

Safety Data Sheet

according to Regulation (EC) No 1907/2006

984 Injektor Direkt-Schutz 200 ml DLI

Revision date: 15.10.2020

Product code: 11AMF98400200DLI

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

984 Injektor Direkt-Schutz 200 ml DLI

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

Additive

1.3. Details of the supplier of the safety data sheet

| | | |
|---------------|--------------------------------|-------------------------------|
| Company name: | TUNAP GmbH & Co. KG | |
| Street: | Buergermeister-Seidl-Strasse 2 | |
| Place: | D-82515 Wolfratshausen | |
| Telephone: | +49 (0) 8171/1600-0 | Telefax: +49 (0) 8171/1600-40 |
| e-mail: | sdb@tunap.com | |
| Internet: | www.tunap.com | |

1.4. Emergency telephone number: 111 NHS (National Health Service)**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Flammable liquid: Flam. Liq. 3

Aspiration hazard: Asp. Tox. 1

Serious eye damage/eye irritation: Eye Dam. 1

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Flammable liquid and vapour.

May be fatal if swallowed and enters airways.

Causes serious eye damage.

Harmful to aquatic life with long lasting effects.

2.2. Label elements**Regulation (EC) No. 1272/2008****Hazard components for labelling**

Naphtha Petroleum Hydro treated Heavy

2-methylpropan-1-ol; iso-butanol

Signal word: Danger**Pictograms:****Hazard statements**

| | |
|------|--|
| H226 | Flammable liquid and vapour. |
| H304 | May be fatal if swallowed and enters airways. |
| H318 | Causes serious eye damage. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statements

| | |
|------|---|
| P102 | Keep out of reach of children. |
| P101 | If medical advice is needed, have product container or label at hand. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No |

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| | |
|----------------|--|
| P260 | smoking. |
| P280 | Do not breathe vapours. |
| P273 | Wear eye protection. |
| P302+P352 | Avoid release to the environment. |
| P305+P351+P338 | IF ON SKIN: Wash with plenty of soap and water. |
| | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P337+P313 | If eye irritation persists: Get medical advice/attention. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P314 | Get medical advice/attention if you feel unwell. |
| P501 | Dispose of contents/container according to the official regulations. |

Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

| CAS No | Chemical name | Quantity |
|------------|--|------------------|
| | EC No | Index No |
| | REACH No | |
| | GHS Classification | |
| 64742-48-9 | Naphtha Petroleum Hydro treated Heavy | 50 - <= 100 % |
| | 918-481-9 | 01-2119457273-39 |
| | Asp. Tox. 1; H304 EUH066 | |
| 78-83-1 | 2-methylpropan-1-ol; iso-butanol | 5 - < 10 % |
| | 201-148-0 | 603-108-00-1 |
| | Flam. Liq. 3, Skin Irrit. 2, Eye Dam. 1, STOT SE 3, STOT SE 3; H226 H315 H318 H335 H336 | |
| 27247-96-7 | 2-Ethylhexyl nitrate | 5 - < 10 % |
| | 248-363-6 | 01-2119539586-27 |
| | Acute Tox. 4, Acute Tox. 4, Acute Tox. 4, Aquatic Chronic 2; H332 H312 H302 H411 EUH044 EUH066 | |
| 64742-48-9 | Naphtha Petroleum Hydro treated Heavy | 1 - < 3 % |
| | 918-481-9 | |
| | Flam. Liq. 3, Asp. Tox. 1; H226 H304 | |
| 128-37-0 | 2,6-di-tert-butyl-4-kresol | 1 - < 3 % |
| | 204-881-4 | 01-2119480433-40 |
| | Aquatic Chronic 1; H410 | |
| 104-76-7 | 2-Ethylhexan-1-ol | 1 - < 3 % |
| | 203-234-3 | 01-2119487289-20 |
| | Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H332 H315 H319 H335 | |

Full text of H and EUH statements: see section 16.

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Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity |
|------------|-----------|--|---------------|
| | | Specific Conc. Limits, M-factors and ATE | |
| 64742-48-9 | 918-481-9 | Naphtha Petroleum Hydro treated Heavy | 50 - <= 100 % |
| | | inhalation: LC50 = 4951 mg/l (vapours); dermal: LD50 = >3160 mg/kg; oral: LD50 = >8000 mg/kg | |
| 78-83-1 | 201-148-0 | 2-methylpropan-1-ol; iso-butanol | 5 - < 10 % |
| | | inhalation: LC50 = > 24 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2830 mg/kg | |
| 27247-96-7 | 248-363-6 | 2-Ethylhexyl nitrate | 5 - < 10 % |
| | | inhalation: LC50 = 11 mg/l (vapours); dermal: LD50 = >4820 mg/kg; oral: LD50 = >9640 mg/kg | |
| 64742-48-9 | 918-481-9 | Naphtha Petroleum Hydro treated Heavy | 1 - < 3 % |
| | | inhalation: LC50 = > 4951 mg/l (vapours); dermal: LD50 = > 3160 mg/kg; oral: LD50 = > 5000 mg/kg | |
| 104-76-7 | 203-234-3 | 2-Ethylhexan-1-ol | 1 - < 3 % |
| | | inhalation: LC50 = 11 mg/l (vapours); dermal: LD50 = > 3000 mg/kg; oral: LD50 = 2047 mg/kg | |

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

After inhalation

Remove person to fresh air and keep comfortable for breathing. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with skin

Wash with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. In all cases of doubt, or when symptoms persist, seek medical advice.

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

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

Headache, nausea, dizziness, fatigue, skin irritation

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

Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO₂). Extinguishing powder.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Incomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO₂, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.

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5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

6.3. Methods and material for containment and cleaning up

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Observe instructions for use.

Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

When using do not eat, drink, smoke, sniff.

Wear personal protection equipment (refer to section 8).

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking.

Further information on handling

Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Observe legal regulations and provisions.

Hints on joint storage

Do not store together with: Oxidizing agents. Pyrophoric or self-heating substances. Food and feedingstuffs.

Further information on storage conditions

Store in a cool dry place. Observe legal regulations and provisions.

7.3. Specific end use(s)

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

| CAS No | Substance | ppm | mg/m ³ | fibres/ml | Category | Origin |
|----------|----------------------------|-----|-------------------|-----------|---------------|--------|
| 128-37-0 | 2,6-Di-tert-butyl-p-cresol | - | 10 | | TWA (8 h) | WEL |
| 104-76-7 | 2-ethylhexan-1-ol | 1 | 5.4 | | TWA (8 h) | WEL |
| 78-83-1 | 2-Methylpropan-1-ol | 50 | 154 | | TWA (8 h) | WEL |
| | | 75 | 231 | | STEL (15 min) | WEL |

DNEL/DMEL values

| CAS No | Substance | Exposure route | Effect | Value |
|--------------------------|----------------------|----------------|----------|------------------------|
| 27247-96-7 | 2-Ethylhexyl nitrate | | | |
| Worker DNEL, long-term | | inhalation | systemic | 0,35 mg/m ³ |
| Worker DNEL, long-term | | dermal | systemic | 1 mg/kg bw/day |
| Consumer DNEL, long-term | | dermal | systemic | 0,52 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 0,025 mg/kg bw/day |

PNEC values

| CAS No | Substance | Value |
|--|----------------------|----------------|
| 27247-96-7 | 2-Ethylhexyl nitrate | |
| Environmental compartment | | |
| Freshwater | | 0,0008 mg/l |
| Marine water | | 0,00008 mg/l |
| Freshwater sediment | | 0,00074 mg/kg |
| Marine sediment | | 0,00074 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 10 mg/l |
| Soil | | 0,000191 mg/kg |

Additional advice on limit values

- a no restriction
- b End of exposure or end of shift
- c at long-term exposure:
- d before next shift

blood (B)
Urine (U)

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures

Avoid exposure. Wear suitable protective clothing. Draw up and observe skin protection programme.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses.

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DIN EN 166

Hand protection

Protect skin by using skin protective cream. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable material: NBR (Nitrile rubber) Breakthrough time: 480min

Thickness of the glove material 0,45 mm

EN ISO 374

Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

When exceeding the relevant workplace exposure limits, note the following:

Suitable respiratory protective equipment: Combination filter device (DIN EN 141)..

Filtering device with filter or ventilator filtering device of type: A

Observe the wear time limits as specified by the manufacturer.

Observe legal regulations and provisions.

Environmental exposure controls

Observe legal regulations and provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-----------------|--------------|
| Physical state: | liquid |
| Colour: | green |
| Odour: | solvent like |

pH-Value (at 20 °C):

Test method

DIN 19268

Changes in the physical state

| | |
|----------------|----------------|
| Melting point: | not determined |
|----------------|----------------|

| | |
|---|--------|
| Boiling point or initial boiling point and boiling range: | 100 °C |
|---|--------|

| | |
|--------------------|---------------------------|
| Sublimation point: | No information available. |
|--------------------|---------------------------|

| | |
|------------------|---------------------------|
| Softening point: | No information available. |
|------------------|---------------------------|

| | |
|---|---------------------------|
| : | No information available. |
|---|---------------------------|

| | | |
|--------------|-------|----------|
| Flash point: | 33 °C | ISO 3679 |
|--------------|-------|----------|

Flammability

| | |
|---------------|----------------|
| Solid/liquid: | not applicable |
|---------------|----------------|

| | |
|------|----------------|
| Gas: | not applicable |
|------|----------------|

| | |
|-------------------------|------------|
| Lower explosion limits: | 0,5 vol. % |
|-------------------------|------------|

| | |
|-------------------------|----------|
| Upper explosion limits: | 7 vol. % |
|-------------------------|----------|

| | |
|----------------------------|--------|
| Auto-ignition temperature: | 215 °C |
|----------------------------|--------|

Self-ignition temperature

| | |
|--------|----------------|
| Solid: | not applicable |
|--------|----------------|

| | |
|------|----------------|
| Gas: | not applicable |
|------|----------------|

| | |
|----------------------------|----------------|
| Decomposition temperature: | not determined |
|----------------------------|----------------|

Oxidizing properties

Not oxidising.

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| | |
|--|--|
| Vapour pressure: | not determined |
| Density (at 20 °C): | 0,8 g/cm ³ DIN 51757 |
| Water solubility: | The study does not need to be conducted because the substance is known to be insoluble in water. |
| Solubility in other solvents | |
| not determined | |
| Partition coefficient n-octanol/water: | not determined |
| Viscosity / dynamic: | No information available. DIN 53019-1 |
| Viscosity / kinematic: (at 40 °C) | < 7 mm ² /s DIN EN ISO 3104 |
| Flow time: (at 20 °C) | No information available. DIN EN ISO 2431 |
| Relative vapour density: | not determined |
| Evaporation rate: | not determined |
| Solvent separation test: | No information available. |
| Solvent content: | No information available. |

9.2. Other information

Solid content: not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

Flammable.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharges.

10.5. Incompatible materials

Oxidizing agents. Pyrophoric or self-heating substances.

10.6. Hazardous decomposition productsIncomplete combustion and thermolysis gases of different toxicity can occur. In the case of hydrocarbonaceous products such as CO, CO₂, aldehydes and soot. These can be very dangerous if they are inhaled in high concentrations or in enclosed spaces.**Further information**

Do not mix with other chemicals.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Toxicokinetics, metabolism and distribution**

No information available.

Acute toxicity

Based on available data, the classification criteria are not met.

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| CAS No | Chemical name | | | | |
|------------|---------------------------------------|----------------------|---------|--------|--------|
| | Exposure route | Dose | Species | Source | Method |
| 64742-48-9 | Naphtha Petroleum Hydro treated Heavy | | | | |
| | oral | LD50 >8000 mg/kg | Rat | | |
| | dermal | LD50 >3160 mg/kg | Rabbit | | |
| | inhalation (4 h) vapour | LC50 4951 mg/l | Rat | | |
| 78-83-1 | 2-methylpropan-1-ol; iso-butanol | | | | |
| | oral | LD50 > 2830 mg/kg | Rat | | |
| | dermal | LD50 > 2000 mg/kg | Rat | | |
| | inhalation (4 h) vapour | LC50 > 24 mg/l | Rat | | |
| 27247-96-7 | 2-Ethylhexyl nitrate | | | | |
| | oral | LD50 >9640 mg/kg | Rat | | |
| | dermal | LD50 >4820 mg/kg | Rabbit | | |
| | inhalation (4 h) vapour | LC50 11 mg/l | Rat | | |
| 64742-48-9 | Naphtha Petroleum Hydro treated Heavy | | | | |
| | oral | LD50 > 5000 mg/kg | Rat | | |
| | dermal | LD50 > 3160 mg/kg | Rabbit | | |
| | inhalation (4 h) vapour | LC50 > 4951 mg/l | Rat | | |
| 104-76-7 | 2-Ethylhexan-1-ol | | | | |
| | oral | LD50 2047 mg/kg | Rat | | |
| | dermal | LD50 > 3000 mg/kg | Rat | | |
| | inhalation (4 h) vapour | LC50 11 mg/l | Rat | | |

Irritation and corrosivity

Causes serious eye damage.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

No indications of human carcinogenicity exist.

No indications of human germ cell mutagenicity exist.

No indications of human reproductive toxicity exist.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Repeated exposure may cause skin dryness or cracking.

Aspiration hazard

May be fatal if swallowed and enters airways.

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Specific effects in experiment on an animal

No information available.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

| CAS No | Chemical name | | | | | |
|------------|---------------------------------------|-------------------|-----------|---|---------------------|--------------------|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 64742-48-9 | Naphtha Petroleum Hydro treated Heavy | | | | | |
| | Acute fish toxicity | LC50 >1000 mg/l | 96 h | Oncorhynchus mykiss (Rainbow trout) | | |
| | Acute algae toxicity | ErC50 >1000 mg/l | 96 h | Scenedesmus subspicatus | | |
| | Acute crustacea toxicity | EC50 >1000 mg/l | 48 h | Daphnia magna | | |
| 78-83-1 | 2-methylpropan-1-ol; iso-butanol | | | | | |
| | Acute fish toxicity | LC50 1430 mg/l | 96 h | Pimephales promelas | | |
| | Acute algae toxicity | ErC50 1250 mg/l | | Desmodesmus subspicatus | | |
| | Acute crustacea toxicity | EC50 1439 mg/l | 48 h | Daphnia magna | | |
| 27247-96-7 | 2-Ethylhexyl nitrate | | | | | |
| | Acute fish toxicity | LC50 2 mg/l | 96 h | Danio rerio | Study report (2010) | OECD Guideline 203 |
| | Acute algae toxicity | ErC50 > 12,6 mg/l | 72 h | Pseudokirchneriella subcapitata | Study report (1998) | OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 > 12,6 mg/l | 48 h | Daphnia magna | Study report (1998) | OECD Guideline 202 |
| | Acute bacteria toxicity | (> 1000 mg/l) | 3 h | activated sludge of a predominantly domestic sewage | Study report (2010) | OECD Guideline 209 |
| 64742-48-9 | Naphtha Petroleum Hydro treated Heavy | | | | | |
| | Acute fish toxicity | LC50 >1000 mg/l | 96 h | Oncorhynchus mykiss (Rainbow trout) | | |
| | Acute algae toxicity | ErC50 >1000 mg/l | 96 h | Pseudokirchneriella subcapitata | | |
| | Acute crustacea toxicity | EC50 >1000 mg/l | 48 h | Daphnia magna | | |
| 104-76-7 | 2-Ethylhexan-1-ol | | | | | |
| | Acute fish toxicity | LC50 17,1 mg/l | 96 h | Leuciscus idus (golden orfe) | | |
| | Acute algae toxicity | ErC50 11,5 mg/l | 72 h | Scenedesmus subspicatus | | |
| | Acute crustacea toxicity | EC50 39 mg/l | 48 h | Daphnia magna | | |

12.2. Persistence and degradability

There are no data available on the mixture itself. AOX (mg/l): 0

12.3. Bioaccumulative potential

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There are no data available on the mixture itself.

Partition coefficient n-octanol/water

| CAS No | Chemical name | Log Pow |
|------------|----------------------------------|---------|
| 78-83-1 | 2-methylpropan-1-ol; iso-butanol | 0,79 |
| 27247-96-7 | 2-Ethylhexyl nitrate | 5,24 |
| 104-76-7 | 2-Ethylhexan-1-ol | 2,9 |

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the criteria for classification as PBT or vPvB.

12.7. Other adverse effects

No information available.

Further information

Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

070704 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fine chemicals and chemical products not otherwise specified; other organic solvents, washing liquids and mother liquors; hazardous waste

List of Wastes Code - used product

070704 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fine chemicals and chemical products not otherwise specified; other organic solvents, washing liquids and mother liquors; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Water (with cleaning agent). Completely emptied packages can be recycled.

SECTION 14: Transport information**Land transport (ADR/RID)**

| | |
|--|--|
| 14.1. UN number: | UN 1993 |
| 14.2. UN proper shipping name: | FLAMMABLE LIQUID, N.O.S. (iso-butanol) |
| 14.3. Transport hazard class(es): | 3 |
| 14.4. Packing group: | III |
| Hazard label: | 3 |
| Classification code: | F1 |
| Special Provisions: | 274 601 640E |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |
| Transport category: | 3 |
| Hazard No: | 30 |

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Tunnel restriction code: D/E

Inland waterways transport (ADN)

14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (iso-butanol)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3
Classification code: F1
Special Provisions: 274 601 640E
Limited quantity: 5 L
Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (iso-butanol)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3
Marine pollutant: no
Special Provisions: 223, 274, 955
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-E, S-E

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (iso-butanol)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3
Special Provisions: A3
Limited quantity Passenger: 10 L
Passenger LQ: Y344
Excepted quantity: E1
IATA-packing instructions - Passenger: 355
IATA-max. quantity - Passenger: 60 L
IATA-packing instructions - Cargo: 366
IATA-max. quantity - Cargo: 220 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Combustible liquids.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 28

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2010/75/EU (VOC): No information available.

2004/42/EC (VOC): No information available.

Additional information

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National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 2 - obviously hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 8,9,12,16.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA: International Air Transport Association

IMDG: International Maritime Code for Dangerous Goods

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL/DMEL: Derived No Effect Level / Derived Minimal Effect Level

WEL (UK): Workplace Exposure Limits

TWA (EC): Time-Weighted Average

ATE: Acute Toxicity Estimate

STEL (EC) Short Term Exposure Limit

LC50: Lethal Concentration

EC50: half maximal Effective Concentration

ErC50: means EC50 in terms of reduction of growth rate

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

| Classification | Classification procedure |
|-------------------------|--------------------------|
| Flam. Liq. 3; H226 | On basis of test data |
| Asp. Tox. 1; H304 | Calculation method |
| Eye Dam. 1; H318 | Calculation method |
| Aquatic Chronic 3; H412 | Calculation method |

Relevant H and EUH statements (number and full text)

| | |
|------|---|
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H312 | Harmful in contact with skin. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |

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| | |
|--------|---|
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |
| EUH044 | Risk of explosion if heated under confinement. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

Further Information

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]:
Calculation method.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)