

SAFETY DATA SHEET

1. IDENTIFICATION OF THE PRODUCT

| | |
|----------------------------|-------------------------------|
| NAME OF THE PRODUCT | Universal matt black paint 1L |
| REFERENCE | 010035 |

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 3 | H226 | Flammable liquid and vapour. |
| Serious eye damage, category 1 | H318 | Causes serious eye damage. |
| 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 3 | H412 | Harmful 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

| | |
|------|--|
| H226 | Flammable liquid and vapour. |
| H318 | Causes serious eye damage. |
| H315 | Causes skin irritation. |
| H336 | May cause drowsiness or dizziness. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statements

| | |
|----------------|--|
| P501 | Dispose of contents/ container to an approved waste disposal plant. |
| P102 | Keep out of reach of children. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P310 | Immediately call a POISON CENTER/ doctor/ . . . |

Contains

ISO-BUTANOL.
 N-BUTYL ACETATE.
 ETHYL ACETATE.
 ACETONE.

VOC (Directive 2004/42/EC)

Special finishes.

VOC given in g/litre of product in a ready-to-use condition: 820,00

Limit value: 840,00

2.3. Other hazards

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ethyl acetate.

Ethyl acetate.

3.2. Mixture

Contains:

| Identification | Classification 1272/2008 (CLP) | x = Conc. % |
|--|--|------------------|
| CAS: 123-86-4 EC: 204-658-1 INDEX: 607-025-00-1 REG.no. 01-2119485493-29-xxxx | N-butyl acetate Flam. Liq. 3 H226 STOT SE 3 H336 EUH066 | $20 \leq x < 30$ |
| CAS: 141-78-6 EC: 205-500-4 INDEX: 607-022-00-5 REG.no. 01-2119475103-46-xxxx | Ethyl acetate Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336 EUH066 | $10 \leq x < 20$ |
| CAS: 111-76-2 EC: 203-905-0 INDEX: 603-014-00-0 REG.no. 01-2119475108-36-xxxx | 2-Butoxyethanol Acute Tox. 4 H302 Acute Tox. 4 H312 Acute Tox. 4 H332 Eye Irrit. 2 H319 Skin Irrit. 2 H315 | $5 \leq x < 9$ |

| | | |
|---|---|------------------|
| CAS: 1330-20-7 EC: 215-535-7 INDEX: 601-022-00-9 REG.no. 01-2119488216-32-xxxx | <p>Xylene Flam. Liq. 3 H226 Acute Tox. 4 H312 Acute Tox. 4 H332 Asp. Tox. 1 H304, STOT RE 2 H373 Eye Irrit. 2 H319 Skin Irrit. 2 H315 STOT SE 3 H335 Aquatic Chronic 3 H412</p> <p>Classification note/notes according to Annex VI to the CLP Regulation: C</p> | $5 \leq x < 9$ |
| CAS: 67-64-1 EC: 200-662-2 INDEX: 606-001-00-8 REG. no. 01-2119471330-49-XXXX | <p>Acetone Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336 EUH066</p> | $1 \leq x < 5$ |
| CAS: 78-83-1 EC: 201-148-0 INDEX: 603-108-00-1 REG. no. 01-2119484609-23-xxxx | <p>Iso-butanol Flam. Liq. 3 H226 Eye Dam. 1 H318 Skin Irrit. 2 H315 STOT SE 3 H335 STOT SE 3 H336</p> | $3 \leq x < 5$ |
| CAS: EC: 918-668-5 INDEX: REG. no. 01-2119455851-35-xxxx | <p>Hydrocarbons, C9, aromatics Flam. Liq. 3 H226 Asp. Tox. 1 H304 STOT SE 3 H335 STOT SE 3 H336 Aquatic Chronic 2 H411 EUH066</p> | $1 \leq x < 2,5$ |

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

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 the problem persists, seek medical advice.

Skin

Remove contaminated clothing. Rinse skin and take 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.

N-butyl acetate

Inhalation: Cough, chest pain. Dizziness. Pulmonary edema. Depression of the central nervous system.

Ingestion: Nausea, vomiting. Headache.

Skin contact: Prolonged or repeated contact may cause irritation, redness and dermatitis.

Contact with eyes: May cause temporary eye irritation.

Xylene

Symptoms of acute poisoning:

Eyes: mild to moderate irritation due to liquids/vapors, possible corneal damage (generally, rapidly reversible).

Skin: redness, burning sensation; after prolonged contact dryness and/ or inflammation.

Inhalation: moderate irritation of the nose/ throat; possible lung damage as a result of massive inhalation; after aspiration or inhalation of aerosols: coughing, retching, bronchospasm, tachypnea, development of pulmonary edema, ventilation/perfusion disorders.

Ingestion: nausea, vomiting (danger of aspiration!), Diarrhea.

Absorption: headache, dizziness, nausea, dizziness -> unconsciousness/ coma, possible hypothermia, effects on the heart/circulatory system such as vasodilation (flushing), hypotension, arrhythmia (possible ventricular fibrillation through cardiac sensitization), danger of respiratory paralysis central or cardiac arrest; functional disorders of the liver and kidneys and persistent CNS disorders as sequelae.

Acetone

Inhalation: drowsiness, dizziness, disorientation, dizziness. High concentration vapors are anesthetics. Symptoms following over exposure may include headache. Exhaustion, dizziness and central nervous system depression.

Ingestion: central nervous system depression.

Skin contact: prolonged contact may cause redness, irritation and dehydration of the skin.

Eye contact: eye irritant. Symptoms following overexposure may include redness and pain.

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

Information not available.

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.

N-butyl acetate

The steam is heavier than air and is able to travel a considerable distance from a source of ignition and go back. Vapors can form an explosive mixture with air.

Acetone

Vapors can cause dizziness, fainting or suffocation.

Firefighting operations must take into account the risk of explosion. Containers may explode if exposed to fire.

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 firefighting 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).

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.

7. FIREFIGHTING MEASURES

7.1. Extinguishing media

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. 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.

N-butyl acetate

Suitable material: stainless steel, mild steel, aluminum.

Unsuitable material: copper and some types of plastic and rubber.

2-Butoxyethanol

Use mild steel or stainless steel containers. Do not store in plastic or natural rubber, butyl, polychloroprene or nitrile.

Xylene

Suitable materials: titanium, austenitic steels, aluminum. Plastics must be tested for their strength.

Unsuitable materials: rubber.

Acetone

Materials suitable for packaging: stainless steel, mild steel coated with polyethylene, glass.

7.3. Specific end use(s)

Information not available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

N-butyl acetate

Materiale consigliato: gomma butilica.

Tempo di permeazione: 60 min.

Spessore: 0,3 mm.

Oppure polivinilcloruro/ gomma nitrilica

Tempo di permeazione: 30 min.

Spessore: 0,9 mm.

N-butyl acetate

Materiale consigliato: gomma butilica.

Tempo di permeazione: 60 min.

Spessore: 0,3 mm.

Oppure polivinilcloruro/ gomma nitrilica

Tempo di permeazione: 30 min.

Spessore: 0,9 mm.

Xylene

GLOVES.

Permeation time ≥ 480 min.

Suitable materials:

Fluorocarbon rubber- FKM (0.4 mm thick).

Materials NOT suitable (due to degradation, severe swelling or low permeation time):

Natural rubber/natural latex – NR.

Polychloroprene – CR.

Nitrile rubber/nitrile latex – NBR.

Butyl rubber – butyl.

Polyvinyl chloride – PVC.

Acetone

GLOVES.

Permeation time: > 480 min.

Recommended material: butyl rubber.

Thickness: $> = 0.5$ mm.

Iso-butanol

GLOVES recommended for continuous contact:

- Permeation time > 480 min.

- Recommended materials: nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm).

8.1. Control parameters

Regulatory References:

| | | |
|-----|--------------|--|
| DEU | Deutschland | Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56. |
| ESP | España | Límites de exposición profesional para agentes químicos en España 2019. |
| FRA | France | Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 – INRS. |
| HUN | Magyarország | Az innovációért és technológiáért felelős miniszter 5/2020. (II. 6.) ITM rendelete a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről. |
| ITA | Italia | Decreto Legislativo 9 Aprile 2008, n.81. |
| POL | Polska | Rozporządzenie Ministra Rodziny, Pracy i Polityki Społecznej z dnia 12 czerwca 2018 r. w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy. |

| | | |
|-----|----------------|--|
| ROU | România | Hotararea 157/2020 pentru modificarea Hotărârii Guvernului nr.1.218/2006 privind stabilirea cerințelor minime de securitate și sănătate în muncă pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezența agenților chimici, precum și pentru modificarea și completarea Hotărârii Guvernului nr.1.093/2006 privind stabilirea cerințelor minime de securitate și sănătate pentru protecția lucrătorilor împotriva riscurilor legate de expunerea la agenți cancerigeni sau mutageni la locul de muncă. |
| SWE | Sverige | Hygieniska gränsvärden, Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden (AFS 2018:1). |
| GBR | United Kingdom | EH40/2005 Workplace exposure limits (Fourth Edition 2020). |
| EU | OEL EU | Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; 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 98/24/EC; Directive 91/322/EEC. |
| | TLV-ACGIH | ACGIH 2020. |

N-butyl acetate

Threshold Limit Value

| Type | Country | TWA/8h | STEL/15min | Remarks/ Observations |
|-----------|---------|-----------------------|-----------------------|-------------------------|
| | | mg/m ³ ppm | mg/m ³ ppm | |
| TLV-ACGIH | | 50 | 150 | Butyl acetate (Isomeri) |

Predicted no-effect concentration - PNEC

| | |
|--|-------------|
| Normal value in fresh water | 0,18 mg/l |
| Normal value in marine water | 0,018 mg/l |
| Normal value for fresh water sediment | 0,981 mg/kg |
| Normal value for marine water sediment | 0,098 mg/kg |
| Normal value for water, intermittent release | 0,36 mg/l |
| Normal value of STP microorganisms | 35,6 mg/l |
| Normal value for the terrestrial compartment | 0,09 mg/kg |

Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers | | | | Effects on workers | | | |
|-------------------|----------------------|----------------|---------------|----------------------|--------------------|----------------|---------------|----------------------|
| | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | VND | 3,4 mg/kg bw/d | | | | |
| Inhalation | | | VND | 12 mg/m ³ | | | VND | 48 mg/m ³ |
| Skin | | | VND | 3,4 mg/kg bw/d | | | VND | 7 mg/kg bw/d |

Ethyl acetate

Threshold Limit Value

| Type | Country | TWA/8h | STEL/15min | Remarks/Observations |
|-----------|---------|-----------------------|-----------------------|----------------------|
| | | mg/m ³ ppm | mg/m ³ ppm | |
| AGW | DEU | 1500 | 400 | 3000 800 |
| MAK | DEU | 750 | 200 | 1500 400 |
| VLA | ESP | 1460 | 400 | |
| VLEP | FRA | 1400 | 400 | |
| AK | HUN | 1400 | | 1400 |
| NDS/NDSch | POL | 200 | | 600 |
| NGV/KGV | SWE | 500 | 150 | 1100 300 |
| WEL | GBR | 730 | 200 | 1460 400 |
| OEL | EU | 734 | 200 | 1468 400 |
| TLV-ACGIH | | 1441 | 400 | |

Predicted no-effect concentration - PNEC

| | | |
|--|-------|-------|
| Normal value in fresh water | 0,24 | mg/l |
| Normal value in marine water | 0,024 | mg/l |
| Normal value for fresh water sediment | 1,15 | mg/kg |
| Normal value for marine water sediment | 0,115 | mg/kg |
| Normal value for water, intermittent release | 1,65 | mg/l |
| Normal value of STP microorganisms | 650 | mg/l |
| Normal value for the terrestrial compartment | 0,148 | mg/kg |

Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers | | | | Effects on workers | | | |
|-------------------|----------------------|----------------|---------------|------------------|--------------------|----------------|---------------|------------------|
| | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | 4,5 mg/kg bw/d | | | | |
| Inhalation | 734 mg/m3 | 734 mg/m3 | 367 mg/m3 | 367 mg/m3 | 1468 mg/m3 | 1468 mg/m3 | 734 mg/m3 | 734 mg/m3 |
| Skin | | | | 37 mg/kg bw/d | | | | 63 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 | |
| VLEP | FRA | 49 | 10 | 246 | 50 | |
| VLEP | ITA | 98 | 20 | 246 | 50 | SKIN |
| NDS/NDSch | POL | 98 | | 200 | | |
| TLV | ROU | 150 | 30 | 250 | 50 | |
| NGV/KGV | SWE | 50 | 10 | 246 | 50 | |
| WEL | GBR | 123 | 25 | 246 | 50 | |
| 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/d |
| Normal value for marine water sediment | 3,46 | mg/kg/d |
| Normal value for water, intermittent release | 9,1 | mg/l |
| 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/d |

Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers | | | | Effects on workers | | | |
|-------------------|----------------------|----------------|-----------------|------------------|--------------------|----------------|---------------|------------------|
| | 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 | 1091 mg/m3 | | 98 mg/m3 |
| Skin | | 89 mg/kg bw/d | | 75 mg/kg bw/d | | 89 mg/kg bw/d | | 125 mg/kg bw/d |

Xylene

Threshold Limit Value

| Type | Country | TWA/8h | | STEL/15min | | Remarks/Observations |
|-----------|---------|-------------------|-----|-------------------|-----|----------------------|
| | | mg/m ³ | ppm | mg/m ³ | ppm | |
| AGW | DEU | 440 | 100 | 880 | 200 | |
| MAK | DEU | 440 | 100 | 880 | 200 | |
| VLA | ESP | 221 | 50 | 442 | 100 | |
| VLEP | FRA | 221 | 50 | 442 | 100 | |
| AK | HUN | 221 | | 442 | | |
| VLEP | ITA | 221 | 50 | 442 | 100 | SKIN |
| NDS/NDSch | POL | 100 | | | | |
| NGV/KGV | SWE | 221 | 50 | 442 | 100 | |
| WEL | GBR | 220 | 50 | 441 | 100 | |
| 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 for water, intermittent release | 0,327 | mg/l |
| 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

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

Acetone

Threshold Limit Value

| Type | Country | TWA/8h | | STEL/15min | | Remarks/ Observations |
|-----------|---------|-------------------|-----|-------------------|------|-----------------------|
| | | mg/m ³ | ppm | mg/m ³ | ppm | |
| AGW | DEU | 1200 | 500 | 2400 | 1000 | |
| MAK | DEU | 1200 | 500 | 2400 | 1000 | |
| VLA | ESP | 1210 | 500 | | | |
| VLEP | FRA | 1210 | 500 | 2420 | 1000 | |
| AK | HUN | 1210 | | | | |
| VLEP | ITA | 1210 | 500 | | | |
| NDS/NDSch | POL | 600 | | 1800 | | |
| NGV/KGV | SWE | 600 | 250 | 1200 | 500 | |
| WEL | GBR | 1210 | 500 | 3620 | 1500 | |
| 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/d |
| Normal value for marine water sediment | 3,04 | mg/kg/d |
| Normal value for water, intermittent release | 21 | mg/l |
| Normal value of STP microorganisms | 100 | mg/l |
| Normal value for the terrestrial compartment | 29,5 | mg/kg/d |

Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers | | | | Effects on workers | | | |
|-------------------|----------------------|----------------|---------------|-----------------------|------------------------|----------------|---------------|------------------------|
| | 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/m ³ | 2420 mg/m ³ | | | 1210 mg/m ³ |
| Skin | | | | 62 mg/kg bw/d | | | | 186 mg/kg bw/d |

Iso-butanol

Threshold Limit Value

| Type | Country | TWA/8h mg/m ³ | ppm | STEL/15min mg/m ³ | ppm | Remarks/Observations |
|-----------|---------|--------------------------|-----|------------------------------|-----|----------------------|
| AGW | DEU | 310 | 100 | 310 | 100 | |
| MAK | DEU | 310 | 100 | 310 | 100 | |
| VLA | ESP | 154 | 50 | | | |
| VLEP | FRA | 150 | 50 | | | |
| NDS/NDSCh | POL | 100 | | 200 | | |
| TLV | ROU | 100 | 33 | 200 | 66 | |
| NGV/KGV | SWE | 150 | 50 | 250 | 75 | |
| WEL | GBR | 154 | 50 | 231 | 75 | |
| TLV-ACGIH | | 152 | 50 | | | |

Predicted no-effect concentration - PNEC

| | | |
|--|-------|---------|
| Normal value in fresh water | 0,4 | mg/l |
| Normal value in marine water | 0,04 | mg/l |
| Normal value for fresh water sediment | 1,56 | mg/kg/d |
| Normal value for marine water sediment | 0,156 | mg/kg/d |
| Normal value for water, intermittent release | 11 | mg/l |
| Normal value of STP microorganisms | 10 | mg/l |
| Normal value for the terrestrial compartment | 0,076 | mg/kg/d |

Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers | | | | Effects on workers | | | |
|-------------------|----------------------|----------------|----------------------|------------------|--------------------|----------------|-----------------------|------------------|
| | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Inhalation | | | 55 mg/m ³ | VND | | | 310 mg/m ³ | VND |

Hydrocarbons, C9, aromatics

Health - Derived no-effect level - DNEL / DMEL

| Route of exposure | Effects on consumers | | | | Effects on workers | | | |
|-------------------|----------------------|----------------|---------------|----------------------|--------------------|----------------|---------------|------------------------|
| | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | | | | | 11 mg/kg bw/d | | |
| Inhalation | | | | 32 mg/m ³ | | | | 1250 mg/m ³ |
| Skin | | | | 11 mg/kg bw/d | | | | 25 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.

Ethyl acetate

GLOVES.

-Recommended material: Polyvinyl chloride, nitrile rubber, neoprene, butyl rubber (thickness >0.7 mm), fluorine (thickness >0.7 mm).

-Permeation time: >480 min.

Xylene

IBE - Metilippuric acid in urine: 1.5 g/g creatinine (end of shift) (ACGIH 2019).

Acetone

Biological exposure indices (IBE): ACETONE in urine: 25 mg/L. Time of withdrawal: end of shift. (ACGIH 2019).

Hydrocarbons, C9, aromatics

Gloves:

Recommended material: Nitrile rubber. Viton rubber (rubberfluorinated).

Permeation time: >480 min.

Minimum thickness: 0.71 mm

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.

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, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (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.

2-Butoxyethanol

Biological exposure indicators (EIB) Butoxyacetic acid (BAA) in urine (with hydrolysis): 200 mg/g creatinine. Time of withdrawal: end of shift (TLV ACGIH 2019).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| Properties | Value | Information |
|----------------------------------|-----------------------|-------------|
| Appearance | Liquid | |
| Colour | In conformit  al nome | |
| Odour | TYPICAL OF SOLVENT | |
| Odour threshold | Not available | |
| pH | Not available | |
| Melting point/freezing point | Not available | |
| Initial boiling point | Not available | |
| Boiling range | Not available | |
| Flash point | >23 C | |
| Evaporation Rate | Not available | |
| Flammability of solids and gases | 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 | 1 | |
| Solubility | Not available | |
| Partition coefficient: n-octanol/water | Not available | |
| Auto-ignition temperature | Not available | |
| Decomposition temperature | Not available | |
| Viscosity | >20,5 mm ² /sec (40°C) | |
| Explosive properties | Not available | |
| Oxidising properties | Not available | |

9.2. Other information

| | |
|-----------------------------|--------------------------|
| VOC (Directive 2004/42/EC): | 82,00% - 820,00 g/litre. |
|-----------------------------|--------------------------|

10. STABILITY AND REACTIVITY

10.1. Reactivity

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

N-butyl acetate

It decomposes easily with water, especially when hot.

Acetone

Attacks various types of rubber.
 Attacks various types of plastic materials.

10.2. Chemical stability

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

2-Butoxyethanol

It can form explosive peroxides when exposed to air and light for a long time.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

N-Butyl acetate

The steam is heavier than air and is able to travel a considerable distance from a source of ignition and go back. Risk of explosion on contact with: strong oxidizing agents. May react dangerously with alkaline hydroxides, potassium ter-butoxide. Vapors can form an explosive mixture with air.

Xylene

It can give violent reactions in the presence of strong oxidants such as sulfuric acid, nitric acid, perchlorates. May form explosive mixtures with air.

Acetone

Explosive peroxides can form on contact with strong oxidizing agents.

In the presence of a strong base it can react violently with some halogenated hydrocarbons (INRS, 2008).

Aqueous solutions can easily catch fire (flash point of a 10% solution: 27°C) (INRS, 2008).

10.4 Conditions to avoid

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

N-Butyl acetate

Avoid exposure to moisture, sources of heat and naked flames.

2-Butoxyethanol

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

Xylene

Heating and open flames.

10.5 Incompatible materials

N-Butyl acetate

Nitrates, strong oxidizing substances, acids, bases and potassium t-butoxide.

Ethyl acetate

Oxidizing agents, acids, alkalis.

2-Butoxyethanol

Oxidizing agents, plastic, natural rubber, butyl, polychloroprene, nitrile, acids, strong bases, strong base salts, aluminum.

Xylene

Strong oxidizers and strong acids.

Acetone

May react dangerously if exposed to: strong oxidising agents, strong reducing agents, alkalis, amines. Strong oxidizing agents, amines, strong reducing agents, alkalis (organic and inorganic).

Iso-butanol

Strong oxidizing agents.

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.

2-Butoxyethanol

Carbon monoxide, carbon dioxide and other organic compounds are formed through combustion, thermal or oxidative degradation.

Xylene

Heated by decomposition, it emits fumes and acrid vapors.

11. TOXICOLOGICAL INFORMATION

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1 Information on toxicological effects

N-butyl acetate

Method: publication (2000).

Reliability (Klimisch score): 1.

Species: rat (Sprague Dawley; Male).

Routes of exposure: intravenous.

Results: No potential bioaccumulation 30 mg/kg of n-butyl acetate are rapidly absorbed and distributed through the circulatory system into the brain. During the distribution and accumulation phase, with a half-life of 0.4 min, the substance is hydrated into n-butanol. It has been observed that 99% of the hydrolysis of the substance (at a concentration of 30 mg/kg) occurs in 2.7 minutes.

Ethyl acetate

Method: study report (1998).

Reliability (Klimisch score): 1.

Species: rat (Sprague-Dawley; Male/Female).

Routes of exposure: intravenous and in vitro.

Results: After intravenous injection, ethyl ethanol was rapidly hydrolyzed to ethanol. The half-life in the blood was calculated at 33-37 seconds.

Xylene

Xylenes, due to their lipophilic properties, are rapidly absorbed through all exposure routes, are rapidly distributed throughout the body through the circulatory system and, if not metabolized, are rapidly eliminated with exhaled air. The main route of elimination is the renal route.

In €™ man:

-More than 50% of absorption occurs through the lungs, following inhalation and less than 50% through the gastrointestinal system.

-Approximately 95% of the absorbed quantity is transformed, by oxidation of the methyl group, to methylbenzoic acid which is conjugated with glycine to form metilippuric acid.

-Approximately 90-95% of the absorbed xylene is eliminated in the urine within 24 hours, in the form of metilippuric acid while about 5% is eliminated unchanged with the exhaled air.

Acetone

Acetone is rapidly absorbed by inhalation, ingestion and via the skin and is rapidly distributed throughout the body, particularly in organs with a high water content. It is completely metabolized and the formation of metabolites is related to the dose: at low doses methylglyoxal is formed, at higher doses propanediol is formed.

The elimination of low concentrations occurs through the exhaled air, while if the concentration is equal to or greater than 15 ppm the elimination takes place also through the urine.

Information on likely routes of exposure

N-butyl acetate

In vitro tests on skin permeability of n-butyl acetate indicate that the substance has a low tendency to penetrate the skin. (test on human skin from female donors) (method equivalent or similar to OECD 428).

It can be absorbed into the body by inhalation.

Xylene

Due to the high vapor pressure of xylenes at room temperature, the most important route of exposure is inhalation.

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

N-butyl acetate

In humans the substance vapors cause irritation of the eyes and nose. In the case of repeated exposures, skin irritation, dermatosis (with dryness and cracking of the skin) and keratitis occur.

Xylene

Acute effects: irritation of the eyes, airways and skin, disorders of the central nervous system (narcotic effects at high concentrations)

Chronic effects: local effects on the skin and mucous membranes, disorders of the central nervous system.

Interactive effects

Information not available.

Acute toxicity

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

N-Butyl acetate

LD50 (Oral) 12789 mg/kg Ratto (equivalente o similare a OECD 423)
 LD50 (Dermal) 14112 mg/kg Coniglio (equivalente o similare a OECD 402)
 LC50 (Inhalation) >21 mg/l/4h Ratto (OECD 403)

Ethyl acetate

LD50 (Oral) 4934 mg/kg
 LD50 (Dermal) >20000 mg/kg

Iso-butanol

LD50 (Oral) >2830 mg/kg
 LD50 (Dermal) >2000 mg/kg

Acetone

LD50 (Oral) 5800 mg/kg ratto."J Toxicol Environ Health 15: 609-621"
 LD50 (Dermal) 7400 mg/kg Ratto Wistar. Roudabush RL et al, (Toxicol Appl Pharmacol 7: 559-565., 1965)

2-Butoxyethanol

LD50 (Oral) 1414 mg/kg.
 LD50 (Dermal) >2000 mg/kg.
 LC50 (Inhalation) 2,56 mg/l/4h.

Hydrocarbons, C9, aromatics

| | |
|-------------------|---|
| LD50 (Oral) | 3492 mg/kg (Ratto) |
| LD50 (Dermal) | >3160 mg/kg (Coniglio; equivalente o similare a OECD 402) |
| LC50 (Inhalation) | >6,193 mg/l/4h (Ratto; equivalente o similare a OECD 403) |

Xylene

| | |
|-------------------|---|
| LD50 (Oral) | 3523 mg/kg (Ratto; equivalente o simile a EU B.1) |
| LD50 (Dermal) | 4350 mg/kg (Coniglio; IUCLID Chem Data Sheet ESIS) |
| LC50 (Inhalation) | 29 mg/l/4h (Ratto; equivalente o similare a EU B.2) |

N-Butyl acetate

Method: equivalent or similar to OECD 423.
Reliability (Klimisch score): 2.
Species: Rat (Sprague-Dawley; Male/Female).
Routes of exposure: oral.
Results: LD50= 12789 mg/kg.

Method: OECD 403.
Reliability (Klimisch score): 1.
Species: Rat (Wistar; male/female).
Routes of exposure: inhalation (aerosol).
Results: LC50= 0.74 mg/ L (4h).

Method: equivalent or similar to OECD 402.
Reliability (Klimisch score): 2.
Species: Rabbit (New Zealand White; Male /Female).
Routes of exposure: dermal.
Results: LD50 >16 mL/kg bw.

Ethyl acetate

Method: equivalent or similar to OECD 401.
Reliability (Klimisch score): 2.
Species: rabbit (Male/Female).
Exposure: oral.
Results LD50: 4934 mg/kg.

Bibliographical references: "Range finding toxicity data: List VI" (Am Ind Hyg Ass J, 23, 95 (1962)).
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White).
Exposure: dermal.
Results LD50: >20000 mg/kg.

2-Butoxyethanol

The substance is classified as harmful by ingestion (harmonized classification, Annex VI, Reg. 1272/2008).
The substance is classified as harmful by inhalation ((harmonized classification, Annex VI, Reg. 1272/2008).
The substance is classified as harmful by skin contact (harmonized classification, Annex VI, Reg. 1272/2008).

Xylene

Harmful by inhalation and in contact with skin, (Harmonized classification, Annex VI of CLP Reg.).

Method: equivalent or similar to EU B.1

Reliability (Klimisch score): 1 Species: Rat (F344/N; Male/Female).

Routes of exposure: oral.

Results: LD50= 3523 mg/kg bw.

Method: equivalent or similar to EU B.2.

Reliability (Klimisch score): 2.

Species: Rat (Male).

Routes of exposure: inhalation (vapors).

Results: LC50= 29 mg/L.

Method: no guideline.

Species: Rabbit.

Routes of exposure: dermal.

Results: LD50 >1700 mg/kg.

Reference: "Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 123, 1974".

Acetone

References: Freeman JJ et al., J Toxicol Environ Health 15: 609-621 (1985).

Method: no guideline.

Reliability (Klimisch score): 2.

Species: Rat (Sprague-Dawley; Female).

Routes of exposure: oral.

Results: LD50= 5800 mg/kg bw.

Reference: Roudabush RL et al., Toxicol Appl Pharmacol 7: 559-565 (1965).

Method: no guideline.

Reliability (Klimisch score): 2.

Species: Rabbit (White; Male/Female).

Routes of exposure: dermal.

Results: LD50= 400 mg/kg bw.

Reference: Bruckner JV et al., Toxicol Appl Pharmacol 61: 27-38 (1981).

Method: no guideline.

Reliability (Klimisch score): 2.

Species: Rat (Sprague-Dawley; Male).

Routes of exposure: inhalation (vapors) Results: LC50= 132 mg/L air.

Iso-butanol

Method: OECD 401.

Reliability (Klimisch score): 1.

Species: rat (Sprague-Dawley; Male/Female).

Routes of exposure: oral.

Results: LD50 >2830 mg/kg.

Reference: OECD SIDS Isobutanol (UNEP Publications (2004)).

Reliability (Klimisch score): 1.

Species: rat (Sprague-Dawley; Male/Female).

Routes of exposure: inhalation (vapors).

Results: LC50 >18.18 mg/l 6h.

Method: OECD 402.
Reliability (Klimisch score): 1.
Species: rabbit (New Zealand White; Male/Female).
Routes of exposure: dermal.
Results: LD50 >2000 mg/kg.

Hydrocarbons, C9, aromatics

Method: study report (1977).
Reliability (Klimisch score): 2.
Species: rat (Charles River CD; Male/Female).
Routes of exposure: oral.
Results: LD50= 3492 mg/kg.

Method: equivalent or similar to OECD 403.
Reliability (Klimisch score): 1.
Species: rat (Crl: CDBR; Male/Female).
Routes of exposure: inhalation (vapors).

Results: LC50 >6193 mg/m³ 4h.
Method: equivalent or similar to OECD 402.
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White; Male/Female).
Routes of exposure: dermal.
Results: LD50 >3160 mg/kg.

Skin corrosion/irritation

Causes skin irritation.

N-butyl acetate

Method: equivalent or similar to OECD 404.
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White).
Routes of exposure: dermal.
Results: non-irritating.

Ethyl acetate

Method: "Classification of Corrosive Hazards", Federal Reg vol 37, 57 (1972).
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White).
Results: not irritating.

2-Butoxyethanol

Method: EU B.4.
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White).
Routes of exposure: dermal.
Results: Irritating.

Xylene

Method: no guideline - Read across with similar substance.
Reliability (Klimisch score): 2.
Species: Rabbit (New Zealand White; Male).
Routes of exposure: dermal.
Results: moderately irritating.

Reference: "Hine CH, Zuidema HH, Industrial Medicine 39, 215-200 (1970)".

Acetone

Reference: Anderson C. et al., Contact Dermatitis 15: 143-151 (1986).
Method: no guideline.
Reliability (Klimisch score): 2.
Species: Piglet of India (Dunkin-Hartley).
Routes of exposure: dermal.
Results: non-irritating.

Iso-butanol

Method: Code of Federal Regulations, Title 16, Section 1500.41.
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White).
Routes of exposure: dermal.
Results: irritant (harmonized classification, CLP Reg., Annex VI).

Hydrocarbons, C9, aromatics

Method: OECD 404.
Reliability (Klimisch score): 1.
Species: rabbit (New Zealand White).
Routes of exposure: dermal.
Results: not classified.

Serious eye damage/irritation

Causes serious eye damage.

N-Butyl acetate

Method: OECD 405.
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White).
Exposure routes: ocular.
Results: non-irritating.

Ethyl acetate

Method: equivalent or similar to OECD 405.
Reliability (Klimisch score): 2.
Species: rabbit (New Zealand White).
Exposure routes: ocular.
Results: irritating. (Harmonized classification, Annex VI, CLP Reg.).

2-Butoxyethanol

Method: OECD 405.
Reliability (Klimisch score): 1.
Species: rabbit (New Zealand White).
Exposure routes: ocular.
Results: Irritating.

Xylene

Method: no guideline - Read across with similar substance.
Reliability (Klimisch score): 2.
Species: Rabbit (New Zealand White).
Exposure routes: ocular.
Results: moderately irritating.

Reference: "Hine CH, Zuidema HH, Industrial Medicine 39, 215-200 (1970)".

Acetone

Method: equivalent or similar to OECD 405.
Reliability (Klimisch score): 1.
Species: rabbit (New Zealand White).
Exposure routes: ocular.
Result: irritant.

Iso-butanol

Method: OECD 405.
Reliability (Klimisch score): 1.
Species: rabbit (New Zealand White).
Routes of exposure: eyepiece.
Results: corrosive (Harmonized classification, CLP regulation, Annex VI).

Hydrocarbons, C9, aromatics

Method: equivalent or similar to OECD 405.
Reliability (Klimisch score): 1.
Species: rabbit (New Zealand White).
Exposure routes: ocular.
Results: non-irritating.

Respiratory or skin sensitisation

Does not meet the classification criteria for this hazard class.

N-Butyl acetate

Based on the probative force of the available data determined by expert judgment, the substance is not classified by the class of danger of skin sensitization.

Ethyl acetate

Method: OECD 406.
Reliability (Klimisch score): 1.
Species: guinea pig (Dunkin-Hartley; Female).
Routes of exposure: dermal.
Results: non-sensitizing.

2-Butoxyethanol

Method: OECD 406.
Reliability (Klimisch score): 1.
Species: guinea pig (Dunkin-Hartley; Male/Female).
Routes of exposure: dermal.
Results: Non-sensitizing.

Xylene

Method: OECD 429.
Reliability (Klimisch score): 2.
Species: Mouse.
Routes of exposure: dermal.
Results: non-sensitizing.

Acetone

Reference: Nakamura A. et al., Contact Dermatitis 31: 72-85 (1994).
Method: no guideline.

Reliability (Klimisch score): 2.
Species: guinea pig (Hartley; Female).
Routes of exposure: dermal.
Result: non-sensitizing.

Iso-butanol

Method: equivalent or similar to OECD 406 - read across.
Reliability (Klimisch score): 2.
Species: guinea pig (Hartley).
Routes of exposure: dermal.
Results: non-sensitizing.

Hydrocarbons, C9, aromatics

Method: OECD 406.
Reliability (Klimisch score): 1.
Species: guinea pig.
Routes of exposure: dermal.
Results: non-sensitizing.

Respiratory sensitization

XYLENE.

VANILLIN.

SERIOUS EYE DAMAGE/IRRITATION: irritating to eyes, test in vivo, rabbit (OECD Guideline 405).

Germ cell mutagenicity

Does not meet the classification criteria for this hazard class.

N-Butyl acetate

Method: equivalent or similar to OECD 471 - In vitro test.
Reliability (Klimisch score): 2.
Species: TA 98, TA 100, TA 1535, TA 1537, TA 1538 and E. coli WP2 uvr A.
Results: negative.

Method: OECD 474 - In vivo test.
Reliability (Klimisch score): 2.
Species: mouse (NMRI).
Routes of exposure: oral.
Results: negative.

Ethyl acetate

Method: equivalent or similar to OECD 473.
Reliability (Klimisch score): 2.
In vitro test.
Species: chinese hamster (ovary).
Results: negative.

Method: equivalent or similar to OECD 474.
Reliability (Klimisch score): 2.
In vivo test.
Species: chinese hamster (Male/Female).
Exposure: oral.
Results: negative.

2-Butoxyethanol

Method: equivalent or similar to OECD 471 - In vitro test.

Reliability (Klimisch score): 1.
Species: *S. typhimurium*.
Results: negative.

Method: equivalent or similar to OECD 474.
Reliability (Klimisch score): 1.
Species: mouse (B6C3F1; Male).
Exposure routes: intraperitoneal.
Results: negative.

Xylene

Method: equivalent or similar to EU Method B.10 - In vitro test.
Reliability (Klimisch score): 2.
Species: Chinese hamster (ovary).
Results: negative with and without metabolic activation.

Method: equivalent or similar to OECD 478 - In vivo test.
Reliability (Klimisch score): 2.
Species: Mouse (Swiss Webster; Male/Female).
Exposure routes: subcutaneous.
Results: negative.

Acetone

Method: equivalent or similar to OECD 471 - in vitro test.
Reliability (Klimisch score): 1.
Species: *S. typhimurium*.
Result: negative.

Reference: National Toxicology Program (NTP) (1991) - In vivo test.
Method: no guideline.
Reliability (Klimisch score): 2.
Species: Mouse (B6C3F1; Male/Female).
Routes of exposure: oral.
Results: negative.

Iso-butanol

Method: equivalent or similar to OECD 471 - In vitro test.
Reliability (Klimisch score): 2.
Species: TA 1535, TA 1537, TA 98, TA97 and TA 100.
Results: negative with and without metabolic activation.

Method: OECD 474 - In vivo test.
Reliability (Klimisch score): 1.
Species: mouse (NMRI; Male/Female).
Routes of exposure: oral.
Results: negative.

Hydrocarbons, C9, aromatics

Method: equivalent or similar to OECD 471 - in vitro test.
Reliability (Klimisch score): 1.
Species: *S. typhimurium*.
Results: negative with and without metabolic activation.

Method: equivalent or similar to OECD 475 - in vivo test.
Reliability (Klimisch score): 2.
Species: Rat (Sprague-Dawley; Male/Female).
Routes of exposure: inhalation (vapors).
Results: negative.

Carcinogenicity

Does not meet the classification criteria for this hazard class.

N-Butyl acetate

There no available data for the hazard class CLP of carcinogenicity.

Ethyl acetate

Reference: Cancer Res. 33: 3069 - 3085. (1973).
Reliability (Klimisch score): 2.
Species: mouse (A / He; Male/Female).
Exposure routes: intraperitoneal.
Results: negative.

2-Butoxyethanol

Method: equivalent or similar to OECD 451.
Reliability (Klimisch score): 1.
Species: Rat (Fischer 344; Male/Female).
Routes of exposure: inhalation (vapors).
Results: negative. NOAEL (carcinogenicity)= 125 ppm.

Xylene

Method: equivalent or similar to EU Method B.32
Reliability (Klimisch score): 2.
Species: Rat (F344/N; Male/Female).
Routes of exposure: oral.
Results: negative.

Acetone

References: Van Duuren BL et al., Cancer Res 38: 3236-3240 (1978).
Method: no guideline.
Reliability (Klimisch score): 2.
Species: Mouse (ICR; Female).
Routes of exposure: dermal.
Results: negative.

Iso-butanol

Based on the evidence of available data, the substance is not classified for the hazard class CLP of carcinogenicity.

Hydrocarbons, C9, aromatics

Data not available.

Reproductive toxicity

Does not meet the classification criteria for this hazard class.

Xylene

Based on the evidence of available data, the substance is not classified for the hazard class CLP of toxicity to reproduction.

Acetone

Based on the evidence of available data, the substance is not classified for the hazard class CLP of toxicity to reproduction.

Hydrocarbons, C9, aromatics

Method: not indicated.

Reliability (Klimisch score): 2.

Species: Rat (Crj: CD (SD); Male/Female).

Routes of exposure: inhalation (vapors).

Results: negative.

Adverse effects on sexual function and fertility.

N-Butyl acetate

Method: OECD 416.

Reliability (Klimisch score): 1.

Species: rata (Sprague-Dawley; Male/Female).

Routes of exposure: inhalation (vapors).

Results: negative.

Ethyl acetate

Method: US EPA "Health Effects Testing Guidelines 40 CFR Part 798.2450".

Reliability (Klimisch score): 1.

Species: rat (Sprague-Dawley; Male).

Routes of exposure: inhalation (vapors).

Results: negative.

NOAEL results: 1500 ppm.

2-Butoxyethanol

Method: equivalent or similar to OECD 409.

Reliability (Klimisch score): 1.

Species: Rat (Fischer 344; Male/Female).

Routes of exposure: oral.

Results: negative. NOAEL (female) >470 mg/kg body weight/day.

Xylene

Method: equivalent or similar to OECD 414.

Reliability (Klimisch score): 2.

Species: Rat (Sprague-Dawley).

Routes of exposure: inhalation (vapors).

Results: negative.

Iso-butanol

Method: EPA OPPTS 870.3800.

Reliability (Klimisch score): 1.

Species: rat (Sprague-Dawley; Male/Female).

Routes of exposure: inhalation (vapors).

Results: negative. NOAEL (P0): >= 7.5 mg/l. NOAEL (F1): >= 7.5 mg/l. NOAEL (F2): >=7.5 mg/l.

Adverse effects on development of the offspring.

N-butyl acetate

Method: equivalent or similar to OECD 414.

Reliability (Klimisch score): 1.

Species: rabbit (New Zealand White).

Routes of exposure: inhalation (vapors).

Results: negative.

Ethyl acetate

Method: equivalent or similar to OECD 414.

Reliability (Klimisch score): 2.

Species: mouse (CD-1).

Routes of exposure: oral.

Results: negative. NOAEL (maternal): 2200 mg/kg body weight/day. NOAEL (development) >3600 mg/kg body weight/day.

2-Butoxyethanol

Method: equivalent or similar to OECD 414.

Reliability (Klimisch score): 1.

Species: rat (Fischer 344).

Routes of exposure: oral.

Results: negative. NOAEL (maternal)= 30 mg/kg body weight/day. NOAEL (development)= 100 mg/kg body weight/day.

Xylene

Method: equivalent or similar to EPA OPPTS 870.3800.

Reliability (Klimisch score): 2.

Species: Rat (CrI: CD (SD) IGS BR; Male/Female).

Routes of exposure: inhalation (vapors).

Results: negativ. NOAEC (reproduction) (development) >2171 mg/m³.

Acetone

Method: equivalent or similar to OECD 414.

Reliability (Klimisch score): 1.

Species: rat (Sprague-Dawley).

Routes of exposure: inhalation (aerosol).

Result: no teratogenic effect.

Iso-butanol

Method: OECD 414.

Reliability (Klimisch score): 1.

Species: rat (Wistar).

Routes of exposure: inhalation (vapors).

Results: negative. NOAEL (fetus): 10 mg/l. NOAEL (teratogenicity): 10 mg/l.

STOT - single exposure

May cause drowsiness or dizziness.

N-Butyl acetate

Method: EPA OTS 798.6050.

Reliability (Klimisch score): 1.

Species: rat (Sprague-Dawley; Male/Female).

Routes of exposure: inhalation (vapors).

Results: it induces transient narcotic effects at concentrations of 1500 and 3000 ppm, without any tendency to accumulate.

Ethyl acetate

Causes damage to organs (Central nervous system) in case of prolonged or repeated exposure (inhalation). (Harmonized classification, Annex VI, CLP Reg.)

2-Butoxyethanol

Based on the available data, the substance has no specific target organ toxicity effects for single

exposure and is not classified under the relevant CLP hazard class.

Xylene

Irritating to respiratory system (Harmonized classification, Annex VI of CLP Reg.).

Method: no guideline.

Reliability (Klimisch score): 2.

Species: Man.

Routes of exposure: inhalation.

Results: The acute exposure of human volunteers to xylene (100 ppm, 4 hours) leads to a deterioration of the performance in the simple reaction time test and in the chosen reaction time.

Reference: "Dudek B et al., Polish Journal of Occupational Medicine, Vol 3 Pt 1, pp109-116 (1990)".

Acetone

May cause drowsiness or dizziness (Harmonized classification, Annex VI, CLP Reg.).

Iso-butanol

Based on the available data, the substance has specific toxicity effects for target organs for single exposure and is classified under the relevant CLP hazard class. (Harmonized classification, CLP Reg., Annex VI).

Hydrocarbons, C9, aromatics

The substance has specific toxicity effects for target organs by single exposure [respiratory tract and central nervous system] and is classified under the relevant CLP hazard class.

By inhalation, it can irritate the respiratory tract and can cause drowsiness and dizziness.

Target organ

N-butyl acetate

Central nervous system.

Ethyl acetate

Central nervous system.

Xylene

Respiratory tract.

Iso-butanol

Central nervous system, respiratory tract.

Hydrocarbons, C9, aromatics

Respiratory and central nervous System.

Route of exposure

Ethyl acetate

Inhalation.

Xylene

Inhalation.

Iso-butanol

Inhalation.

Hydrocarbons, C9, aromatics

Inhalation.

STOT – Repeated exposure

Does not meet the classification criteria for this hazard class.

N-butyl acetate

Method: EPA OTS 798.2650 - 90 days test.

Reliability (Klimisch score): 1.

Species: Rat (Sprague-Dawley Male/Female).

Routes of exposure: oral.

Results: caused CNS effects (ataxia and hypoactivity). NOAEL= 125 mg/kg.

Ethyl acetate

Based on the available data, the substance has no specific target organ toxicity effects due to repeated exposure and is not classified under the relevant CLP hazard class.

Method: equivalent or similar to EPA OTS 795.2600.

Reliability (Klimisch score): 2.

Species: rat (Sprague-Dawley; Male/Female).

Routes of exposure: oral.

Results: negative. NOAEL: 900 mg/kg body weight/day.

Method: EPA OTS 798.2450.

Reliability (Klimisch score): 1.

Species: rat (CrI: CD BR; Male/Female).

Routes of exposure: inhalation.

Results: negative.

2-Butoxyethanol

Method: OECD 408.

Reliability (Klimisch score): 1.

Species: rat (Fischer; 344 Male/Female).

Routes of exposure: oral.

Results: negative. NOAEL (histopathological) <69 mg/kg body weight/day.

Method: equivalent or similar to OECD 453.

Reliability (Klimisch score): 1.

Species: Rat (Fischer 344; Male/Female).

Routes of exposure: inhalation (steam).

Results: negative. NOAEC (Kupffer cell pigmentation) <31 ppm.

Method: equivalent or similar to OECD 411.

Reliability (Klimisch score): 1.

Species: rabbit (New Zealand White; Male/Female).

Routes of exposure: dermal.

Results: negative. NOAEL > 150 mg/kg body weight/day.

Xylene

Studies on volunteers suggest that both short and long term exposures result in a variety of adverse effects on the nervous system which include headaches, mental confusion, narcosis, balance, short-term memory problems, dizziness and tremors. (OECD, SIAM 16, 27-30 May 2003).

Acetone

Method: equivalent or similar to OECD 408.

Reliability (Klimisch score): 1.

Species: rat (Fischer 344; Male/Female).
Routes of exposure: oral.
Result: negative.

Iso-butanol

Method: OECD 408.
Reliability (Klimisch score): 1.
Species: rat (Wistar; Male/Female).
Routes of exposure: oral.
Results: negative. NOAEL > 1450 mg/kg body weight/day.

Method: EPA OPPTS 870.3800.
Reliability (Klimisch score): 1.
Species: rat (Sprague-Dawley; Male/Female).
Routes of exposure: inhalation (vapors).
Results: negative. NOAEL > = 7.5 mg/l.

Hydrocarbons, C9, aromatics

Method: equivalent or similar to OECD 408.
Reliability (Klimisch score): 2.
Species: Rat (Sprague-Dawley; Male/Female).
Routes of exposure: oral.
Results: negative. NOAEL = 600 mg/kg-day.

Method: equivalent or similar to OECD 452.
Reliability (Klimisch score): 1.
Species: Rat (Wistar; Male/Female).
Routes of exposure: inhalation (vapors).
Results: negative. NOAEC (Male) = 1800 mg/m³. NOAEC Female = 900 mg/m³.

Target organ.

Xylene

Liver, kidneys.

Route of exposure.

Xylene

Inhalation and ingestion.

Aspiration hazard

Does not meet the classification criteria for this hazard class Viscosity: >20,5 mm²/sec (40°C).

N-Butyl acetate

There no available data for the hazard class CLP of aspiration hazard.

Ethyl acetate

There no available data for the hazard class CLP of aspiration hazard.

2-Butoxyethanol

No data available on the risk of aspiration.

Xylene

If swallowed, aspiration into the lungs can lead to chemical pneumonitis (ATSDR, 2007; IPCS, 1992).

Acetone

There no available data for the hazard class CLP of aspiration hazard.

Iso-butanol

No available data for the hazard class CLP of aspiration hazard.

Hydrocarbons, C9, aromatics

Based on the available data, the substance is hazardous in case of aspiration and is classified under the relevant CLP hazard class.

12.ECOLOGICAL INFORMATION

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

12.1.Toxicity

Hydrocarbons, C9, aromatics

| | |
|---------------------|---|
| LL50 (Fish): | 9,2 mg/L/96h (Oncorhynchus mykiss; OCDE 203). |
| EC50 (Crustaceans): | 3,2 mg/L/48h (Daphnia magna; OCDE 202). |
| EbL50 (Algae): | 2,6 mg/L/72h (Pseudokirchneriella subcapitata; OECD 201). |
| ErL50 (Algae): | 2,9 mg/L/72h (Pseudokirchneriella subcapitata; OCDE 201). |

N-Butyl acetate

| | |
|---------------------------------|---|
| LC50 – for Fish | 18 mg/l/96h Pimephales promelas (OECD 203). |
| EC50 – for Crustacea | 44 mg/l/48h Daphnia sp. |
| EC50 - for Algae/Aquatic Plants | 674,7 mg/l/72h Desmodesmus subspicatus. |

Ethyl acetate

| | |
|---------------------------------------|--|
| LC50 – for Fish | 230 mg/l/96h (Pimephales promelas; US EPA E03-05). |
| EC50 – for Crustacea | 1350 mg/l/48h (Hydra Oligactis; Aquat. Toxicol. 4, 73 - 82 (1983)). |
| Chronic NOEC for Fish | >75,6 mg/l/32d (Pimephales promelas; equivalente o similare a OECD 210). |
| Chronic NOEC for Crustacea | 2,4 mg/l 21d (Daphnia magna; OECD 211). |
| Chronic NOEC for Algae/Aquatic Plants | >100 mg/l/72h (Desmodesmus subspicatus; OECD 201). |

Iso-butanol

| | |
|---------------------------------|--|
| LC50 - for Fish | 1430 mg/l/96h (Pimephales promelas; Environ Toxicol Chem 14: 1591-1605). |
| EC50 - for Crustacea | 1100 mg/l/48h (Daphnia pulex; Environmental Toxicology and Chemistry 5(4): 393-398). |
| EC50 - for Algae/Aquatic Plants | 593 mg/l/72h (Pseudokirchnerella subcapitata; OECD 201). |
| Chronic NOEC for Crustacea | 20 mg/l/21d (Daphnia magna; Water Res. 23(4): 501-510 (1989)). |

Acetone

| | |
|---------------------------------|--|
| LC50 - for Fish | 6210 mg/l/96h Pimephales promelas (equivalente o similare a OECD 203). |
| EC50 - for Crustacea | 8800 mg/l/48h Daphnia pulex. "Adema, D.M.M. (1978) Hydrobiologia 59, 125-134". |
| EC50 - for Algae/Aquatic Plants | 530 mg/l/8 d Microcystis aeruginosa (DIN 38412 part 9). |
| NOEC for Crustacea | >1106mg/l/28 d Daphnia magna. "Arch Environm Contam Toxicol 12: 305-310". |

2-Butoxyethanol

| | |
|--|---|
| LC50 - for Fish | 1464mg/l/96h (Oncorhynchus mykiss; OECD 203). |
| EC50 - for Crustacea | 1800mg/l/48h (Daphnia magna; OECD 202). |
| EC50 - for Algae/Aquatic Plants | 911mg/l/72h (Pseudokirchnerella subcapitata; OECD 201). |
| EC10 - for Crustacea | 134 mg/l/21d (Daphnia magna; OECD 211). |
| Chronic NOEC for Fish | >100 mg/l/21d (Danio rerio; OECD 204). |
| Chronic NOEC for Crustacea | 100 mg/l/21d (Daphnia magna; OECD 211). |
| Chronic NOEC for Algae/Aquatic GPlants | 88mg/l/72h(Pseudokirchnerella subcapitata; OECD 201). |

Xylene

| | |
|---------------------------------|--|
| LC50 - for Fish | 13,5 mg/l/96h (Oncorhynchus mykiss; OECD, SIAM 16, 27-30 May 2003 miscela di xileni) |
| EC50 - for Crustacea | >34 mg/l/48h (Ceriodaphnia dubia; US EPA 600/4-91-003 read across) |
| EC50 - for Algae/Aquatic Plants | 10 mg/l/72h (Skeletonema costatum; OECD, SIAM 16, 27-30 May 2003, miscela di xileni) |
| Chronic NOEC for Fish | >1,3 mg/l/56d (Oncorhynchus mykiss; Walsh, Armstrong, Bartley, Salman and Frank 1977) |
| Chronic NOEC for Crustacea | 1,7 mg/l/7d (Ceriodaphnia dubia; US EPA 600/4-91-003, Read across sostanza analoga)) |

12.2. Persistence and degradability

N-butyl acetate

Readily biodegradable, 83% in 28 days (OECD 301 D).

Ethyl acetate

Ready biodegradable, 69% in 20 d (BOD - "Standard methods for the examination of water and waste water 1971").

2-Butoxyethanol

Rapidly degradable, 90.4% in 28 days (OECD 301 B).

Xylene

Rapidly degradable, 98% in 28 days (OECD 301 F).

Acetone

Rapidly degradable, 90.9% in 28 days (equivalent or similar to OECD 301 B).

Iso-butanol

Rapidly degradable, 70-80% in 28 days (OECD 301 D).

Hydrocarbons, C9, aromatics

Rapidly degradable, 78% in 28 days (OECD 301 F).

N-butyl acetate

Rapidly degradable.

Ethyl acetate

Rapidly degradable.

Iso-butanol

Solubility in water 70 mg/l (pH: 6,8, T:20°C; OECD 105).

Rapidly degradable.

Acetone

Rapidly degradable.

2-Butoxyethanol

Solubility in water
Rapidly degradable

900 mg/l (CRC Handbook of Chemistry and Physics).

Hydrocarbons, C9, aromatics

Rapidly degradable.

Xylene

Solubility in water
Rapidly degradable.

146 mg/l (pH=7, 25°C; CRC Press 2003).

12.3. Bioaccumulative potential

N-Butyl acetate

Partition coefficient: n-octanol/water

2,3 mg/l a 25°C (OECD117).

Ethyl acetate

Partition coefficient: n-octanol/water

0,68 Log Kow (EPA OPPTS 830.7560).

Iso-butanol

Partition coefficient: n-octanol/water

1 Log Kow (pH=7, T= 25°C; OECD 117).

Acetone

Partition coefficient: n-octanol/water
BCF

-0,24 Log Kow (Chem. Rev. 71 (6), 525-616, 1971).

3 (valore calcolato con EPIWIN v3.20, BCFWIN v2.17).

2-Butoxyethanol

Partition coefficient: n-octanol/water

0,81 Log Kow (BASF standard method).

Xylene

Partition coefficient: n-octanol/water

3,2 Log Kow (pH=7, 20°C; American Chemical Society, Washington DC, 1995).

BCF

25,7 - 56 giorni (Appl. Sci. Branch, Eng. Res. Cent. Denver, CO: 15p.).

12.4. Mobility in soil

Information not available.

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 \geq than 0,1%.

12.6. Other adverse effects

Information not available.

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.

14. TRANSPORT INFORMATION



14.1. UN number

ADR/RID, IMDG, IATA: 1263

14.2. UN proper shipping name

ADR/RID: PAINT or PAINT RELATED MATERIAL.
 IMDG: PAINT or PAINT RELATED MATERIAL.
 IATA: PAINT or PAINT RELATED MATERIAL.

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: III

14.5. Environmental hazards

ADR/RID: NO
 IMDG: NO
 IATA: NO

14.6. Special precautions for user

| | | | |
|----------|----------------------|------------------------|--------------------------------|
| ADR/RID: | HIN - Kemler: 30 | Limited Quantities: 5L | Tunnel restriction code: (D/E) |
| | Special provision: - | | |
| IMDG: | EMS: F-E, S-E | Limited Quantities: 5L | |
| IATA: | Cargo: | Maximum quantity: 220L | Packaging instructions: 366 |
| | Pass.: | Maximum quantity: 60L | Packaging instructions: 355 |
| | Special provision: | A3, A72, A192 | |

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

Information not relevant.

15. REGULATORY INFORMATION

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

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

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

Product

Point 3 - 40

Contained substance

| | | |
|-------|----|---|
| Point | 75 | 2-Butoxyethanol Nº Reg.: 01-2119475108-36-xxxx |
| Point | 75 | Xylene Nº Reg.: 01-2119488216-32-xxxx |
| Point | 75 | Iso-butanol Nº Reg.: 01-2119484609-23-xxxx |
| Point | 75 | Carbonio amorfo Nº Reg.: 01-2119384822-32-XXXX |
| Point | 75 | 2-Butanone oxime Nº Reg.: 01-2119539477-28-xxxx |

Regulation (EC) No. 2019/1148 - on the marketing and use of explosives precursors

Regulated explosives precursor.

The acquisition, introduction, possession or use of that regulated explosives precursor by members of the general public is subject to reporting obligations as set out in Article 9. All suspicious transactions and significant disappearances and thefts must be reported to the relevant national contact point.

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage \geq 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.

VOC (Directive 2004/42/EC)

Special finishes.

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances:

ISO-BUTANOL
HYDROCARBONS, C9, AROMATICS.

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. |
| 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 Dam. 1 | Serious eye damage, category 1. |
| 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. |
| 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. |
| H318 | Causes serious eye damage. |
| 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.
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10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament.
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- Handling Chemical Safety.
- INRS - Fiche Toxicologique (toxicological sheet).
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- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition.
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Calculation methods for classification

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

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.