>STEL: 384 mg/m³<br>TWA: 50 ppm<br>TWA: 192 mg/m³ | percekben. CK<br>TWA: 190 mg/m³ 8 órában. AK lehetséges borön keresztüli felszívódás | STEL: 188 mg/m³<br>TWA: 25 ppm 8 klukkustundum.<br>TWA: 94 mg/m³ 8 klukkustundum.<br>Skin notation |

| Component | Latvia | Lithuania | Luxembourg | Malta | Romania |
|---|---|---|---|---|---|
| Toluene | skin - potential for cutaneous exposure<br>STEL: 40 ppm<br>STEL: 150 mg/m³<br>TWA: 14 ppm<br>TWA: 50 mg/m³ | TWA: 50 ppm IPRD<br>TWA: 192 mg/m³ IPRD<br>Oda<br>STEL: 100 ppm<br>STEL: 384 mg/m³ | Possibility of significant uptake through the skin<br>TWA: 50 ppm 8 Stunden<br>TWA: 192 mg/m³ 8 Stunden<br>STEL: 100 ppm 15 Minuten<br>STEL: 384 mg/m³ 15 Minuten | possibility of significant uptake through the skin<br>TWA: 50 ppm<br>TWA: 192 mg/m³<br>STEL: 100 ppm 15 minuti<br>STEL: 384 mg/m³ 15 minuti | Skin notation<br>TWA: 50 ppm 8 ore<br>TWA: 192 mg/m³ 8 ore<br>STEL: 100 ppm 15 minute<br>STEL: 384 mg/m³ 15 minute |

| Component | Russia | Slovak Republic | Slovenia | Sweden | Turkey |
|---|---|---|---|---|---|
| Toluene | TWA: 50 mg/m³ 1284<br>STEL: 150 mg/m³ 1284 | Ceiling: 384 mg/m³<br>Potential for cutaneous absorption<br>TWA: 50 ppm<br>TWA: 192 mg/m³ | TWA: 50 ppm 8 urah<br>TWA: 192 mg/m³ 8 urah<br>Kožа<br>STEL: 100 ppm 15 minutah<br>STEL: 384 mg/m³ 15 minutah | Binding STEL: 100 ppm 15 minuter<br>Binding STEL: 384 mg/m³ 15 minuter<br>TLV: 50 ppm 8 timmar. NGV<br>TLV: 192 mg/m³ 8 timmar. NGV<br>Hud | Deri<br>TWA: 50 ppm 8 saat<br>TWA: 192 mg/m³ 8 saat<br>STEL: 100 ppm 15 dakika<br>STEL: 384 mg/m³ 15 dakika |

**Biological limit values**
List source(s):

| Component | European Union | United Kingdom | France | Spain | Germany |
|---|---|---|---|---|---|
| Toluene | | | Toluene: 1 mg/L venous blood end of shift<br>Hippuric acid: 2500 mg/g creatinine urine end of shift | o-Cresol: 0.6 mg/L urine end of shift<br>Toluene: 0.05 mg/L blood start of last shift of workweek<br>Toluene: 0.08 mg/L urine end of shift | Toluene: 600 µg/L whole blood (immediately after exposure )<br>Toluene: 75 µg/L urine (end of shift )<br>o-Cresol (after hydrolysis): 1.5 mg/L urine (for long-term exposures: at the end of the shift after several shifts )<br>o-Cresol (after hydrolysis): 1.5 mg/L urine (end of shift ) |

| Component | Italy | Finland | Denmark | Bulgaria | Romania |
|---|---|---|---|---|---|
| Toluene | | Toluene: 500 nmol/L blood in the morning after a working day. | | Hippuric acid: 1.6 mmol/mmol Creatinine urine at the end of exposure or end of work shift | Hippuric acid: 2 g/L urine end of shift<br>o-Cresol: 3 mg/L urine end of shift |

| Component | Gibraltar | Latvia | Slovak Republic | Luxembourg | Turkey |
|---|---|---|---|---|---|
| Toluene | | Hippuric acid: 1.6 g/g Creatinine urine end of shift<br>Toluene: 0.05 mg/L blood end of shift | Toluene: 600 µg/L blood end of exposure or work shift<br>o-Cresol: 1.5 mg/L urine after all work shifts for long-term exposure<br>o-Cresol: 1.5 mg/L urine end of exposure or work | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | shift<br>Hippuric acid: 1600 mg/g creatinine end of exposure or work shift | | |

**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/m³ | 384 mg/m³ | 192 mg/m³ | 192 mg/m³ |

**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

**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<br>EN 374 | Permeation rate 68 µg/cm2/min<br>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. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, 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. gloves with care avoiding skin contamination.

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use

| | |
|---|---|
| | appropriate certified respirators.<br>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<br>**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.<br>**Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141<br>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%<br>**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 | |
| **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)** | | |
| **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 ($CO_2$).

## 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 |
|---|---|---|---|
| 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<br>5-7 mg/L LC50 96 h<br>15-19 mg/L LC50 96 h<br>28 mg/L LC50 96 h<br>12 mg/L LC50 96 h | EC50: = 11.5 mg/L, 48h (Daphnia magna)<br>EC50: 5.46 - 9.83 mg/L, 48h Static (Daphnia magna) | EC50: = 12.5 mg/L, 72h static (Pseudokirchneriella subcapitata)<br>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<br>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** | This product does not contain any known or suspected substance |
| **Ozone Depletion Potential** | 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

**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-33936 |

| 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

| 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 |

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
**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)

**Key literature references and sources for data**
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**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.
Chemical incident response training.

| | |
|---|---|
| **Creation Date** | 11-Jun-2009 |
| **Revision Date** | 03-Jan-2021 |
| **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