

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Refractive index standard ROTI®Calipure 1,46768 (20 °C)

article number: **3120**
Version: **2.0 en**
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification of the substance **Refractive index standard ROTI®Calipure 1,46768 (20 °C)**

Article number 3120

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

Relevant identified uses: Laboratory and analytical use
Laboratory chemical

Uses advised against: Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone:+49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: :Department Health, Safety and Environment

e-mail (competent person): **sicherheit@carlroth.de**

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|---|-----------|----------------------|--------------|---------|
| National Poisons Information Service City Hospital | Dudley Rd | B187QH Birmingham | 844 892 0111 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|---|-----------|---------------------------|------------------|
| 2.6 | Flammable liquid | 2 | Flam. Liq. 2 | H225 |
| 3.2 | Skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 3.7 | Reproductive toxicity | 2 | Repr. 2 | H361d |
| 3.8D | Specific target organ toxicity - single exposure (narcotic effects, drowsiness) | 3 | STOT SE 3 | H336 |

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| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|---|-----------|---------------------------|------------------|
| 3.9 | Specific target organ toxicity - repeated exposure | 2 | STOT RE 2 | H373 |
| 3.10 | Aspiration hazard | 1 | Asp. Tox. 1 | H304 |
| 4.1A | Hazardous to the aquatic environment - acute hazard | 1 | Aquatic Acute 1 | H400 |
| 4.1C | Hazardous to the aquatic environment - chronic hazard | 1 | Aquatic Chronic 1 | H410 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure. The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

Signal word

Danger

Pictograms

GHS02, GHS07,
GHS08, GHS09



Hazard statements

H225 Highly flammable liquid and vapour
H304 May be fatal if swallowed and enters airways
H315 Causes skin irritation
H336 May cause drowsiness or dizziness
H361d Suspected of damaging the unborn child
H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure (if inhaled)
H410 Very toxic to aquatic life with long lasting effects

Precautionary statements

Precautionary statements - prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P273 Avoid release to the environment
P280 Wear protective gloves/eye protection/face protection

Precautionary statements - response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor
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

For professional users only

Hazardous ingredients for labelling: Toluene, n-Heptane

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2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
|-------------------|--|---------|--|------------|-------------------------|
| Toluene | CAS No 108-88-3 EC No 203-625-9 Index No 601-021-00-3 | ≥ 50 | Flam. Liq. 2 / H225 Skin Irrit. 2 / H315 Repr. 2 / H361d STOT SE 3 / H336 STOT RE 2 / H373 Asp. Tox. 1 / H304 Aquatic Chronic 3 / H412 | | GHS-HC IOELV |
| n-Heptane | CAS No 142-82-5 EC No 205-563-8 Index No 601-008-00-2 | 25 – 50 | Flam. Liq. 2 / H225 Skin Irrit. 2 / H315 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 | | C(a) GHS-HC IOELV |

Notes

C(a): Mixture of isomers

GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)

IOELV: Substance with a community indicative occupational exposure limit value

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

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Following ingestion

Call a physician immediately. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Observe aspiration hazard if vomiting occurs.

4.2 Most important symptoms and effects, both acute and delayed

Aspiration hazard, Irritation, Dizziness, Drowsiness, Narcosis, Vomiting, Headache, Vertigo

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water spray, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours may form explosive mixtures with air.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂), May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. Danger of explosion.

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6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation. Avoid exposure.

Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge. Due to danger of explosion, prevent leakage

of vapours into cellars, flues and ditches.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Keep in a cool place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Ground/bond container and receiving equipment.

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 2 – 8 °C

7.3 Specific end use(s)

No information available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|----------------------------------|----------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|----------|------------|
| EU | toluene | 108-88-3 | IOELV | 50 | 192 | 100 | 384 | | | H | 2006/15/EC |
| EU | n-heptane | 142-82-5 | IOELV | 500 | 2.085 | | | | | | 2000/39/EC |
| GB | hydrocarbon mixture (RCP method) | | WEL | | 250 | | 500 | | | | EH40/2005 |
| GB | toluene | 108-88-3 | WEL | 50 | 191 | 100 | 384 | | | | EH40/2005 |
| GB | n-heptane | 142-82-5 | WEL | 500 | 2.085 | | | | | | EH40/2005 |

Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur

H Absorbed through the skin

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs of components of the mixture

| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
|-------------------|----------|-----------|-------------------------|------------------------------------|-------------------|----------------------------|
| Toluene | 108-88-3 | DNEL | 192 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Toluene | 108-88-3 | DNEL | 384 mg/m ³ | human, inhalatory | worker (industry) | acute - systemic effects |
| Toluene | 108-88-3 | DNEL | 192 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| Toluene | 108-88-3 | DNEL | 384 mg/m ³ | human, inhalatory | worker (industry) | acute - local effects |
| Toluene | 108-88-3 | DNEL | 384 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| n-Heptane | 142-82-5 | DNEL | 2.085 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| n-Heptane | 142-82-5 | DNEL | 300 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

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| Relevant PNECs of components of the mixture | | | | | | |
|---|----------|-----------|-----------------|-----------------------|------------------------------|------------------------------|
| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
| Toluene | 108-88-3 | PNEC | 0,68 mg/l | aquatic organisms | freshwater | short-term (single instance) |
| Toluene | 108-88-3 | PNEC | 0,68 mg/l | aquatic organisms | marine water | short-term (single instance) |
| Toluene | 108-88-3 | PNEC | 13,61 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Toluene | 108-88-3 | PNEC | 16,39 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Toluene | 108-88-3 | PNEC | 16,39 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Toluene | 108-88-3 | PNEC | 2,89 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

FKM (fluoro rubber)

• material thickness

0,4 mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

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• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Flame-retardant protective clothing.

Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state | liquid |
| Colour | acc. to product description |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | ~98 °C at 1.013 hPa |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | 35 g/m ³ (LEL) - 300 g/m ³ (UEL) / 1,1 vol% (LEL) - 7 vol% (UEL) |
| Flash point | -4 °C |
| Auto-ignition temperature | 215 °C |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| <u>Solubility(ies)</u> | |
| Water solubility | not determined |
| <u>Partition coefficient</u> | |
| Partition coefficient n-octanol/water (log value): | this information is not available |
| Vapour pressure | 48 kPa at 20 °C |
| <u>Density and/or relative density</u> | |
| Density | 0,832 g/cm ³ at 20 °C |
| Relative vapour density | information on this property is not available |

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Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard classes: There is no additional information.

Other safety characteristics:

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SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). Risk of ignition. Vapours may form explosive mixtures with air.

If heated

Risk of ignition.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Strong acid, Chlorine, Phosphorus, Nitric acid, Acetic acid, Nitro compound, Halogenated hydrocarbons, Perchlorates, Nitrogen oxides (NOx)

10.4 Conditions to avoid

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

10.5 Incompatible materials

Rubber articles, different plastics

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Shall not be classified as acutely toxic.

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| Acute toxicity of components of the mixture | | | | | |
|---|----------|--------------------|----------|----------------|---------|
| Name of substance | CAS No | Exposure route | Endpoint | Value | Species |
| Toluene | 108-88-3 | oral | LD50 | 5.580 mg/kg | rat |
| Toluene | 108-88-3 | inhalation: vapour | LC50 | 28,1 mg/l/4h | rat |
| Toluene | 108-88-3 | dermal | LD50 | >5.000 mg/kg | rabbit |
| n-Heptane | 142-82-5 | oral | LD50 | >5.000 mg/kg | rat |
| n-Heptane | 142-82-5 | inhalation: vapour | LC50 | >29,29 mg/l/4h | rat |
| n-Heptane | 142-82-5 | dermal | LD50 | >2.000 mg/kg | rabbit |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

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

| Hazard category | Target organ | Exposure route |
|-----------------|------------------------|----------------|
| 2 | central nervous system | if inhaled |

Aspiration hazard

May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

vomiting, aspiration hazard

• If in eyes

causes slight to moderate irritation

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• If inhaled

vertigo, headache, fatigue, narcosis

• If on skin

Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation)

• Other information

none

11.2 Endocrine disrupting properties

None of the ingredients are listed.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
|-------------------|----------|----------|-----------|-----------------------|---------------|
| Toluene | 108-88-3 | LC50 | 5,5 mg/l | fish | 96 h |
| Toluene | 108-88-3 | EC50 | 84 mg/l | microorganisms | 24 h |
| n-Heptane | 142-82-5 | EC50 | 0,64 mg/l | aquatic invertebrates | 48 h |

Aquatic toxicity (chronic) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
|-------------------|----------|----------|-----------|-----------------------|---------------|
| Toluene | 108-88-3 | LC50 | 3,78 mg/l | aquatic invertebrates | 2 d |
| Toluene | 108-88-3 | EC50 | 3,23 mg/l | aquatic invertebrates | 7 d |
| n-Heptane | 142-82-5 | EC50 | 0,23 mg/l | aquatic invertebrates | 21 d |

Biodegradation

Data are not available.

12.2 Process of degradability

Degradability of components of the mixture

| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
|-------------------|----------|------------------|------------------|------|--------|--------|
| Toluene | 108-88-3 | biotic/abiotic | 86 % | 20 d | | IUCLID |
| n-Heptane | 142-82-5 | oxygen depletion | 28,2 % | 2 d | | ECHA |

12.3 Bioaccumulative potential

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Data are not available.

| Bioaccumulative potential of components of the mixture | | | | |
|--|----------|-----|---------------------------|----------|
| Name of substance | CAS No | BCF | Log KOW | BOD5/COD |
| Toluene | 108-88-3 | 90 | 2,73 (pH value: 7, 20 °C) | |
| n-Heptane | 142-82-5 | 552 | 4,5 | |

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-----------|---------|
| ADRRID | UN 3295 |
| IMDG-Code | UN 3295 |
| ICAO-TI | UN 3295 |

14.2 UN proper shipping name

| | |
|--------|------------------------------|
| ADRRID | HYDROCARBONS, LIQUID, N.O.S. |
|--------|------------------------------|



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| | |
|---|---|
| IMDG-Code | HYDROCARBONS, LIQUID, N.O.S. |
| ICAO-TI | Hydrocarbons, liquid, n.o.s. |
| 14.3 Transport hazard class(es) | |
| ADRRID | 3 |
| IMDG-Code | 3 |
| ICAO-TI | 3 |
| 14.4 Packing group | |
| ADRRID | II |
| IMDG-Code | II |
| ICAO-TI | II |
| 14.5 Environmental hazards | hazardous to the aquatic environment |
| Environmentally hazardous substance (aquatic environment): | n-Heptane |
| 14.6 Special precautions for user | |
| Provisions for dangerous goods (ADR) should be complied within the premises. | |
| 14.7 Maritime transport in bulk according to IMO instruments | |
| The cargo is not intended to be carried in bulk. | |
| 14.8 Information for each of the UN Model Regulations | |
| Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information | |
| Proper shipping name | HYDROCARBONS, LIQUID, N.O.S. |
| Particulars in the transport document | UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, (D/E), environmentally hazardous, special provision 640D |
| Classification code | F1 |
| Danger label(s) | 3, "Fish and tree" |
|   | |
| Environmental hazards | YES (hazardous to the aquatic environment) |
| Special provisions (SP) | 640D |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |
| Transport category (TC) | 2 |
| Tunnel restriction code (TRC) | D/E |
| Hazard identification No | 33 |
| Emergency Action Code | 3YE |
| Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information | |


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| | |
|---|---------------------------|
| Classification code | F1 |
| Danger label(s) | 3 Fish and tree |
|  | |
| Environmental hazards | Yes Hazardous to water |
| Special provisions (SP) | 640D |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |
| Transport category (TC) | 2 |
| Hazard identification No | 33 |

International Maritime Dangerous Goods Code (IMDG) - Additional information

| | |
|--|--|
| Proper shipping name | HYDROCARBONS, LIQUID, N.O.S. |
| Particulars in the shipper's declaration | UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, -4°C c.c., MARINE POLLUTANT |
| Marine pollutant | YES (hazardous to the aquatic environment) |
| Danger label(s) | 3, "Fish and tree" |



| | |
|--------------------------|----------|
| Special provisions (SP) | - |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |
| EmS | F-E, S-D |
| Stowage category | B |

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

| | |
|--|---|
| Proper shipping name | Hydrocarbons, liquid, n.o.s. |
| Particulars in the shipper's declaration | UN3295, Hydrocarbons, liquid, n.o.s., 3, II |
| Environmental hazards | YES (hazardous to the aquatic environment) |
| Danger label(s) | 3 |



| | |
|--------------------------|-----|
| Special provisions (SP) | A3 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 L |

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SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Seveso Directive

| 2012/18/EU (Seveso III) | | | |
|-------------------------|--|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| E1 | environmental hazards (hazardous to the aquatic environment, cat. 1) | 100 200 | 56) |

Notation

56) Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

Deco-Paint Directive

| | |
|-------------|------------------|
| VOC content | 100 % 832 g/l |
|-------------|------------------|

Industrial Emissions Directive (IED)

| | |
|--|---------|
| VOC content | 100 % |
| VOC content (Water content was discounted) | 832 g/l |

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

none of the ingredients are listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

| Pollutant release and transfer registers (PRTR) | | | |
|---|----------|---------|---|
| Name of substance | CAS No | Remarks | Threshold for releases to air (kg/year) |
| Toluene | 108-88-3 | (11) | |

Legend

(11) Single pollutants are to be reported if the threshold for BTEX (the sum parameter of benzene, toluene, ethyl benzene, xylenes) is exceeded

Water Framework Directive (WFD)

| List of pollutants (WFD) | | | | |
|--------------------------|---|--------|-----------|---------|
| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
| Toluene | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |

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Legend

A) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

none of the ingredients are listed

Regulation on drug precursors

| Name of substance | CAS No | Wt% | Classification | CN Code | Threshold level |
|-------------------|----------|-----|----------------|------------|-----------------|
| Toluene | 108-88-3 | 75 | Category 3 | 2902 30 00 | |

Regulation on substances that deplete the ozone layer (ODS)

none of the ingredients are listed

Regulation concerning the export and import of hazardous chemicals (PIC)

none of the ingredients are listed

Regulation on persistent organic pollutants (POP)

none of the ingredients are listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

none of the ingredients are listed

Restrictions according to GB REACH, Annex 17

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|--|----------|----|
| Name of substance | Name acc. to inventory | CAS No | No |
| Refractive index standard | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | | 3 |
| Toluene | Toluene | 108-88-3 | 48 |
| Toluene | flammable / pyrophoric | | 40 |

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances

| Name of substance | CAS No | Listed in | HS code |
|-------------------|----------|-----------|---------|
| Toluene | 108-88-3 | Table II | 2902.30 |

National inventories

| Country | Inventory | Status |
|---------|-----------|----------------------------|
| AU | AIIC | all ingredients are listed |
| CA | DSL | all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | all ingredients are listed |

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| Country | Inventory | Status |
|---------|------------|--------------------------------|
| EU | REACH Reg. | all ingredients are listed |
| JP | CSCL-ENCS | all ingredients are listed |
| JP | ISHA-ENCS | not all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| PH | PICCS | all ingredients are listed |
| TR | CICR | all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed |

Legend

| | |
|------------|---|
| AIIC | Australian Inventory of Industrial Chemicals |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| ISHA-ENCS | Inventory of Existing and New Chemical Substances (ISHA-ENCS) |
| KECI | Korea Existing Chemicals Inventory |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS) |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Alignment to regulation:

Restructuring: section 9, section 14

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|--|-----------------|
| 2.1 | | Classification acc. to GHS: change in the listing (table) | yes |
| 2.1 | The most important adverse physicochemical, human health and environmental effects: Narcotic effects. | The most important adverse physicochemical, human health and environmental effects: Delayed or immediate effects can be expected after short or long-term exposure. The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses. | yes |
| 2.2 | | Hazard statements: change in the listing (table) | yes |
| 2.2 | Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger | | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|---|--|-----------------|
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | contains: Toluene, n-Heptane | | yes |
| 2.3 | Other hazards: There is no additional information. | Other hazards | yes |
| 2.3 | | Results of PBT and vPvB assessment: This mixture does not contain any substances that are assessed to be a PBT or a vPvB. | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------------|---|
| 2000/39/EC | Commission Directive establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC |
| 2006/15/EC | Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC |
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| Aquatic Acute | Hazardous to the aquatic environment - acute hazard |
| Aquatic Chronic | Hazardous to the aquatic environment - chronic hazard |
| Asp. Tox. | Aspiration hazard |
| BCF | Bioconcentration factor |
| BOD | Biochemical Oxygen Demand |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| CN Code | Combined Nomenclature |
| COD | Chemical oxygen demand |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |

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| Abbr. | Descriptions of used abbreviations |
|-------------|---|
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| Flam. Liq. | Flammable liquid |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| HS | Harmonized Commodity Description and Coding System (Harmonized System, drawn up by the World Customs Organisation) |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| IOELV | Indicative occupational exposure limit value |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| LEL | Lower explosion limit (LEL) |
| log KOW | n-Octanol/water |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| RCP | Reciprocal calculation procedure |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| Repr. | Reproductive toxicity |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| STEL | Short-term exposure limit |
| STOT RE | Specific target organ toxicity - repeated exposure |

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| Abbr. | Descriptions of used abbreviations |
|---------|--|
| STOT SE | Specific target organ toxicity - single exposure |
| TWA | Time-weighted average |
| UEL | Upper explosion limit (UEL) |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties. The classification is based on tested mixture. Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|-------|--|
| H225 | Highly flammable liquid and vapour. |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H336 | May cause drowsiness or dizziness. |
| H361d | Suspected of damaging the unborn child. |
| H373 | May cause damage to organs (central nervous system) through prolonged or repeated exposure (if inhaled). |
| 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. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.