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

### 1.1. Product identifier

984 Injector Direct Protection Diesel MF98400500AB

UFI: 0NY2-90HD-P00E-KFNE

### 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**

Flam. Liq. 3; H226
Eye Dam. 1; H318
Asp. Tox. 1; H304
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

**Regulation (EC) No 1272/2008**

**Hazard components for labelling**

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics
2-methylpropan-1-ol; iso-butanol
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cycles, < 2% aromatics

**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. |
| H411 | Toxic to aquatic life with long lasting effects. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

**Precautionary statements**

| | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P243 | Take action to prevent static discharges. |
| P260 | Do not breathe vapours. |

| | |
|---|---|
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing and eye protection/face protection. |
| P301+P310 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. |
| P331 | Do NOT induce vomiting. |
| P302+P352 | IF ON SKIN: Wash with plenty of water. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P337+P317 | If eye irritation persists: Get medical help. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P310 | Immediately call a POISON CENTER/doctor. |

### 2.3. Other hazards

Endocrine disrupting properties: 2,6-di-tert-butyl-p-cresol.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

**Relevant ingredients**

| CAS No | Chemical name | | | Quantity |
|---|---|---|---|---|
| | EC No | Index No | REACH No | |
| | Classification (Regulation (EC) No 1272/2008) | | | |
| 64742-48-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | | 50 - < 100 % |
| | 918-481-9 | | 01-2119457273-39 | |
| | Asp. Tox. 1; H304 EUH066 | | | |
| 78-83-1 | 2-metylpropan-1-ol | | | 5 - < 10 % |
| | 201-148-0 | 603-108-00-1 | 01-2119484609-23 | |
| | 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 Acute 1, Aquatic Chronic 1; H332 H312 H302 H400 H410 EUH044 EUH066 | | | |
| 64742-48-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cycles, < 2% aromatics | | | 1 - < 3 % |
| | 918-481-9 | | | |
| | Flam. Liq. 3, Asp. Tox. 1; H226 H304 | | | |
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | | | 1 - < 3 % |
| | 204-881-4 | | 01-2119565113-46 | |
| | Aquatic Acute 1, Aquatic Chronic 1; H400 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.

**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 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | 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-metylpropan-1-ol | 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); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = >4820 mg/kg; oral: LD50 = >9640 mg/kg Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1 | | |
| 64742-48-9 | 918-481-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cycles, < 2% aromatics | 1 - < 3 % |
| | inhalation: LC50 = > 4951 mg/l (vapours); dermal: LD50 = > 3160 mg/kg; oral: LD50 = > 5000 mg/kg | | |
| 128-37-0 | 204-881-4 | 2,6-di-tert-butyl-p-cresol | 1 - < 3 % |
| | dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 6000 mg/kg | | |
| 104-76-7 | 203-234-3 | 2-Ethylhexan-1-ol | 1 - < 3 % |
| | inhalation: LC50 = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); 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**

Full 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.

### 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**

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 advice**

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.

**For non-emergency personnel**

First aider: Pay attention to self-protection!

**For emergency responders**

Fight fire with normal precautions from a reasonable distance.

### 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

**For containment**

Prevent spread over a wide area (e.g. by containment or oil barriers).

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**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.

**Advice on general occupational hygiene**

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

**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)**

Additive

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Exposure limits (EH40)**

| CAS No | Substance | ppm | mg/m³ | 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 | | |
|---|---|---|---|
| DNEL type | Exposure route | Effect | Value |
| 27247-96-7 | 2-Ethylhexyl nitrate | | |
| Worker DNEL, long-term | inhalation | systemic | 0,35 mg/m³ |
| 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 |
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | | |
| Worker DNEL, long-term | inhalation | systemic | 1,76 mg/m³ |
| Worker DNEL, long-term | dermal | systemic | 0,5 mg/kg bw/day |
| Consumer DNEL, long-term | inhalation | systemic | 0,435 mg/m³ |
| Consumer DNEL, long-term | dermal | systemic | 0,25 mg/kg bw/day |
| Consumer DNEL, long-term | oral | systemic | 0,25 mg/kg bw/day |

**PNEC values**

| CAS No | Substance | |
|---|---|---|
| Environmental compartment | | Value |
| 27247-96-7 | 2-Ethylhexyl nitrate | |
| 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 |
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | |
| Freshwater | | 0,000199 mg/l |
| Freshwater (intermittent releases) | | 0,00199 mg/l |
| Marine water | | 0,00002 mg/l |
| Freshwater sediment | | 0,458 mg/kg |
| Marine sediment | | 0,046 mg/kg |
| Secondary poisoning | | 16,67 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 0,017 mg/l |
| Soil | | 0,054 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.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Suitable eye protection: Tightly sealed safety glasses.
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 | | |
| | | | **Test method** |
| Melting point/freezing point: | | not determined | |
| Boiling point or initial boiling point and boiling range: | | 100 °C | |
| Flammability: | | not applicable | |
| | | not applicable | |
| Lower explosion limits: | | 0,5 vol. % | |
| Upper explosion limits: | | 7 vol. % | |
| Flash point: | | 33 °C | ISO 3679 |
| Auto-ignition temperature: | | No information available. | |
| Decomposition temperature: | | not determined | |
| pH-Value (at 20 °C): | | | DIN 19268 |
| Viscosity / kinematic: (at 40 °C) | | 20,5 mm²/s | DIN EN ISO 3104 |
| 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 | |
| Vapour pressure: | not determined | |
| Density (at 20 °C): | 0,8 g/cm³ | DIN 51757 |
| Relative vapour density: | not determined | |

### 9.2. Other information

**Information with regard to physical hazard classes**

Self-ignition temperature

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

Oxidizing properties

Not oxidising.

**Other safety characteristics**

| | | |
|---|---|---|
| Evaporation rate: | not determined | |
| Solvent separation test: | No information available. | |
| Solvent content: | No information available. | |
| Solid content: | not determined | |
| Sublimation point: | No information available. | |
| Softening point: | No information available. | |
| | No information available. | |
| Viscosity / dynamic: | No information available. | DIN 53019-1 |

| | | |
|---|---|---|
| Flow time: (at 20 °C) | No information available. | DIN EN ISO 2431 |

## 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 products

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.

**Further information**

Do not mix with other chemicals.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes

**Toxicocinetics, metabolism and distribution**

No information available.

**Acute toxicity**

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

**ATEmix calculated**

ATE (oral) > 5000 mg/kg; ATE (dermal) > 5000 mg/kg; ATE (inhalation vapour) > 50 mg/l; ATE (inhalation dust/mist) > 12,5 mg/l

| CAS No | Chemical name | | | | | |
|---|---|---|---|---|---|---|
| | Exposure route | Dose | | Species | Source | Method |
| 64742-48-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | | | | |
| | oral | LD50 mg/kg | >8000 | Rat | | |
| | dermal | LD50 mg/kg | >3160 | Rabbit | | |
| | inhalation (4 h) vapour | LC50 | 4951 mg/l | Rat | | |
| 78-83-1 | 2-metylpropan-1-ol | | | | | |
| | oral | LD50 mg/kg | > 2830 | Rat | | |
| | dermal | LD50 mg/kg | > 2000 | Rat | | |
| | inhalation (4 h) vapour | LC50 | > 24 mg/l | Rat | | |
| 27247-96-7 | 2-Ethylhexyl nitrate | | | | | |
| | oral | LD50 mg/kg | >9640 | Rat | | |
| | dermal | LD50 mg/kg | >4820 | Rabbit | | |
| | inhalation (4 h) vapour | LC50 | 11 mg/l | Rat | | |
| | inhalation dust/mist | ATE | 1,5 mg/l | | | |
| 64742-48-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cycles, < 2% aromatics | | | | | |
| | oral | LD50 mg/kg | > 5000 | Rat | | |
| | dermal | LD50 mg/kg | > 3160 | Rabbit | | |
| | inhalation (4 h) vapour | LC50 mg/l | > 4951 | Rat | | |
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | | | | | |
| | oral | LD50 mg/kg | > 6000 | Rat | Study report (1989) | OECD Guideline 401 |
| | dermal | LD50 mg/kg | > 2000 | Rat | Study report (1988) | OECD Guideline 402 |
| 104-76-7 | 2-Ethylhexan-1-ol | | | | | |
| | oral | LD50 mg/kg | 2047 | Rat | | |
| | dermal | LD50 mg/kg | > 3000 | Rat | | |
| | inhalation (4 h) vapour | LC50 | 11 mg/l | Rat | | |
| | inhalation dust/mist | ATE | 1,5 mg/l | | | |

**Irritation and corrosivity**

Serious eye damage/eye irritation: Causes serious eye damage.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Repeated exposure may cause skin dryness or cracking.

**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: 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**

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

**Aspiration hazard**

May be fatal if swallowed and enters airways.

**Information on likely routes of exposure**

Ingestion, Inhalation, Skin contact, Eye contact.
Reference to other sections: 2.1, 4.2.

**Specific effects in experiment on an animal**

No information available.

### 11.2. Information on other hazards

**Endocrine disrupting properties**

Endocrine disrupting properties: 2,6-di-tert-butyl-p-cresol.
This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

**Other information**

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.
Harmful to aquatic life with long lasting effects.

| CAS No | Chemical name | | | | | | |
|---|---|---|---|---|---|---|---|
| | Aquatic toxicity | Dose | | [h] \| [d] | Species | Source | Method |
| 64742-48-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | | | | | |
| | Acute fish toxicity | LC50 mg/l | >1000 | 96 h | Oncorhynchus mykiss (Rainbow trout) | | |
| | Acute algae toxicity | ErC50 mg/l | >1000 | 96 h | Scenedesmus subspicatus | | |
| | Acute crustacea toxicity | EC50 mg/l | >1000 | 48 h | Daphnia magna | | |
| 78-83-1 | 2-metylpropan-1-ol | | | | | | |
| | Acute fish toxicity | LC50 mg/l | 1430 | 96 h | Pimephales promelas | | |
| | Acute algae toxicity | ErC50 mg/l | 1250 | | Desmodesmus subspicatus | | |
| | Acute crustacea toxicity | EC50 mg/l | 1439 | 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 mg/l | > 12,6 | 72 h | Pseudokirchneriella subcapitata | Study report (1998) | OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 mg/l | > 12,6 | 48 h | Daphnia magna | Study report (1998) | OECD Guideline 202 |
| | Acute bacteria toxicity | EC50 mg/l ( ) | > 1000 | 3 h | activated sludge of a predominantly domestic sewag | Study report (2010) | OECD Guideline 209 |
| 64742-48-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cycles, < 2% aromatics | | | | | | |
| | Acute fish toxicity | LC50 mg/l | >1000 | 96 h | Oncorhynchus mykiss (Rainbow trout) | | |
| | Acute algae toxicity | ErC50 mg/l | >1000 | 96 h | Pseudokirchneriella subcapitata | | |
| | Acute crustacea toxicity | EC50 mg/l | >1000 | 48 h | Daphnia magna | | |
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | | | | | | |
| | Acute fish toxicity | LC50 mg/l | 0,199 | 96 h | Oryzias latipes | REACh Registration Dossier | OECD Guideline 203 |
| | Acute algae toxicity | ErC50 mg/l | 0,758 | 96 h | Raphidocelis subcapitata | REACh Registration Dossier | OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 mg/l | 0,48 | 48 h | Daphnia magna | REACh Registration Dossier | OECD Guideline 202 |
| | Fish toxicity | NOEC mg/l | 0,053 | 30 d | Oryzias latipes | REACh Registration Dossier | OECD Guideline 210 |
| | Crustacea toxicity | NOEC mg/l | 0,069 | 21 d | Daphnia magna | REACh Registration Dossier | OECD Guideline 211 |
| | Acute bacteria toxicity | EC50 mg/l ( ) | > 10000 | 3 h | Activated sludge | Study report (2000) | OECD Guideline 209 |
| 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

The product has not been tested.

| CAS No | Chemical name | | | |
|---|---|---|---|---|
| | Method | Value | d | Source |
| | Evaluation | | | |
| 64742-48-9 | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | | |
| | OECD Guideline 301 F | 89,8 | 28 | ECHA |
| | Readily biodegradable (according to OECD criteria). | | | |
| 104-76-7 | 2-Ethylhexan-1-ol | | | |
| | OECD Guideline 301 C | 79 – 99,9 % | 14 | |

### 12.3. Bioaccumulative potential

The product has not been tested.

**Partition coefficient n-octanol/water**

| CAS No | Chemical name | Log Pow |
|---|---|---|
| 78-83-1 | 2-metylpropan-1-ol | 0,79 |
| 27247-96-7 | 2-Ethylhexyl nitrate | 5,24 |
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | 5,03 |
| 104-76-7 | 2-Ethylhexan-1-ol | 2,9 |

**BCF**

| CAS No | Chemical name | BCF | Species | Source |
|---|---|---|---|---|
| 128-37-0 | 2,6-di-tert-butyl-p-cresol | 465 | fish | REACh Registration D |

### 12.4. Mobility in soil

The product has not been tested.

### 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.
The product has not been tested.

### 12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

### 12.7. Other adverse effects

No information available.

**Further information**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

## 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 or ID number:** | UN 1993 |
| **14.2. UN proper shipping name:** | FLAMMABLE LIQUID, N.O.S. (2-metylpropan-1-ol) |
| **14.3. Transport hazard class(es):** | 3 |
| **14.4. Packing group:** | III |
| Hazard label: | 3 |
| Classification code: | F1 |
| Special Provisions: | 274 601 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |
| Transport category: | 3 |
| Hazard No: | 30 |
| Tunnel restriction code: | D/E |

**Inland waterways transport (ADN)**

| | |
|---|---|
| **14.1. UN number or ID number:** | UN 1993 |
| **14.2. UN proper shipping name:** | FLAMMABLE LIQUID, N.O.S. (2-metylpropan-1-ol) |
| **14.3. Transport hazard class(es):** | 3 |
| **14.4. Packing group:** | III |
| Hazard label: | 3 |
| Classification code: | F1 |
| Special Provisions: | 274 601 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |

**Marine transport (IMDG)**

| | |
|---|---|
| **14.1. UN number or ID number:** | UN 1993 |
| **14.2. UN proper shipping name:** | FLAMMABLE LIQUID, N.O.S. ( iso-butanol;2-Ethylhexyl nitrate) |
| **14.3. Transport hazard class(es):** | 3 |
| **14.4. Packing group:** | III |
| Hazard label: | 3 |
| Marine pollutant: | yes |
| 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 or ID 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: | Yes |
| Danger releasing substance: | 2-Ethylhexyl nitrate |

**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, Entry 29, Entry 40, Entry 75

| | |
|---|---|
| Directive 2010/75/EU on industrial emissions: | No information available. |
| Directive 2004/42/EC on VOC in paints and varnishes: | No information available. |

**Additional information**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

**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

**Abbreviations and acronyms**

Flam. Liq. 3: Flammable liquids, hazard category 3
Acute Tox. 4: Acute toxicity, hazard category 4
Asp. Tox. 1: Aspiration hazard, hazard category 1
Skin Irrit. 2: Skin irritation, hazard category 2
Eye Dam. 1: Serious eye damage, hazard category 1
Eye Irrit. 2: Eye irritation, hazard category 2
STOT SE 3: Specific target organ toxicity - single exposure, hazard category 3
Aquatic Acute 1: Hazardous to the aquatic environment, hazard category: Acute 1
Aquatic Chronic 1: Hazardous to the aquatic environment, long-term hazard category: Chronic 1
Aquatic Chronic 3: Hazardous to the aquatic environment, long-term hazard category: Chronic 3
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: Workplace Exposure Limits
TWA (EC): Time-Weighted Average
ATE: Acute Toxicity Estimate
ATEL (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**

| Classification | Classification procedure |
|---|---|
| Flam. Liq. 3; H226 | On basis of test data |
| Eye Dam. 1; H318 | Calculation method |
| Asp. Tox. 1; H304 | 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. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H400 | Very toxic to aquatic life. |
| 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**

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 relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*