# Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

**1.1. Product identifier**

Code: **411 00 20490-6366**

Product name **PETROL INJECTOR TREATMENT**

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

Intended use **Injector cleaning treatment**

**1.3. Details of the supplier of the safety data sheet**

Name **Meccanocar Italia S.r.l.**

Full address **Via San Francesco, 22**

District and Country **56033 Capannoli (PI)**
**Italy**

**Tel. +39 0587 609433**

**Fax +39 0587 607145**

e-mail address of the competent person

responsible for the Safety Data Sheet **moreno.meini@meccanocar.it**

**1.4. Emergency telephone number**

For urgent inquiries refer to **National Poisons Information Service: +44 121 507 4123**

## SECTION 2. Hazards identification

**2.1. Classification of the substance or mixture**

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830.
Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

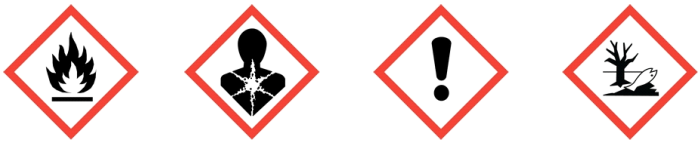
Hazard classification and indication:

| | | |
|---|---|---|
| Flammable liquid, category 2 | H225 | Highly flammable liquid and vapour. |
| Reproductive toxicity, category 2 | H361d | Suspected of damaging the unborn child. |
| Specific target organ toxicity - repeated exposure, category 2 | H373 | May cause damage to organs through prolonged or repeated exposure. |
| Eye irritation, category 2 | H319 | Causes serious eye irritation. |
| Skin irritation, category 2 | H315 | Causes skin irritation. |
| Specific target organ toxicity - single exposure, category 3 | H336 | May cause drowsiness or dizziness. |
| Hazardous to the aquatic environment, chronic toxicity, category 2 | H411 | Toxic to aquatic life with long lasting effects. |

**2.2. Label elements**

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: Danger

Hazard statements:

| | |
|---|---|
| **H225** | Highly flammable liquid and vapour. |
| **H361d** | Suspected of damaging the unborn child. |
| **H373** | May cause damage to organs through prolonged or repeated exposure. |
| **H319** | Causes serious eye irritation. |
| **H315** | Causes skin irritation. |
| **H336** | May cause drowsiness or dizziness. |
| **H411** | Toxic to aquatic life with long lasting effects. |

Precautionary statements:

| | |
|---|---|
| **P210** | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| **P201** | Obtain special instructions before use. |
| **P280** | Wear protective gloves/ protective clothing / eye protection / face protection. |
| **P202** | Do not handle until all safety precautions have been read and understood. |
| **P233** | Keep container tightly closed. |
| **P370+P378** | In case of fire: use CO2 fire extinguisher to extinguish. |

**2.3. Other hazards**

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

## SECTION 3. Composition/information on ingredients

**3.2. Mixtures**

Contains:

| **Identification** | **x = Conc. %** | **Classification 1272/2008 (CLP)** |
|---|---|---|
| **HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS** | | |
| CAS 92045-64-2 | 40 ≤ x < 42,5 | Flam. Liq. 2 H225, Carc. 1A H350, Muta. 1A H340, Repr. 2 H361, Asp. Tox. 1 H304, Skin Irrit. 2 H315, STOT SE 3 H336, Aquatic Chronic 2 H411 |
| EC 295-446-8 | | |
| INDEX | | |
| Reg. no. 01-2119486793-22-XXXX | | |
| **TOLUENE** | | |
| CAS 108-88-3 | 20 ≤ x < 21,5 | Flam. Liq. 2 H225, Repr. 2 H361d, Asp. Tox. 1 H304, STOT RE 2 H373, Skin Irrit. 2 H315, STOT SE 3 H336, Aquatic Chronic 3 H412 |
| EC 203-625-9 | | |

| | | |
|---|---|---|
| INDEX 601-021-00-3 | | |
| Reg. no. 01-2119471310-51-XXXX | | |
| **ETHANOL** | | |
| CAS 64-17-5 | 12 ≤ x < 13,5 | Flam. Liq. 2 H225, Eye Irrit. 2 H319 |
| EC 200-578-6 | | |
| INDEX 603-002-00-5 | | |
| Reg. no. 01-2119457610-43-XXXX | | |
| **2-BUTOXYETHANOL** | | |
| CAS 111-76-2 | 7 ≤ x < 8 | Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Irrit. 2 H315 |
| EC 203-905-0 | | |
| INDEX 603-014-00-0 | | |
| Reg. no. 01-2119475108-36-XXXX | | |
| **ACETONE** | | |
| CAS 67-64-1 | 7 ≤ x < 8 | Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066 |
| EC 200-662-2 | | |
| INDEX 606-001-00-8 | | |
| Reg. no. 01-2119471330-49-XXXX | | |
| **XYLENE (MIXTURE OF ISOMERS)** | | |
| CAS 1330-20-7 | 7 ≤ x < 8 | Flam. Liq. 3 H226, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Irrit. 2 H315, Classification note according to Annex VI to the CLP Regulation: C |
| EC 215-535-7 | | |
| INDEX 601-022-00-9 | | |
| Reg. no. 01-2119488216-32-XXXX | | |
| **ETHYLBENZENE** | | |
| CAS 100-41-4 | 3 ≤ x < 3,5 | Flam. Liq. 2 H225, Acute Tox. 4 H332, Asp. Tox. 1 H304, STOT RE 2 H373, Aquatic Chronic 3 H412 |
| EC 202-849-4 | | |
| INDEX 601-023-00-4 | | |
| Reg. no. 01-2119489370-35-XXXX | | |
| **BENZYL ALCOHOL** | | |
| CAS 100-51-6 | 3 ≤ x < 3,5 | Acute Tox. 4 H302, Acute Tox. 4 H332 |
| EC 202-859-9 | | |
| INDEX 603-057-00-5 | | |
| Reg. no. 01-2119492630-38-XXXX | | |
| **1,2,4-TRIMETHYLBENZENE** | | |
| CAS 95-63-6 | 0 ≤ x < 0,05 | Flam. Liq. 3 H226, Acute Tox. 4 H332, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Aquatic Chronic 2 H411 |
| EC 202-436-9 | | |
| INDEX 601-043-00-3 | | |
| Reg. no. 01-2119472135-42-XXXX | | |

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## SECTION 4. First aid measures

### 4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists,

seek medical advice.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

## SECTION 5. Firefighting measures

**5.1. Extinguishing media**

SUITABLE EXTINGUISHING EQUIPMENT
Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.
UNSUITABLE EXTINGUISHING EQUIPMENT
Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

**5.2. Special hazards arising from the substance or mixture**

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

**5.3. Advice for firefighters**

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Use explosion-proof equipment. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

**6.2. Environmental precautions**

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

**6.3. Methods and material for containment and cleaning up**

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

**6.4. Reference to other sections**

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

**7.1. Precautions for safe handling**

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Vapours may catch fire and an explosion may occur; vapour accumulation is therefore to be avoided by leaving windows and doors open and ensuring good cross ventilation. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

**7.2. Conditions for safe storage, including any incompatibilities**

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

**7.3. Specific end use(s)**

Information not available

## SECTION 8. Exposure controls/personal protection

**8.1. Control parameters**

Regulatory References:

| | | |
|---|---|---|
| ESP | España | LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST) |
| FRA | France | Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS |
| GBR | United Kingdom | EH40/2005 Workplace exposure limits (Third edition,published 2018) |
| ITA | Italia | DIRETTIVA (UE) 2017/164 DELLA COMMISSIONE del 31 gennaio 2017 |
| NOR | Norge | Fastsatt av Arbeids- og sosialdepartementet 21. august 2018 med hjemmel i lov 17. juni 2005 nr. 62 om arbeidsmiljø, arbeidstid, stillingsvern mv. (arbeidsmiljøloven) § 1-3, § 1-4 og § 4-5 |
| PRT | Portugal | Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da República, 1.ª série - N.º 111 - 11 de junho de 2018 |
| EU | OEL EU | Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC. |
| | TLV-ACGIH | ACGIH 2019 |

**HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS**
**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Inhalation | 640 mg/m3 | 1200 mg/m3 | 180 mg/m3 | | 1100 mg/m3 | 1300 mg/m3 | 840 mg/m3 | |

**TOLUENE**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| VLA | ESP | 192 | 50 | 384 | 100 | SKIN |
| VLEP | FRA | 76,8 | 20 | 384 | 100 | SKIN |
| WEL | GBR | 191 | 50 | 384 | 100 | SKIN |
| VLEP | ITA | 192 | 50 | | | SKIN |
| TLV | NOR | 94 | 25 | | | SKIN |
| VLE | PRT | 192 | 50 | 384 | 100 | SKIN |
| OEL | EU | 192 | 50 | 384 | 100 | SKIN |
| TLV-ACGIH | | 75,4 | 20 | | | |

| Predicted no-effect concentration - PNEC | | |
|---|---|---|
| Normal value in fresh water | 0,68 | mg/l |
| Normal value in marine water | 0,68 | mg/l |
| Normal value for fresh water sediment | 16,39 | mg/kg |
| Normal value for marine water sediment | 16,39 | mg/kg |
| Normal value of STP microorganisms | 13,61 | mg/l |
| Normal value for the terrestrial compartment | 2,89 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 8,13 mg/kg bw/d | | | | |
| Inhalation | 226 mg/m3 | 226 mg/m3 | 56,5 mg/m3 | 56,5 mg/m3 | 384 mg/m3 | 384 mg/m3 | 192 mg/m3 | 192 mg/m3 |
| Skin | | | | 226 mg/kg bw/d | | | | 384 mg/kg bw/d |

**ETHANOL**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| VLA | ESP | | | 1910 | 1000 | |
| VLEP | FRA | 1900 | 1000 | 9500 | 5000 | |
| WEL | GBR | 1920 | 1000 | | | |
| TLV | NOR | 950 | 500 | | | |
| TLV-ACGIH | | | | 1884 | 1000 | |

| Predicted no-effect concentration - PNEC | | |
|---|---|---|
| Normal value in fresh water | 0,96 | mg/l |
| Normal value in marine water | 0,79 | mg/l |
| Normal value for fresh water sediment | 3,6 | mg/kg |
| Normal value for marine water sediment | 2,9 | mg/kg |
| Normal value of STP microorganisms | 580 | mg/l |
| Normal value for the food chain (secondary poisoning) | 0,38 | mg/kg |
| Normal value for the terrestrial compartment | 0,63 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 87 mg/kg bw/d | | | | |
| Inhalation | | | | 114 mg/m3 | | | | 950 mg/m3 |
| Skin | | | | 206 mg/kg bw/d | | | | 343 mg/kg bw/d |

**XYLENE (MIXTURE OF ISOMERS)**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| VLA | ESP | 221 | 50 | 442 | 100 | SKIN |
| VLEP | FRA | 221 | 50 | 442 | 100 | SKIN |
| WEL | GBR | 220 | 50 | 441 | 100 | SKIN |
| VLEP | ITA | 221 | 50 | 442 | 100 | SKIN |
| TLV | NOR | 108 | 25 | | | SKIN |
| VLE | PRT | 221 | 50 | 442 | 100 | SKIN |
| OEL | EU | 221 | 50 | 442 | 100 | SKIN |
| TLV-ACGIH | | 434 | 100 | 651 | 150 | |

| Predicted no-effect concentration - PNEC | | |
|---|---|---|
| Normal value in fresh water | 0,327 | mg/l |
| Normal value in marine water | 0,327 | mg/l |
| Normal value for fresh water sediment | 12,46 | mg/kg |
| Normal value for marine water sediment | 12,46 | mg/kg |
| Normal value of STP microorganisms | 6,58 | mg/l |
| Normal value for the terrestrial compartment | 2,31 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 12,5 mg/kg bw/d | | | | |
| Inhalation | 260 mg/m3 | 260 mg/m3 | 65,3 mg/m3 | 65,3 mg/m3 | 442 mg/m3 | 442 mg/m3 | 221 mg/m3 | 221 mg/m3 |
| Skin | | | | 125 mg/kg bw/d | | | | 212 mg/kg bw/d |

**ACETONE**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| VLEP | FRA | 1210 | 500 | 2420 | 1000 | |
| WEL | GBR | 1210 | 500 | 3620 | 1500 | |
| VLEP | ITA | 1210 | 500 | | | |
| TLV | NOR | 295 | 125 | | | |
| VLE | PRT | 1210 | 500 | | | |
| OEL | EU | 1210 | 500 | | | |
| TLV-ACGIH | | | 250 | | 500 | |

| Predicted no-effect concentration - PNEC | | |
|---|---|---|
| Normal value in fresh water | 10,6 | mg/l |
| Normal value in marine water | 1,06 | mg/l |
| Normal value for fresh water sediment | 30,4 | mg/kg |
| Normal value for marine water sediment | 3,04 | mg/kg |
| Normal value of STP microorganisms | 100 | mg/l |
| Normal value for the terrestrial compartment | 29,5 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 62 mg/kg bw/d | | | | |
| Inhalation | | | | 200 mg/m3 | | | 2420 mg/m3 | 1210 mg/m3 |
| Skin | | | | 62 mg/kg bw/d | | | | 186 mg/kg bw/d |

**2-BUTOXYETHANOL**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| VLA | ESP | 98 | 20 | 245 | 50 | SKIN |
| VLEP | FRA | 49 | 10 | 246 | 50 | SKIN |
| WEL | GBR | 123 | 25 | 246 | 50 | SKIN |
| VLEP | ITA | 98 | 20 | 246 | 50 | SKIN |
| TLV | NOR | 50 | 10 | | | SKIN |
| VLE | PRT | 98 | 20 | 246 | 50 | SKIN |
| OEL | EU | 98 | 20 | 246 | 50 | SKIN |
| TLV-ACGIH | | 97 | 20 | | | |

| Predicted no-effect concentration - PNEC | | |
|---|---|---|
| Normal value in fresh water | 8,8 | mg/l |
| Normal value in marine water | 0,88 | mg/l |
| Normal value for fresh water sediment | 34,6 | mg/kg |
| Normal value for marine water sediment | 3,46 | mg/kg |
| Normal value of STP microorganisms | 463 | mg/l |
| Normal value for the food chain (secondary poisoning) | 0,02 | mg/kg |
| Normal value for the terrestrial compartment | 2,33 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | 26,7 mg/kg bw/d | | 6,3 mg/kg bw/d | | | | |
| Inhalation | 147 mg/m3 | 426 mg/m3 | | 59 mg/m3 | 246 mg/m3 | | | 98 mg/m3 |
| Skin | | 89 mg/kg/d | | 75 mg/kg bw/d | | 89 mg/kg bw/d | | 125 mg/kg bw/d |

**BENZYL ALCOHOL**

| Predicted no-effect concentration - PNEC |
|---|

| | | |
|---|---|---|
| Normal value in fresh water | 1 | mg/l |
| Normal value in marine water | 0,1 | mg/l |
| Normal value for fresh water sediment | 5,27 | mg/kg |
| Normal value for marine water sediment | 0,527 | mg/kg |
| Normal value of STP microorganisms | 39 | mg/l |
| Normal value for the terrestrial compartment | 0,456 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | 20 mg/kg bw/d | | 4 mg/kg bw/d | | | | |
| Inhalation | | 27 mg/m3 | | 5,4 mg/m3 | | 110 mg/m3 | | 22 mg/m3 |
| Skin | | 20 mg/kg bw/d | | 4 mg/kg bw/d | | 40 mg/kg bw/d | | 8 mg/kg bw/d |

**ETHYLBENZENE**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| VLA | ESP | 441 | 100 | 884 | 200 | SKIN |
| VLEP | FRA | 88,4 | 20 | 442 | 100 | SKIN |
| WEL | GBR | 441 | 100 | 552 | 125 | SKIN |
| VLEP | ITA | 442 | 100 | 884 | 200 | SKIN |
| TLV | NOR | 20 | 5 | | | SKIN |
| VLE | PRT | 442 | 100 | 884 | 200 | SKIN |
| OEL | EU | 442 | 100 | 884 | 200 | SKIN |
| TLV-ACGIH | | 87 | 20 | | | |

Predicted no-effect concentration - PNEC

| | | |
|---|---|---|
| Normal value in fresh water | 0,1 | mg/l |
| Normal value in marine water | 0,01 | mg/l |
| Normal value for fresh water sediment | 13,7 | mg/kg |
| Normal value for marine water sediment | 1,37 | mg/kg |
| Normal value of STP microorganisms | 9,6 | mg/l |
| Normal value for the food chain (secondary poisoning) | 0,02 | mg/kg |
| Normal value for the terrestrial compartment | 2,68 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 1,6 mg/kg bw/d | | | | |
| Inhalation | | | | 15 mg/m3 | | | 293 mg/m3 | 77 mg/m3 |
| Skin | | | | | | | | 180 mg/kg bw/d |

**1,2,4-TRIMETHYLBENZENE**

**Threshold Limit Value**

| Type | Country | TWA/8h | STEL/15min | Remarks / Observations |
|---|---|---|---|---|

| | | mg/m3 | ppm | mg/m3 | ppm |
|---|---|---|---|---|---|
| VLA | ESP | 100 | 20 | | |
| VLEP | FRA | 100 | 20 | 250 | 50 |
| VLEP | ITA | 100 | 20 | | |
| TLV | NOR | 100 | 20 | | |
| VLE | PRT | 100 | 20 | | |
| OEL | EU | 100 | 20 | | |
| TLV-ACGIH | | 123 | 25 | | |

| Predicted no-effect concentration - PNEC | | |
|---|---|---|
| Normal value in fresh water | 0,12 | mg/l |
| Normal value in marine water | 0,12 | mg/l |
| Normal value for fresh water sediment | 13,56 | mg/kg |
| Normal value for marine water sediment | 13,56 | mg/kg |
| Normal value of STP microorganisms | 2,41 | mg/l |
| Normal value for the terrestrial compartment | 2,34 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 15 mg/kg bw/d | | | | |
| Inhalation | 29,4 mg/m3 | 29,4 mg/m3 | 29,4 mg/m3 | 29,4 mg/m3 | 100 mg/m3 | 100 mg/m3 | 100 mg/m3 | 100 mg/m3 |
| Skin | | | | 9512 mg/kg bw/d | | | | 16171 mg/kg bw/d |

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

**8.2. Exposure controls**

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

The product must be used inside a closed circuit, in a well-ventilated environment and with strong localised aspiration systems in place.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

HAND PROTECTION
Protect hands with category III work gloves (see standard EN 374).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

EYE PROTECTION
Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a type AX filter, whose limit of use will be defined by the manufacturer (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

ACETONE

Protective gloves according to EN 374.
Glove material: Butyl rubber (butyl rubber) - Layer thickness> = 0.5 mm.
Breakthrough time:> 480 min.
Observe the glove manufacturer's instructions regarding penetrability and breakthrough time.

BENZYL ALCOHOL

Waterproof chemical resistant gloves that conform to an approved standard must always be worn when handling chemicals products if a risk assessment indicates that this is necessary. After contamination with the product, change gloves immediately dispose of them according to the relevant national and local regulations Recommended: (<1 hour) Butyl rubber - IIR, Fluorinated rubber - FKM, Polyvinyl chloride - PVC.

ETHYLBENZENE

- Use chemical resistant gloves suitable for the conditions of use.
- The selected protective gloves must meet the European standard EN 374.
- Fluoroelastomer glove material; material thickness 0.4 mm; breakthrough time ≥ 480 min. Gloves must be replaced after 8 hours of wear (GESTIS recommendation).
- Gloves must be discarded and replaced if there are indications of degradation or chemicals breakthrough.

## SECTION 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Appearance | liquid |
| Colour | colourless |

| | |
|---|---|
| Odour | characteristic |
| Odour threshold | Not available |
| pH | Not available |
| Melting point / freezing point | Not available |
| Initial boiling point | < 100 °C |
| Boiling range | Not available |
| Flash point | -18 °C |
| Evaporation rate | Not available |
| Flammability (solid, gas) | Not available |
| Lower inflammability limit | Not available |
| Upper inflammability limit | Not available |
| Lower explosive limit | Not available |
| Upper explosive limit | Not available |
| Vapour pressure | Not available |
| Vapour density | Not available |
| Relative density | 0,788 |
| Solubility | immiscible with water |
| Partition coefficient: n-octanol/water | Not available |
| Auto-ignition temperature | Not available |
| Decomposition temperature | Not available |
| Viscosity | Not available |
| Explosive properties | Not available |
| Oxidising properties | Not available |

**9.2. Other information**

Information not available

## SECTION 10. Stability and reactivity

**10.1. Reactivity**

There are no particular risks of reaction with other substances in normal conditions of use.

TOLUENE

Avoid exposure to: light.

ACETONE

Decomposes under the effect of heat.

Acetone reacts in the presence of bases. The vapor forms potentially explosive mixtures with the air. Heavier than air, they proceed at floor level and can flash at a great distance when turned on. It can electrostatically charge.

2-BUTOXYETHANOL

Decomposes under the effect of heat.

BENZYL ALCOHOL

Decomposes at temperatures above 870°C/1598°F.Possibility of explosion.

**10.2. Chemical stability**

The product is stable in normal conditions of use and storage.

**10.3. Possibility of hazardous reactions**

The vapours may also form explosive mixtures with the air.

TOLUENE

Risk of explosion on contact with: fuming sulphuric acid,nitric acid,silver perchlorate,nitrogen dioxide,non-metal halogenates,acetic acid,organic nitrocompounds.May form explosive mixtures with: air.May react dangerously with: strong oxidising agents,strong acids,sulphur.

ETHANOL

Risk of explosion on contact with: alkaline metals,alkaline oxides,calcium hypochlorite,sulphur monofluoride,acetic anhydride,acids,concentrated hydrogen peroxide,perchlorates,perchloric acid,perchloronitrile,mercury nitrate,nitric acid,silver,silver nitrate,ammonia,silver oxide,ammonia,strong oxidising agents,nitrogen dioxide.May react dangerously with: bromoacetylene,chlorine acetylene,bromine trifluoride,chromium trioxide,chromyl chloride,fluorine,potassium tert-butoxide,lithium hydride,phosphorus trioxide,black platinum,zirconium (IV) chloride,zirconium (IV) iodide.Forms explosive mixtures with: air.

XYLENE (MIXTURE OF ISOMERS)

Stable in normal conditions of use and storage.Reacts violently with: strong oxidants,strong acids,nitric acid,perchlorates.May form explosive mixtures with: air.

ACETONE

Risk of explosion on contact with: bromine trifluoride,fluorine dioxide,hydrogen peroxide,nitrosyl chloride,2-methyl-1,3 butadiene,nitromethane,nitrosyl perchlorate.May react dangerously with: potassium tert-butoxide,alkaline hydroxides,bromine,bromoform,isoprene,sodium,sulphur dioxide,chromium trioxide,chromyl chloride,nitric acid,chloroform,peroxymonosulphuric acid,phosphoryl oxychloride,chromosulphuric acid,fluorine,strong oxidising agents,strong reducing agents.Develops flammable gas on contact with: nitrosyl perchlorate.

2-BUTOXYETHANOL

May react dangerously with: aluminium,oxidising agents.Forms peroxides with: air.

BENZYL ALCOHOL

May react dangerously with: hydrobromic acid,iron,oxidising agents,sulphuric acid.Risk of explosion on contact with: phosphorus trichloride.

ETHYLBENZENE

Reacts violently with: strong oxidants.Attacks various types of plastic materials.May form explosive mixtures with: air.

**10.4. Conditions to avoid**

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

ETHANOL

Avoid exposure to: sources of heat,naked flames.

High temperature. Proximity to sources of ignition

ACETONE

Avoid exposure to: sources of heat,naked flames.

Highly flammable. Concentrated vapors are heavier than air. Forms explosive mixtures with air, even in empty and uncleaned containers. It can produce, if mixed with chlorinated hydrocarbons and exposed to light, highly irritating chlorine acetone.

2-BUTOXYETHANOL

Avoid exposure to: sources of heat,naked flames.

High temperatures and sources of ignition. Prolonged exposure with air / oxygen and light.

BENZYL ALCOHOL

Avoid exposure to: air,sources of heat,naked flames.

ETHYLBENZENE

- Heat, sparks, open flames, other sources of ignition, oxidizing conditions, high temperature with dehydrating conditions.

**10.5. Incompatible materials**

ETHANOL

strong mineral acids, oxidizing agents. Aluminum at higher temperatures.

ACETONE

Incompatible with: acids,oxidising substances.

Attacks many plastics and rubbers. Condensation may form on contact with barium hydroxide, sodium hydroxide and many other alkaline materials. Avoid contact with strong oxidizing agents, alkalis and amines.

2-BUTOXYETHANOL

Oxidizing agents.

BENZYL ALCOHOL

Incompatible with: sulphuric acid,oxidising substances,aluminium.

ETHYLBENZENE

- Strong oxidizing agents.
- Strong acids.
- Strong alkalis.

**10.6. Hazardous decomposition products**

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

ETHANOL

Combustion will generate carbon oxides.

ACETONE

May develop: ketenes,irritant substances.

In case of fire the following can be released: carbon monoxide and carbon dioxide.

2-BUTOXYETHANOL

May develop: hydrogen.

Carbon oxides.

ETHYLBENZENE

May develop: methane,styrene,hydrogen,ethane.

- Incomplete combustion can cause the production of carbon monoxide, carbon dioxide and other toxic substances gas.
- Thermal decomposition can produce carbon monoxide and other toxic vapors.

## SECTION 11. Toxicological information

**11.1. Information on toxicological effects**

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

TOLUENE

WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air; contact with the skin of products containing the substance.

XYLENE (MIXTURE OF ISOMERS)

WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; inhalation of ambient air.

ETHYLBENZENE

WORKERS: inhalation; contact with the skin.
POPULATION: ingestion of contaminated food or water; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

TOLUENE

Toxic effect on the central and peripheral nervous system with encephalopathy and polyneuritis; irritating for the skin, conjunctiva, cornea and respiratory apparatus.

XYLENE (MIXTURE OF ISOMERS)

Toxic effect on the central nervous system (encephalopathy); irritating for the skin, conjunctiva, cornea and respiratory apparatus.

ETHYLBENZENE

As the counterparts of benzene, may have an acute effect on the central nervous system, with depression, narcosis, often preceded by dizziness and associated with headache (Ispesl). Is irritating for skin, conjunctiva and respiratory tract.

Interactive effects

TOLUENE

Certain drugs and other industrial products can interfere with the metabolism of the toluene.

XYLENE (MIXTURE OF ISOMERS)

Intake of alcohol interferes with the metabolism of the substance, inhibiting it. Ethanol consumption (0.8 g/kg) before a 4-hour exposure to xylene vapours (145 and 280 ppm) causes a 50% reduction in the excretion of methyl hippuric acid, whereas the concentration of xylenes in the blood increases approx. 1.5-2 times. At the same time there is an increase in the secondary side effects of the ethanol. The metabolism of the xylenes is increased by phenobarbital and 3-methyl-colantrene type enzyme inducers. Aspirin and xylenes mutually inhibit their conjugation with the glycine, which results in a decrease in urinary excretion of methyl hippuric acid. Other industrial products can interfere with the metabolism of xylenes.

ACUTE TOXICITY

LC50 (Inhalation) of the mixture:
> 20 mg/l
LD50 (Oral) of the mixture:
>2000 mg/kg
LD50 (Dermal) of the mixture:
>2000 mg/kg

2-BUTOXYETHANOL

LD50 (Oral) 615 mg/kg Rat

LD50 (Dermal) 405 mg/kg Rabbit

LC50 (Inhalation) 2,2 mg/l/4h Rat

TOLUENE

LD50 (Oral) 5580 mg/kg Rat

LD50 (Dermal) 12124 mg/kg Rabbit

LC50 (Inhalation) 28,1 mg/l/4h Rat

ETHYLBENZENE

LD50 (Oral) 3500 mg/kg Rat

LD50 (Dermal) 15354 mg/kg Rabbit

LC50 (Inhalation) 17,2 mg/l/4h Rat

ETHANOL

LD50 (Oral) > 5000 mg/kg Rat

LC50 (Inhalation) 120 mg/l/4h Pimephales promelas

HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Equivalent or similar to OECD 401-Read across
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: LD50> 5000 mg / kg bw
Method: Equivalent or similar to OECD 403-Read across
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (vapors)
Results: LC50> 5610 mg / m3 air
Method: Equivalent or similar to OECD 402-Read across
Reliability: 2
Species: Rabbit (New Zealand White; male / female)
Route of exposure: Dermal
Results: LD50> 2000 mg / kg bw

TOLUENE

Method: Equivalent or similar to EU Method B.1
Reliability: 2
Species: Rat (Sprague-Dawley Cobb; male)
Route of exposure: Oral
Results: LD50 = 5580 mg / kg bw

Method: Equivalent or similar to OECD 403
Reliability: 2
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (vapors)
Results: LC50 = 25.7 mg / L air
Method: Not indicated
Reliability: 2
Species: Rabbit
Route of exposure: Dermal
Results: LD50> 5000 mg / kg bw
Bibliographic reference: Range-finding toxicity data: List VII, Smyth HF, Carpenter CP, Weil CS, Pozzani UC, Streigel JA and Nycum JS (1969

XYLENE (MIXTURE OF ISOMERS)

Method: Equivalent or similar to EU Method B.1
Reliability: 1
Species: Rat (F344 / N; male / female)
Route of exposure: Oral
Results: LD50 = 3523 mg / kg bw
Method: Equivalent or similar to EU Method B.2
Reliability: 2
Species: Rat (male)
Route of exposure: Inhalation (vapors)
Results: LD50 = 6700 ppm

ACETONE

Method: Not indicated
Reliability: 2
Species: Rat (Sprague-Dawley)
Route of exposure: Oral
Results: LD50 = 5800 mg / kg bw
Bibliographic reference: Acetone potentiation of acute acetonitrile toxicity, Freeman JJ, Hayes EP (1985)

2-BUTOXYETHANOL

Method: OECD 401
Reliability: 1
Species: guinea pig (Hartley; male / female)
Route of exposure: Oral
Results: LD50 = 1414 mg / kg bw
Method: CFR title 49, section 173.132
Reliability: 2
Species: Guinea pig (Dunkin-Hartley; male / female)
Route of exposure: Inhalation (vapor)
Results: Not classified
Method: OECD 402
Reliability: 1
Species: guinea pig (Hartley; male / female)
Route of exposure: Dermal
Results: Not classified

BENZYL ALCOHOL

Method: Not indicated
Reliability: 2
Species: Rat (Wistar; male)
Route of exposure: Oral
Results: LD50 = 1.55 mL / kg bw
Method: OECD 403
Reliability: 1
Species: Rat (Wistar; male / female)
Route of exposure: Inhalation (aerosol)

Results: NOAEC = 3297 mg / m3 air

1,2,4-TRIMETHYLBENZENE

Method: Equivalent or similar to EU Method B.1
Reliability: 1
Species: Rat (male)
Route of exposure: Oral
Results: LD50: 6 000 mg / kg bw
Method: Not indicated
Reliability: 2
Species: Rat (CD (COBS); male / female)
Route of exposure: Inhalation
Results: LC50: 10 200 mg / m³ air
Bibliographic reference:
Method: Not indicated
Reliability: 2
Species: Rat (CD (COBS); male / female)
Route of exposure: Dermal
Results: LD50: 4 other: mL / kg bw (3440 mg / kg)

SKIN CORROSION / IRRITATION

Causes skin irritation

HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: OECD 404
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Irritating

TOLUENE

Method: EU Method B.4
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Irritating

ETHANOL

Method: OECD 404
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Not irritating

2-BUTOXYETHANOL

Method: EU Method B.4
Reliability: 2
Species: Rabbit (New Zealand white; male / female)
Route of exposure: Dermal
Results: Irritating
Bibliographic reference: Jacobs G, Martens M, Mosselmans G, Proposal of limit concentrations for skin irritation within the context of a new EEC directive on the classification and labeling of preparations. (1987)

BENZYL ALCOHOL

Method: OECD 404
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Not irritating

ETHYLBENZENE

Method: Not indicated
Reliability: 2
Species: Rabbit
Route of exposure: Dermal
Results: Slightly irritating
Bibliographic reference: Smyth, Jr. H.F., Carpenter, C.P., Weil, C.S., Pozzani, U.C. and Striegel, J.A.,
Range finding toxicity data: List VI (1962)

1,2,4-TRIMETHYLBENZENE

Method: Equivalent or similar to EU Method B.4
Reliability: 2
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Irritating
Bibliographic reference: Jacobs G and Martens M, Evaluation of the test method for skin irritation as prescribed by OECD and EEC (1987)

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Equivalent or similar to OECD 405-Read across
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Not irritating

TOLUENE

Method: OECD 405
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Slightly irritating

2-BUTOXYETHANOL

Method: OECD 405
Reliability: 1
Species: Rabbit (New Zealand white; male / female)
Route of exposure: Ocular
Results: Irritating

BENZYL ALCOHOL

Method: OECD 405
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Ocular

Results: Irritating

ETHYLBENZENE

Method: Not indicated
Reliability: 2
Species: Rabbit
Route of exposure: Ocular
Results: Slightly irritating
Bibliographic reference: Wolf, M.A .; Rowe, V.K .; McCollister, D.D .; Hollingworth, R.L .; Oyen, F., Toxicological studies of certain alkylated benzenes. (1956)

1,2,4-TRIMETHYLBENZENE

Method: Equivalent or similar to OECD 405
Reliability: 2
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Not irritating

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

TOLUENE

Method: EU Method B.6
Reliability: 1
Species: guinea pig (Himalayan Albino; female)
Route of exposure: Dermal
Results: Not sensitizing

ACETONE

Method: Not indicated
Reliability: 2
Species: guinea pig (Hartley; female)
Route of exposure: Dermal
Results: Not sensitizing
Bibliographic reference: A new protocol and criteria for quantitative determination of sensitization potencies of chemicals by guinea pig maximization test, Nakamura A, Momma J, Sekiguchi H, Noda T, Yamano T, Kaniwa MA, Kojima S, Tsuda M, Kurokawa Y (1994 )

2-BUTOXYETHANOL

Method: OECD 406
Reliability: 1
Species: Guinea pig (Dunkin-Hartley; male / female)
Route of exposure: Dermal
Results: Not sensitizing
Method: Equivalent or similar to OECD 474-Test in vivo
Reliability: 1
Species: Mouse (B6C3F1)
Results: Negative

1,2,4-TRIMETHYLBENZENE

Method: Equivalent or similar to OECD 406
Reliability: 2
Species: guinea pig (P 'strain; male / female)
Route of exposure: Dermal

Results: Not sensitizing

Skin sensitization
HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Equivalent or similar to OECD 406-Read across
Reliability: 1
Species: guinea pig (Hartley; male)
Route of exposure: Dermal
Results: Not sensitizing

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Equivalent or similar to OECD TG 479-in vitro test-Read across
Reliability: 1
Species: Chinese hamster
Results: Negative with and without metabolic activation
Method: EPA OPPTS 870.5395-in vivo test-Read across
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation
Results: Negative

TOLUENE

Method: Equivalent or similar to EU Method B.13 / 14-in vitro test
Reliability: 2
Species: S. typhimurium
Results: Negative with and without metabolic activation
Method: Not indicated - in vivo test
Reliability: 2
Species: Rat
Route of exposure: Intraperitoneal
Results: Negative

ETHANOL

Method: Equivalent or similar to OECD 478 in vivo test
Reliability: 2
Species: Mouse (CFLP and Alderley Park; male)
Route of exposure: Oral
Results: Negative

XYLENE (MIXTURE OF ISOMERS)

Method: Equivalent or similar to EU Method B.10-in vitro test
Reliability: 2
Species: Chinese hamster
Results: Negative with and without metabolic activation
Method: Equivalent or similar to OECD 478
Reliability: 2
Species: Mouse (Swiss Webster; male / female)
Route of exposure: Dermal
Results: Negative

2-BUTOXYETHANOL

Method: Equivalent or similar to OECD 471 in vitro test
Reliability: 1
Species: S. typhimurium TA 1535
Results: negative
Bibliographic reference:
Method: Equivalent or similar to OECD 474-Test in vivo
Reliability: 1
Species: Mouse (B6C3F1)
Results: Negative

ETHYLBENZENE

Method: EPA OPPTS 870.5300 - In vitro Mammalian Cell Gene Mutation Test in vitro test
Reliability: 1
Species: Lymphoma mouse
Results: Negative
Method: OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) - in vivo test
Reliability: 1
Species: Mouse (NMRI; male)
Route of exposure: Oral
Results: Negative

1,2,4-TRIMETHYLBENZENE

Method: Equivalent or similar to OECD 471 in vitro test
Reliability: 2
Species: TA97a, TA98, TA100, TA102
Results: Negative with and without metabolic activation
Method: Equivalent or similar to OECD 474 in vivo test
Reliability: 2
Species: Mouse (Balb / c; male / female)
Route of exposure: Oral
Results: Negative

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Equivalent or similar to OECD 451-Read across
Reliability: 1
Species: Rat (Fischer 344; male / female)
Route of exposure: Inhalation (vapors)
Results: Negative

TOLUENE

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 1999).
The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

XYLENE (MIXTURE OF ISOMERS)

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC).
The US Environmental Protection Agency (EPA) affirms that "the data is inadequate for an assessment of the carcinogenic potential".

ACETONE

Method: Not indicated

Reliability: 2
Species: Mouse (ICR; female)
Route of exposure: Dermal
Results: Negative
Bibliographic reference: Mouse skin carcinogenicity tests of the flame retardants tris (2,3-dibromopropyl) phosphate, tetrakis (hydroxymethyl) phosphonium chloride, and polyvinyl bromide, Van Duuren BL, Loewengart G, Seldman I, Smith AC, Melchionne S (1974)

BENZYL ALCOHOL

Method: Equivalent or similar to OECD 451
Reliability: 1
Species: Rat (Fischer 344; male / female)
Route of exposure: Oral
Results: Negative

ETHYLBENZENE

Classified in Group 2B (possible human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 2000).
Classified in Group D (not classifiable as a human carcinogen) by the US Environmental Protection Agency (EPA) - (US EPA file on-line 2014).

REPRODUCTIVE TOXICITY

Suspected of damaging the unborn child

2-BUTOXYETHANOL

Method: Not indicated
Reliability: 1
Species: Mouse (CD-1; male / female)
Route of exposure: Oral
Results: NOAEL = 720 mg / kg bw / day
Bibliographic reference: Heindel JJ, Gulati DK, Russel VS, Reel JR, Lawton AD and Lamb JC, Assessment of Ethylene Glycol Monobutyl and monophenol Ether reproductive toxicity using a continuous breeding protocol in Swiss CD-1 mice (1990).

1,2,4-TRIMETHYLBENZENE

Method: Equivalent or similar to OECD 416
Reliability: 1
Species: Rat (Charles River COBS CD; male / female)
Route of exposure: Inhalation (vapor)
Results: NOAEC = 500 ppm

Adverse effects on sexual function and fertility
HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Equivalent or similar to OECD 416-Read across
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (vapors)
Results: NOAEC (fertility)> = 20000 mg / m3 air

TOLUENE

Method: Not indicated
Reliability: 2
Species: Rat (Sprague_Dawley; male / female)
Route of exposure: Inhalation (vapors)
Results: Negative, NOAEC (fertility) = 600 ppm
Bibliographic reference: Reproductive and developmental toxicity studies of toluene II. Effects of inhalation exposure on fertility in rats, Ono A, Sekita K, Ogawa Y, Hirose A, Suzuki S, Saito M, Naito K, Kaneko T, Furuya T, Kawashima K, Yasuhara K, Matsumoto K, Tanaka S, Inoue T and Kurokawa Y

(1996)

XYLENE (MIXTURE OF ISOMERS)

Method: Not indicated
Reliability: 2
Species: Rat (Crl-CD® (SC) BR; male / female)
Route of exposure: Inhalation (vapors)
Results: Negative, NOAEC (fertility) = 500 ppm

ETHYLBENZENE

Method: Equivalent or similar to OECD Guideline 415
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation
Results: NOAEC 1 000 ppm

Adverse effects on development of the offspring
HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Equivalent or similar to OECD 414-Read across
Reliability: 1
Species: Rat (Sprague-Dawley)
Route of exposure: Inhalation (vapors)
Results: NOAEL (development) = 23900 mg / m3 air

TOLUENE

Method: Not indicated
Reliability: 2
Species: Rat (Wistar)
Route of exposure: Inhalation (vapors)
Results: Negative, NOAEC (development) = 600 ppm
Bibliographic reference: Postnatal development and behavior of Wistar rats after prenatal toluene exposure, Thiel R and Chahoud I (1997)

ETHANOL

Method: Not indicated
Reliability: 2
Species: Rat (Sprague-Dawley)
Route of exposure: Oral
Results: NOAEL (development) 5.2 g ethanol / kg bw / day
Bibliographic reference: Prenatal ethanol exposure has differential effects on fetal growth and skeletal ossification, Simpson ME, Duggal S, & Keiver K (2005)

XYLENE (MIXTURE OF ISOMERS)

Method: Equivalent or similar to OECD 414
Reliability: 2
Species: Rat (Sprague-Dawley)
Route of exposure: Inhalation (vapors)
Results: Negative (development)

ACETONE

Method: Equivalent or similar to OECD 414
Reliability: 1
Species: Rat (Sprague-Dawley)
Route of exposure: Inhalation (vapors)

Results: Negative, NOAEC (development) = 2200 ppm

ETHYLBENZENE

Method: OECD Guideline 414
Reliability: 1
Species: Rat (Sprague-Dawley)
Route of exposure: Inhalation
Results: NOAEC 500 ppm

STOT - SINGLE EXPOSURE

May cause drowsiness or dizziness

HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

TOLUENE

Based on available data and through expert judgment, the substance is classified in the target prgani toxicity class for single exposure.

ETHANOL

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

XYLENE (MIXTURE OF ISOMERS)

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

ACETONE

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

2-BUTOXYETHANOL

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

BENZYL ALCOHOL

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

ETHYLBENZENE

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

1,2,4-TRIMETHYLBENZENE

Based on the available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

Target organ
HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Central nervous system

TOLUENE

Central nervous system

ACETONE

Narcotic effects

ETHYLBENZENE

hearing organs

1,2,4-TRIMETHYLBENZENE

Respiratory tract

Route of exposure
HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Inhalation

TOLUENE

Inhalation

ACETONE

Inhalation

1,2,4-TRIMETHYLBENZENE

Inhalation

STOT - REPEATED EXPOSURE

May cause damage to organs

HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS

Method: Not indicated
Reliability: 2
Species: Rat (Fischer 344; male)
Route of exposure: Oral
Results: Not specified
Bibliographic reference: Hydrocarbon nephropathy in male rats: identification of the nephrotoxic components of unleaded gasoline, Halder CA, et al. (1985)
Method: Equivalent or similar to OECD 453-Read across
Reliability: 1
Species: Rat (Fischer 344; male / female) and mouse (B6C3F; male / female)
Route of exposure: Inhalation (vapors)
Results: NOAEC = 1402 mg / m3 air
Method: Equivalent or similar to OECD 453-Read across
Reliability: 2
Species: Mouse (Swiss-Webster; male / female)
Route of exposure: Dermal
Results: NOAEL = 0.5 ml

TOLUENE

Method: Equivalent or similar to EU Method B.26
Reliability: 1
Species: Rat (Fischer 344; male / female)
Route of exposure: Oral
Results: NOAEL = 625 mg / kg bw / day
Method: EU Method B.29
Reliability: 1
Species: Rat (F344 / N; male / female)
Route of exposure: Inhalation (vapors)
Results: NOAEC = 625 ppm

ETHANOL

Method: Equivalent or similar to OECD 408
Reliability: 2
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: NOAEL 1 730 mg / kg bw / day

XYLENE (MIXTURE OF ISOMERS)

Method: Equivalent or similar to OECD 408
Reliability: 2
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: Negative

ACETONE

Method: Equivalent or similar to OECD 408
Reliability: 1
Species: Rat (Fischer 344; male / female)
Route of exposure: Oral
Results: Negative, NOAEL = 10000 ppm
Method: Not indicated
Reliability: 2
Species: Rat (Sprague-Dawley; male)
Route of exposure: Inhalation
Results: Negative, NOAEC = 19000 ppm
Bibliographic reference: Evaluation of toluene and acetone inhalant abuse. II. Model development and toxicology, Bruckner JV, Peterson RG (1981)
Method: Not indicated
Reliability: 2
Species: Not indicated
Route of exposure: Dermal
Results: Negative
Bibliographic reference: Pathology of aging female SENCAR mice used as controls in skin two-stage carcinogenesis studies, Ward J, Quander RD, Wenk M, Spangler E (1986)

2-BUTOXYETHANOL

Method: Equivalent or similar to OECD 408
Reliability: 1
Species: Rat (Fischer 344; male / female)
Route of exposure: Oral
Results: Negative, NOAEL <69 mg / kg bw
Method: Equivalent or similar to OECD 453
Reliability: 1
Species: Rat (Fischer 344; male / female)
Route of exposure: Inhalation (vapors)
Results: Negative, NOAEC <31 ppm
Method: Equivalent or similar to OECD 411

Reliability: 1
Species: Rabbit (New Zealand White; male / female)
Route of exposure: Dermal
Results: Negative; NOAEL> 150 mg / kg bw / day

BENZYL ALCOHOL

Method: Equivalent or similar to OECD 451
Reliability: 2
Species: Rat (Fischer 344; male / female)
Route of exposure: Oral
Results: NOAEL = 150 mg / kg bw / day
Method: OECD 412
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (aerosol)
Results: NOAEC = 1072 mg / m3 air

ETHYLBENZENE

Method: OECD Guideline 407
Reliability: 1
Species: Rat (Wistar; male / female)
Route of exposure: Oral
Results: NOAEL 75 mg / kg bw / day
Method: Equivalent or similar to OECD Guideline 453
Reliability: 1
Species: Rat (Fischer 344; male / female)
Route of exposure: Inhalation (vapors)
Results: NOAEC 250 ppm

1,2,4-TRIMETHYLBENZENE

Method: OECD 408-Read across
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: NOAEL = 600 mg / kg bw / day
Method: Equivalent or similar to OECD 452
Reliability: 1
Species: Rat (Wistar; male / female)
Route of exposure: Inhalation (vapors)
Results: NOAEC = 1800 mg / m3 air

Target organ
TOLUENE

Neurological

Route of exposure
TOLUENE

Inhalation

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

## SECTION 12. Ecological information

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it have negative effects on acquatic environment.

**12.1. Toxicity**

| TOLUENE | |
|---|---|
| LC50 - for Fish | 5,5 mg/l/96h |
| EC50 - for Crustacea | 3,78 mg/l/48h |
| EC50 - for Algae / Aquatic Plants | 134 mg/l/72h |
| EC10 for Algae / Aquatic Plants | 10 mg/l/72h |
| Chronic NOEC for Algae / Aquatic Plants | 10 mg/l |

| XYLENE (MIXTURE OF ISOMERS) | |
|---|---|
| LC50 - for Fish | 2,6 mg/l/96h |
| EC50 - for Crustacea | 1 mg/l/48h |
| EC50 - for Algae / Aquatic Plants | 1,3 mg/l/72h |
| EC10 for Algae / Aquatic Plants | 0,44 mg/l/72h |
| Chronic NOEC for Algae / Aquatic Plants | 0,44 mg/l |

| BENZYL ALCOHOL | |
|---|---|
| LC50 - for Fish | 460 mg/l/96h |
| EC50 - for Crustacea | 230 mg/l/48h |
| EC50 - for Algae / Aquatic Plants | 770 mg/l/72h |
| EC10 for Algae / Aquatic Plants | 310 mg/l/72h |
| Chronic NOEC for Algae / Aquatic Plants | 310 mg/l |

**12.2. Persistence and degradability**

TOLUENE
Easily degradable in water.
ETHANOL
Quickly biodegradable, 60% in 5 days.
XYLENE (MIXTURE OF ISOMERS)
Rapidly degradable in water, 98% in 28 days
ACETONE
Easily degradable in water, 90.9% in 28 days.
2-BUTOXYETHANOL
Easily degradable.
BENZYL ALCOHOL
Easily degradable in water, 95-97% in 21 days.
ETHYLBENZENE
Rapidly biodegradable, 79% in 28 days.

| 2-BUTOXYETHANOL | |
|---|---|
| Solubility in water | 1000 - 10000 mg/l |
| Rapidly degradable | |

| 1,2,4-TRIMETHYLBENZENE | |
|---|---|
| Solubility in water | 0,1 - 100 mg/l |
| Rapidly degradable | |

TOLUENE
Solubility in water 100 - 1000 mg/l
Rapidly degradable

ACETONE
Rapidly degradable

XYLENE (MIXTURE OF ISOMERS)
Solubility in water 100 - 1000 mg/l
Degradability: information not available

ETHYLBENZENE
Solubility in water 1000 - 10000 mg/l
Rapidly degradable

ETHANOL
Solubility in water 1000 - 10000 mg/l
Rapidly degradable

BENZYL ALCOHOL
Rapidly degradable

**12.3. Bioaccumulative potential**

2-BUTOXYETHANOL
Partition coefficient: n-octanol/water 0,81

1,2,4-TRIMETHYLBENZENE
Partition coefficient: n-octanol/water 3,65
BCF 243

TOLUENE
Partition coefficient: n-octanol/water 2,73
BCF 90

ACETONE
Partition coefficient: n-octanol/water -0,23
BCF 3

XYLENE (MIXTURE OF ISOMERS)
Partition coefficient: n-octanol/water 3,12
BCF 25,9

ETHYLBENZENE
Partition coefficient: n-octanol/water 3,6

ETHANOL

Partition coefficient: n-octanol/water -0,35

BENZYL ALCOHOL

Partition coefficient: n-octanol/water 1,1

**12.4. Mobility in soil**

1,2,4-TRIMETHYLBENZENE

Partition coefficient: soil/water 3,04

XYLENE (MIXTURE OF ISOMERS)

Partition coefficient: soil/water 2,73

**12.5. Results of PBT and vPvB assessment**

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

**12.6. Other adverse effects**

Information not available

## SECTION 13. Disposal considerations

**13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Waste transportation may be subject to ADR restrictions.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

ACETONE
Incinerate as hazardous waste according to applicable local, state and federal regulations. Do not throw in household waste.

2-BUTOXYETHANOL
Dispose of as hazardous waste. Recover or recycle if possible. Otherwise incineration. Dispose according to local regulations.

BENZYL ALCOHOL
Disposal methods: examine the possibilities of reuse. Product residues and empty uncleaned containers must be packed, sealed, labeled, and disposed of or recycled according to the relevant national and local regulations. In case of large quantities, consult the supplier. When empty uncleaned containers are transferred, the recipient must be alerted of any possible danger that may be caused by residue. For disposal within the EC, use the appropriate code according to the European waste list (EWL). It is the responsibility of the polluter to assign waste to specific waste codes for sectors and industrial processes according to the European Waste List (EWL).

ETHYLBENZENE
- The product must not be allowed to enter drains, water courses or the soil.
- The contaminated product, soil or water can be hazardous waste due to a potentially low flash point.
- Comply with applicable local, state or international regulations regarding solid or hazardous waste disposal and / or disposal of containers.
- Make sure that the effluent complies with the applicable regulations.
- Solids in landfills in permitted sites.
- Use registered carriers.

- Burns concentrated liquids.
- Avoid the flames.
- Ensure that emissions comply with applicable regulations.
- Avoid overloading / poisoning the biomass of plants.
- Diluting aqueous waste can biodegrade.

## SECTION 14. Transport information

**14.1. UN number**

| | |
| --- | --- |
| ADR / RID, IMDG, IATA: | 1993 |

**14.2. UN proper shipping name**

| | |
| --- | --- |
| ADR / RID: | FLAMMABLE LIQUID, N.O.S. |
| IMDG: | FLAMMABLE LIQUID, N.O.S. |
| IATA: | FLAMMABLE LIQUID, N.O.S. |

**14.3. Transport hazard class(es)**

| | | |
| --- | --- | --- |
| ADR / RID: | Class: 3 | Label: 3 |
| IMDG: | Class: 3 | Label: 3 |
| IATA: | Class: 3 | Label: 3 |


**14.4. Packing group**

| | |
| --- | --- |
| ADR / RID, IMDG, IATA: | II |

**14.5. Environmental hazards**

| | |
| --- | --- |
| ADR / RID: | NO |
| IMDG: | NO |
| IATA: | NO |

**14.6. Special precautions for user**

| | | | |
| --- | --- | --- | --- |
| ADR / RID: | HIN - Kemler: 33<br>Special Provision: - | Limited Quantities: 1 L | Tunnel restriction code: (D/E) |
| IMDG: | EMS: F-E, S-E | Limited Quantities: 1 L | |
| IATA: | Cargo: | Maximum quantity: 60 L | Packaging instructions: 364 |

| | | | |
|---|---|---|---|
| | Pass.: | Maximum quantity: 5 L | Packaging instructions: 353 |
| | Special Instructions: | A3 | |

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Information not relevant

## SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: P5c-E2

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

| | | |
|---|---|---|
| Point | 3 - 40 | |

Contained substance

| | | |
|---|---|---|
| Point | 28-29 | HYDROCARBONS, C6-7, FROM NAFTA CRACKING, REFINED WITH SOLVENTS Reg. no.: 01-2119486793-22-XXXX |
| Point | 48 | TOLUENE Reg. no.: 01-2119471310-51-XXXX |

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

**15.2. Chemical safety assessment**

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

## SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

| | |
| --- | --- |
| **Flam. Liq. 2** | Flammable liquid, category 2 |
| **Flam. Liq. 3** | Flammable liquid, category 3 |
| **Carc. 1A** | Carcinogenicity, category 1A |
| **Muta. 1A** | Germ cell mutagenicity, category 1A |
| **Repr. 2** | Reproductive toxicity, category 2 |
| **Acute Tox. 4** | Acute toxicity, category 4 |
| **Asp. Tox. 1** | Aspiration hazard, category 1 |
| **STOT RE 2** | Specific target organ toxicity - repeated exposure, category 2 |
| **Eye Irrit. 2** | Eye irritation, category 2 |
| **Skin Irrit. 2** | Skin irritation, category 2 |
| **STOT SE 3** | Specific target organ toxicity - single exposure, category 3 |
| **Aquatic Chronic 2** | Hazardous to the aquatic environment, chronic toxicity, category 2 |
| **Aquatic Chronic 3** | Hazardous to the aquatic environment, chronic toxicity, category 3 |
| **H225** | Highly flammable liquid and vapour. |
| **H226** | Flammable liquid and vapour. |
| **H350** | May cause cancer. |
| **H340** | May cause genetic defects. |
| **H361** | Suspected of damaging fertility or the unborn child. |
| **H361d** | Suspected of damaging the unborn child. |
| **H302** | Harmful if swallowed. |
| **H312** | Harmful in contact with skin. |
| **H332** | Harmful if inhaled. |
| **H304** | May be fatal if swallowed and enters airways. |
| **H373** | May cause damage to organs through prolonged or repeated exposure. |
| **H319** | Causes serious eye irritation. |
| **H315** | Causes skin irritation. |
| **H335** | May cause respiratory irritation. |
| **H336** | May cause drowsiness or dizziness. |
| **H411** | Toxic to aquatic life with long lasting effects. |
| **H412** | Harmful to aquatic life with long lasting effects. |
| **EUH066** | Repeated exposure may cause skin dryness or cracking. |

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)
- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Product`s classification is based on the calculation methods set out in Annex I of the CLP Regulation, unless otherwise indicated in sections 11 and 12.

The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:
The following sections were modified:
01 / 03 / 08 / 09 / 10 / 11 / 12 / 13 / 15 / 16.