

Product name: **SolvCaITN**
Creation date: **9.10.2020** · Version: 1

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

1.1. Product identifier

Product name

SolvCaITN

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

Relevant identified uses

Calibration solution for solvent-based MIRA analyzer.

Uses advised against

No information.

1.3. Details of the supplier of the safety data sheet

Supplier

CLADE GmbH
Address: Schelztorstraße 54-56, 73728 Esslingen, Germany
Phone: +49 711-400 52 400
Fax: +49 711-400 52 800
E-mail: info@clade.io

1.4. Emergency telephone number

112

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Flam. Liq. 2; H225 Highly flammable liquid and vapour.
Asp. Tox. 1; H304 May be fatal if swallowed and enters airways.
Skin Irrit. 2; H315 Causes skin irritation.
Eye Irrit. 2; H319 Causes serious eye irritation.
STOT SE 3; H336 May cause drowsiness or dizziness.
Carc. 2; H351 Suspected of causing cancer.
Repr. 2; H361d Suspected of damaging the unborn child.
STOT RE 2; H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure.
Aquatic Chronic 2; H411 Toxic to aquatic life with long lasting effects.

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2.2 Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]



Signal word: **Danger**

H225 Highly flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

H361d Suspected of damaging the unborn child.

H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe mist/vapours.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P310 + P331 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P312 Call a POISON CENTER/doctor if you feel unwell.

P501 Dispose of contents/container in accordance with national regulation.

2.2.2. Contains:

toluene (CAS: 108-88-3, EC: 203-625-9, Index: 601-021-00-3)

naphtalene (CAS: 91-20-3, EC: 202-049-5, Index: 601-052-00-2)

2.2.3. Special provisions

Special hazards are not known or expected.

2.3. Other hazards

No information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

For mixtures see 3.2.

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3.2. Mixtures

| Name | CAS EC Index | % | Classification according to Regulation (EC) No 1272/2008 (CLP) | Specific Conc. Limits | REACH Registration No. |
|------------|---------------------------------------|---------|---|-----------------------|------------------------|
| toluene | 108-88-3 203-625-9 601-021-00-3 | 90-<100 | Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H336 Repr. 2; H361d STOT RE 2; H373 Aquatic Chronic 3; H412 | | 01-2119471310-51 |
| naphtalene | 91-20-3 202-049-5 601-052-00-2 | 5-<10 | Flam. Sol. 2; H228 Acute Tox. 4; H302 Carc. 2; H351 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 | | - |

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

General notes

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency.

No action shall be taken involving any personal risk or without suitable training. When it is suspected, that there may still be harmful vapours/fumes present in the air, respiratory protection (mask; self contained breathing apparatus) must be used. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Following inhalation

Remove patient to fresh air - move out of dangerous area. Keep at rest in a position comfortable for breathing. If symptoms occur, seek medical advice. If breathing is irregular or respiratory arrest occurs provide artificial respiration. Seek medical help immediately. In case of unconsciousness bring patient into stable side position and seek medical attention.

Following skin contact

Take off all contaminated clothing. Wash affected skin areas thoroughly with plenty of water and soap. Consult a physician.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. Seek medical help.

Following ingestion

Do not induce vomiting! Rinse mouth thoroughly with water. Immediately consult a doctor. Show the physician the safety data sheet or label. Never give anything by mouth to an unconscious person.

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

Inhalation

Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation.

Coughing, sneezing, nasal discharge, labored breathing.

Vapours may cause drowsiness and dizziness.

Symptoms include: headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, unconsciousness.

Skin contact

Itching, redness, pain.

Eye contact

Redness, tearing, pain.

Ingestion

May cause abdominal discomfort.
May cause nausea/vomiting and diarrhea.
Irritates mucous membranes in the mouth, throat, esophagus and in gastrointestinal area.
Aspiration into the lungs causes coughing, shortness of breath and may lead to chemical pneumonia.
Can cause headache, vertigo.
Changes in blood count.
Excitement.
Impaired balance and coordination.
Convulsions
Coma.

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

Symptoms of poisoning may appear several hours later. Keep under medical supervision for at least 48 hours. Aspiration can cause chemical pneumonitis. Later control for pneumonia and pulmonary edema.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam.

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

In case of a fire toxic gases can be generated; do not inhale gases/smoke. In the event of fire the following can be generated: carbon monoxide (CO), carbon dioxide (CO₂).

5.3. Advice for firefighters

Protective actions

In case of fire evacuate the area. In case of fire or heating do not breathe fumes/vapours. Prolonged heating can cause an explosion. Vapours can form explosive mixtures with air. Cool containers at risk with water spray. If possible remove containers from endangered area. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for firefighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated firefighting water and fire residues must be disposed of in accordance with the local regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8).

Emergency procedures

Ensure adequate ventilation. Keep away from sources of ignition and/or heat; No smoking! Prevent access to unprotected personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate the danger zone. Do not breathe vapour or mist. Avoid contact with skin, eyes and clothing.

6.1.2. For emergency responders

Use personal protective equipment.

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6.2. Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. In case of release into the environment, inform the relevant authorities.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

Stem the spill if this does not pose risks.

6.3.2. For cleaning up

Prevent release into the sewer, water, basements or confined areas. Make sure the leakage site is well aired. Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Use only explosion-proof instruments and equipment. Use spark-proof tools. Clean residue from spill site. Dispose in accordance with applicable regulations (see Section 13).

6.3.3. Other information

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6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Protective measures

Measures to prevent fire

Ensure adequate ventilation. Vapours are heavier than air and spread along the floor. They form explosive mixtures with air. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. Use spark-proof tools. Protect from open fire and other sources of ignition or heat. Use explosively safe equipment (ventilators, lighting, working instruments and devices,...); Ensure proper grounding of the equipment.

Measures to prevent aerosol and dust generation

Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

Measures to protect the environment

Do not discharge into drains, surface water and soil. After use immediately close container tightly.

7.1.2. Advice on general occupational hygiene

Avoid exposure - obtain special instructions before using. Use good personal hygiene practices – wash hands at breaks and when done working with material. Avoid contact with skin, eyes and clothes. Do not eat, drink or smoke while working. Do not breathe vapours/mist. Remove contaminated clothes and wash them before reuse. Wear suitable protective equipment; see Section 8. Refer to instructions on label and regulations for safety and health at work.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Technical measures and storage conditions

Store in accordance with local regulations. Keep away from sources of ignition - no smoking. Keep in a cool, dry and well ventilated place. Protect from open fire, heat and direct sunlight. Keep away from food, drink and animal feeding stuffs. Keep away from oxidising substances. Keep in tightly closed container.

7.2.2. Packaging materials

Store only in original container.

7.2.3. Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking. Do not store in unlabelled containers.

7.2.4. Storage class

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7.2.5. Further information on storage conditions

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7.3. Specific end use(s)

Recommendations

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Industrial sector specific solutions

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limit values

| Name (CAS) | Limit values | | Short-term exposure limit | | Remarks | Biological Tolerance Values |
|---|----------------------------|-------------------|----------------------------|-------------------|---------|---|
| | ml/m ³ (ppm) | mg/m ³ | ml/m ³ (ppm) | mg/m ³ | | |
| Toluene (108-88-3) | 50 | 191 | 100 | 384 | Sk | |
| Polycyclic aromatic hydrocarbons (PAHs) (BAT) | | | | | | 4 µmol 1-hydroxypyrene/mol creatinine in urine - Post shift |

8.1.2. Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2012+A1:2015 Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values.

8.1.3. DNEL/DMEL values

For components

| Name | Type | Exposure route | Exposure frequency | Value | Remark |
|----------------------|----------|----------------|-------------------------------|------------------------|--------|
| toluene (108-88-3) | Worker | inhalation | long term (systemic effects) | 192 mg/m ³ | |
| toluene (108-88-3) | Worker | inhalation | short term (systemic effects) | 384 mg/m ³ | |
| toluene (108-88-3) | Worker | inhalation | long term (local effects) | 192 mg/m ³ | |
| toluene (108-88-3) | Worker | inhalation | short term (local effects) | 384 mg/m ³ | |
| toluene (108-88-3) | Worker | dermal | long term (systemic effects) | 384 mg/kg bw/day | |
| toluene (108-88-3) | Consumer | inhalation | long term (systemic effects) | 56,5 mg/m ³ | |
| toluene (108-88-3) | Consumer | inhalation | short term (systemic effects) | 226 mg/m ³ | |
| toluene (108-88-3) | Consumer | inhalation | long term (local effects) | 56,5 mg/m ³ | |
| toluene (108-88-3) | Consumer | inhalation | short term (local effects) | 226 mg/m ³ | |
| toluene (108-88-3) | Consumer | dermal | long term (systemic effects) | 226 mg/kg bw/day | |
| toluene (108-88-3) | Consumer | oral | long term (systemic effects) | 8,13 mg/kg bw/day | |
| naphtalene (91-20-3) | Worker | inhalation | long term (systemic effects) | 25 mg/m ³ | |
| naphtalene (91-20-3) | Worker | inhalation | long term (local effects) | 25 mg/m ³ | |
| naphtalene (91-20-3) | Worker | dermal | long term (systemic effects) | 3,57 mg/kg bw/day | |

8.1.4. PNEC values

For components

| Name | Exposure route | Value | Remark |
|----------------------|-----------------------------|--------------|-------------|
| toluene (108-88-3) | fresh water | 0,68 mg/L | |
| toluene (108-88-3) | fresh water sediment | 16,39 mg/L | |
| toluene (108-88-3) | marine water | 0,68 mg/L | |
| toluene (108-88-3) | marine water sediment | 16,39 mg/L | |
| toluene (108-88-3) | water treatment plant | 13,61 mg/L | |
| toluene (108-88-3) | soil | 2,89 mg/L | |
| toluene (108-88-3) | water, intermittent release | 0,68 mg/L | fresh water |
| naphtalene (91-20-3) | fresh water | 2,4 µg/L | |
| naphtalene (91-20-3) | marine water | 2,4 µg/L | |
| naphtalene (91-20-3) | water, intermittent release | 20 µg/L | fresh water |
| naphtalene (91-20-3) | water treatment plant | 2,9 mg/L | |
| naphtalene (91-20-3) | fresh water sediment | 0,0672 mg/kg | |
| naphtalene (91-20-3) | marine water sediment | 0,0672 mg/kg | |
| naphtalene (91-20-3) | soil | 0,0533 mg/kg | |

8.2. Exposure controls

8.2.1. Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Handle in accordance with good industrial hygiene and safety practice. Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not breathe vapours/aerosols. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse. Keep eyewash bottles or personal eyewash units and emergency showers available.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration. Keep away from food, drink and animal feeding stuffs.

8.2.2. Personal protective equipment

Eye and face protection

Safety glasses with side protection (EN 166).

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. Protective gloves (EN 374). The penetration time is determined by the protective glove manufacturer and must be observed. Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Appropriate materials

| Material | Thickness | Penetration Time | Remark |
|----------------------------|-----------|------------------|--------|
| Viton (fluorinated rubber) | 0,7 mm | 480 min | |

Skin protection

At high risk of skin exposure chemical suits (EN ISO 6530:2005) and boots may be required (EN ISO 20345:2012). Protective antistatic clothing EN 1149 (1:2006, 2:1998 and 3:2004, 5:2008), protective antistatic shoes (EN 20345:2012). Standard EN ISO 14116 - Limited flame spread materials Choose body protection according to the activity and possible exposure.

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Respiratory protection

In case of insufficient ventilation wear suitable respiratory protection. At elevated concentrations of vapours/aerosols in the air wear a mask (EN 140) with filter A2-P2 (EN 14387). For dust/gas/ vapor concentrations above the applicable filter limit, in case of oxygen concentrations below 17% or in vague conditions, autonomous self-contained breathing apparatus should be used, according to standard EN 137, EN 138.

Thermal hazards

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8.2.3. Environmental exposure controls

Technical measures to prevent exposure

Do not allow product to reach drains, sewage systems or ground water.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | | |
|---|------------------------|----------------------------|
| - | Physical state: | liquid |
| - | Colour: | according to specification |
| - | Odour: | odor of toluene |

Important health, safety and environmental information

| | | |
|---|--|-----------------|
| - | pH | No information. |
| - | Melting point/freezing point | No information. |
| - | Initial boiling point/boiling range | No information. |
| - | Flash point | No information. |
| - | Evaporation rate | No information. |
| - | Flammability (solid, gas) | No information. |
| - | Explosion limits (vol%) | No information. |
| - | Vapour pressure | No information. |
| - | Vapour density | No information. |
| - | Density | No information. |
| - | Solubility | No information. |
| - | Partition coefficient | No information. |
| - | Auto-ignition temperature | No information. |
| - | Decomposition temperature | No information. |
| - | Viscosity | No information. |
| - | Explosive properties | No information. |
| - | Oxidising properties | No information. |

9.2. Other information

| | | |
|---|-----------------|--|
| - | Remarks: | |
|---|-----------------|--|

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Highly flammable liquid and vapour.

10.2. Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

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10.3. Possibility of hazardous reactions

Vapours and air can form flammable or explosive mixtures.

10.4. Conditions to avoid

Protect from heat, direct sunlight, open fire, sparks.

10.5. Incompatible materials

Oxidants.

10.6. Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released. Carbon dioxide; Carbon monoxide.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

(a) Acute toxicity

| Name | Exposure route | Type | Species | Time | Value | Method | Remark |
|----------------------|----------------------|------------------|---------|------|-----------------|----------|--------|
| toluene (108-88-3) | oral | LD ₅₀ | rat | | 5580 mg/kg | | |
| toluene (108-88-3) | inhalation | LC ₅₀ | rat | 4 h | 25,7 mg/l | OECD 403 | |
| toluene (108-88-3) | dermal | LD ₅₀ | rabbit | | > 5000 mg/kg | | |
| naphtalene (91-20-3) | oral | LD ₅₀ | mouse | | 533 – 710 mg/kg | OECD 401 | |
| naphtalene (91-20-3) | inhalation (vapours) | LC ₅₀ | rat | 4 h | > 0,4 mg/l | OECD 403 | |
| naphtalene (91-20-3) | dermal | LD ₅₀ | rabbit | | 20000 mg/kg | | |

(b) Skin corrosion/irritation

| Name | Species | Time | Result | Method | Remark |
|----------------------|---------|------|---------------|----------|--------|
| toluene (108-88-3) | rabbit | 4 h | Irritating. | | |
| naphtalene (91-20-3) | rabbit | | Non-irritant. | OECD 404 | |

Additional information: Causes skin irritation.

(c) Serious eye damage/irritation

| Name | Species | Time | Result | Method | Remark |
|----------------------|---------|------|------------------|----------|--------|
| toluene (108-88-3) | rabbit | | Mild irritating. | OECD 405 | |
| naphtalene (91-20-3) | rabbit | 24 h | Non-irritant. | | |

Additional information: Causes serious eye irritation.

(d) Respiratory or skin sensitisation

| Name | Exposure route | Species | Time | Result | Method | Remark |
|----------------------|----------------|------------|------|------------------|---------------|-------------------|
| toluene (108-88-3) | dermal | guinea pig | | Non sensitising. | EU Method B.6 | maximisation test |
| naphtalene (91-20-3) | dermal | guinea pig | | Negative. | OECD 406 | maximisation test |

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(e) (Germ cell) mutagenicity

| Name | Type | Species | Time | Result | Method | Remark |
|----------------------|-----------------------|------------------------------------|------|-----------|-----------------------------|--------|
| toluene (108-88-3) | in-vitro mutagenicity | mouse (lymphoma L5178Y) | | Negative. | | |
| toluene (108-88-3) | Genotoxicity | Salmonella typhimurium | | Negative. | Ames test | |
| toluene (108-88-3) | in-vivo mutagenicity | rat (bone marrow) | | Negative. | | |
| naphtalene (91-20-3) | in-vitro mutagenicity | Bacteria (<i>S. typhimurium</i>) | | Negative. | Ames test | |
| naphtalene (91-20-3) | in-vitro mutagenicity | Chinese hamster ovary | | Positive. | Chromosomal aberration test | |
| naphtalene (91-20-3) | in-vivo mutagenicity | rat | | Negative. | OECD 486 | |
| naphtalene (91-20-3) | in-vivo mutagenicity | mouse (bone marrow) | | Negative. | | |

(f) Carcinogenicity

| Name | Exposure route | Type | Species | Time | Value | Result | Method | Remark |
|----------------------|----------------|------|---------|------|-------|---|--------|--------|
| toluene (108-88-3) | | | | | | The chemical is not classified as carcinogenic. | | |
| naphtalene (91-20-3) | | | | | | Suspected of causing cancer. | | |

(g) Reproductive toxicity

| Name | Reproductive toxicity type | Type | Species | Time | Value | Result | Method | Remark |
|--------------------|----------------------------|------|---------|------|-------|---|--------|--------|
| toluene (108-88-3) | | | | | | Suspected of damaging the unborn child. | | |

Summary of evaluation of the CMR properties

Suspected of causing cancer. Suspected of damaging the unborn child.

(h) STOT-single exposure

| Name | Exposure route | Type | Species | Time | Organ | Value | Result | Method | Remark |
|----------------------|----------------|------|---------|------|-------|-------|--|--------|--------|
| toluene (108-88-3) | inhalation | - | | | | | May cause drowsiness or dizziness. | | |
| toluene (108-88-3) | - | | | | | | Drowsiness, irritant effects, dizziness, cramps, headache, nausea, vomiting, circulatory collapse, drowsiness, inebriation, unconsciousness, respiratory arrest, CNS disorders, respiratory paralysis, death | | |
| naphtalene (91-20-3) | - | | | | | | Absorption through the body leads to the formation of methaemoglobin, which in high concentrations causes cyanosis. The latency can be 2 to 4 hours or longer. Naphthalene is toxic to the retina, and the effect of systemic absorption of its vapors in a concentration of more than 15ppm includes: cataracts, optic neuritis, corneal injury, eye irritation. Ingestion can cause the following symptoms: hemolytic anemia, hemoglobinuria, nausea, headache, vomiting, gastrointestinal disorders, convulsions, anemia, kidney damage are possible, seizures, coma. | | |

Additional information: STOT-(single exposure): May cause drowsiness or dizziness.

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(i) STOT-repeated exposure

| Name | Exposure route | Type | Species | Time | Organ | Value | Result | Method | Remark |
|----------------------|----------------|-------|---------|---------|-------|------------|--|--------|--------|
| toluene (108-88-3) | - | - | | | | | May cause damage to organs through prolonged or repeated exposure. | | |
| naphtalene (91-20-3) | oral | NOAEL | mouse | 90 days | | 100 mg/kg | | | |
| naphtalene (91-20-3) | oral | NOAEL | rat | 91 days | | 200 mg/kg | | | |
| naphtalene (91-20-3) | oral | LOAEL | rat | 91 days | | 400 mg/kg | | | |
| naphtalene (91-20-3) | dermal | NOAEL | rat | 90 days | | 1000 mg/kg | | | |

Additional information: May cause damage to organs through prolonged or repeated exposure.

(j) Aspiration hazard

| Name | Result | Method | Remark |
|--------------------|--------------------------------|--------|--------|
| toluene (108-88-3) | ASPIRATION HAZARD - Category 1 | | |

Additional information: May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Acute (short-term) toxicity

For components

| Substance (CAS Nr.) | Type | Value | Exposure time | Species | Organism | Method | Remark |
|----------------------|------------------|-----------|---------------|-----------|--|----------|--------|
| toluene (108-88-3) | LC ₅₀ | 5,5 mg/L | 96 h | fish | <i>Oncorhynchus kisutch</i> | | |
| | EC ₅₀ | 3,78 mg/L | 48 h | crustacea | <i>Ceriodaphnia dubia</i> | | |
| | EC ₅₀ | 84 mg/L | 24 h | bacteria | | | |
| naphtalene (91-20-3) | LC ₅₀ | 7,9 mg/L | 96 h | fish | <i>Pimephales promelas</i> | OECD 203 | |
| | EC ₅₀ | 2,16 mg/L | 48 h | crustacea | <i>Daphnia magna</i> | OECD 202 | |
| | LC ₅₀ | 1,6 mg/L | 96 h | fish | <i>Oncorhynchus mykiss</i> | OECD 203 | |
| | EC ₅₀ | 2,96 mg/L | 4 h | algae | <i>Pseudokirchneriella subcapitata</i> | | |

12.1.2. Chronic (long-term) toxicity

No information.

12.2. Persistence and degradability

12.2.1. Abiotic degradation, physical- and photo-chemical elimination

No information.

12.2.2. Biodegradation

For components

| Substance (CAS Nr.) | Type | Rate | Time | Evaluation | Method | Remark |
|----------------------|------------------|-----------|---------|---------------------------|------------|--------|
| toluene (108-88-3) | biodegradability | 86 % | 20 days | readily biodegradable | | |
| toluene (108-88-3) | ThOD | 3130 mg/g | | | | |
| naphtalene (91-20-3) | biodegradability | 2 % | 28 days | not readily biodegradable | OECD 302 C | |

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12.3. Bioaccumulative potential

12.3.1. Partition coefficient

For components

| Substance (CAS Nr.) | Media | Value | Temperature | pH | Concentration | Method |
|----------------------|---------|-------|-------------|----|---------------|--------|
| naphtalene (91-20-3) | Log Pow | 3,4 | | | | |

12.3.2. Bioconcentration factor (BCF)

For components

| Substance (CAS Nr.) | species | Organism | Value | Duration | Evaluation | Method | Remark |
|----------------------|---------|------------------------|------------|----------|------------|----------|--------|
| toluene (108-88-3) | BCF | | 90 | | | | |
| naphtalene (91-20-3) | BCF | <i>Cyprinus carpio</i> | 36,5 – 168 | | | OECD 305 | |

12.4. Mobility in soil

12.4.1. Known or predicted distribution to environmental compartments

No information.

12.4.2. Surface tension

No information.

12.4.3. Adsorption/Desorption

No information.

12.5. Results of PBT and vPvB assessment

The product does not contain any PBT or vPvB substances in percentages greater than 0.1%.

12.6. Other adverse effects

No information.

12.7. Additional information

For product

Toxic to aquatic life with long lasting effects.

Water hazard class (WGK): 3 (Self-assessment), very hazardous for water.

Do not allow to reach ground water, water courses or sewage system.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product / Packaging disposal

Waste chemical

Dispose of in accordance with applicable waste disposal regulation. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Waste is suitable for incineration in authorised incineration plants. Do not allow product to reach drains/sewage systems.

Packaging

Uncleaned containers are classified as hazardous waste - they should be handled in the same manner as the contents. Deliver completely emptied containers to approved waste disposal authorities. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Uncleaned containers should not be perforated, cut or welded.

13.1.2. Waste treatment-relevant information

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13.1.3. Sewage disposal-relevant information

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13.1.4. Other disposal recommendations

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SECTION 14. TRANSPORT INFORMATION

14.1. UN number

UN 1993

14.2. UN proper shipping name

FLAMMABLE LIQUID, N.O.S. (toluene)

IMDG name: FLAMMABLE LIQUID, N.O.S. (toluene, naphtalene)

14.3. Transport hazard class(es)

3

14.4. Packing group

II

14.5. Environmental hazards

Additional labeling: ENVIRONMENTALLY HAZARDOUS

IMDG: MARINE POLLUTANT

14.6. Special precautions for user

Limited quantities

1 L

Tunnel restriction code

(D/E)

IMDG EmS

F-E, S-E

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

Goods may not be carried in bulk in bulk containers, containers or vehicles.



SECTION 15. REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2015/830)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

15.1.1. Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Not applicable.

15.1.2. Special instructions

Observe the regulations on employment and protection against dangerous substances for young people, pregnant women and nursing mothers.

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15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

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SECTION 16. OTHER INFORMATION

Indication of changes

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Abbreviations and acronyms

ATE - Acute Toxicity Estimate
ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC₅₀ - Lethal Concentration to 50 % of a test population
LD₅₀ - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment

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(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data

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List of relevant H phrases

H225 Highly flammable liquid and vapour.
H228 Flammable solid.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer .
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure .
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.