

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

Bio Diesel Additiv
Bio Diesel Additive

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

Relevant identified uses of the substance or mixture:

Additives

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

LIQUI MOLY GmbH
Jerg-Wieland-Str. 4
89081 Ulm-Lehr
Tel.: (+49) 0731-1420-0
Fax: (+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)
+1 872 5888271 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

| Hazard class | Hazard category | Hazard statement |
|-----------------|-----------------|---|
| Asp. Tox. | 1 | H304-May be fatal if swallowed and enters airways. |
| Aquatic Chronic | 3 | H412-Harmful to aquatic life with long lasting effects. |

2.2 Label elements

Labeling according to Regulation (EC) 1272/2008 (CLP)

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revision date / version: 28.08.2022 / 0021

Replacing version dated / version: 01.11.2021 / 0020

Valid from: 28.08.2022

PDF print date: 30.08.2022

Bio Diesel Additiv

Bio Diesel Additive



Danger

H304-May be fatal if swallowed and enters airways. H412-Harmful to aquatic life with long lasting effects.

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children.

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

P405-Store locked up.

P501-Dispose of contents / container to an approved waste disposal facility.

EUH044-Risk of explosion if heated under confinement.

EUH066-Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

Dangerous vapours heavier than air.

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

| | |
|--|-----------------------------|
| Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | |
| Registration number (REACH) | 01-2119457273-39-XXXX |
| Index | --- |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 918-481-9 |
| CAS | --- |
| content % | 60-80 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | EUH066 Asp. Tox. 1, H304 |

| | |
|---|---|
| 2-ethylhexyl nitrate | |
| Registration number (REACH) | 01-2119539586-27-XXXX |
| Index | --- |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 248-363-6 |
| CAS | 27247-96-7 |
| content % | 5-15 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | EUH066 EUH044 Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 2, H411 |

Page 3 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | |
|---|-----------------------|
| Distillates (petroleum), hydrotreated heavy paraffinic | |
| Registration number (REACH) | 01-2119484627-25-XXXX |
| Index | 649-467-00-8 |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 265-157-1 |
| CAS | 64742-54-7 |
| content % | 1-<10 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Asp. Tox. 1, H304 |

| | |
|--|-------------------------|
| Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate | |
| Registration number (REACH) | 01-0000015551-76-XXXX |
| Index | 607-530-00-7 |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 406-040-9 |
| CAS | 125643-61-0 |
| content % | 1-5 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Aquatic Chronic 4, H413 |

| | |
|---|--|
| 2-Ethylhexanol | Substance for which an EU exposure limit value applies. |
| Registration number (REACH) | 01-2119487289-20-XXXX |
| Index | --- |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 203-234-3 |
| CAS | 104-76-7 |
| content % | 1-5 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 |

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

The substances named in this section are given with their actual, appropriate classification!

For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

If, for example, the note P is applied for a hydrocarbon then this has already been taken into account for the classification named here.

Quote: "Note P - The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7)."

Article 4 of the regulation (EC) no. 1272/2008 (CLP regulation) was also observed and taken into account for the classification named here.

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aiders should ensure they are protected!

Never pour anything into the mouth of an unconscious person!

Inhalation

Remove person from danger area.

Supply person with fresh air and consult doctor according to symptoms.

Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Eye contact

Remove contact lenses.

Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

Ingestion

Rinse the mouth thoroughly with water.

Do not induce vomiting - give copious water to drink. Consult doctor immediately.

Danger of aspiration.

In case of vomiting, keep head low so that the stomach content does not reach the lungs.

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

The following may occur:

Page 4 of 22
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 28.08.2022 / 0021
Replacing version dated / version: 01.11.2021 / 0020
Valid from: 28.08.2022
PDF print date: 30.08.2022
Bio Diesel Additiv
Bio Diesel Additive

Irritation of the eyes
Product removes fat.
Dermatitis (skin inflammation)
Ingestion:
Oedema of the lungs
Lung damage
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

4.3 Indication of any immediate medical attention and special treatment needed

n.c.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

CO₂
Extinction powder
Foam
Cool container at risk with water.

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon
Oxides of nitrogen
Hydrocarbons
Toxic pyrolysis products.
Explosive vapour/air or gas/air mixtures.

5.3 Advice for firefighters

For personal protective equipment see Section 8.
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary.
Cool container at risk with water.
Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
Ensure sufficient ventilation, remove sources of ignition.
Avoid dust formation with solid or powder products.
Leave the danger zone if possible, use existing emergency plans if necessary.
Remove possible causes of ignition - do not smoke.
Ensure sufficient supply of air.
Avoid inhalation, and contact with eyes or skin.
If applicable, caution - risk of slipping.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

6.2 Environmental precautions

If leakage occurs, dam up.
Resolve leaks if this possible without risk.
Prevent from entering drainage system.
Prevent surface and ground-water infiltration, as well as ground penetration.
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
 Keep away from sources of ignition - Do not smoke.
 Avoid contact with eyes or skin.
 Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
 Observe directions on label and instructions for use.
 Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
 Wash hands before breaks and at end of work.
 Keep away from food, drink and animal feedingstuffs.
 Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
 Store product closed and only in original packing.
 Not to be stored in gangways or stair wells.
 Solvent resistant floor
 Do not store with oxidizing agents.
 Store in a well ventilated place.
 Protect from direct sunlight and warming.
 Store cool.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limit (WEL) of the total hydrocarbon solvent content of the mixture (RCP method according to EH40):
 800 mg/m³

| | | | |
|---|--|-----|--|
| Chemical Name | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | |
| WEL-TWA: 800 mg/m ³ | WEL-STEL: --- | --- | |
| Monitoring procedures: | <ul style="list-style-type: none"> - Draeger - Hydrocarbons 0,1%/c (81 03 571) - Draeger - Hydrocarbons 2/a (81 03 581) - Compur - KITA-187 S (551 174) | | |
| BMGV: --- | Other information: (OEL acc. to RCP-method, paragraphs 84-87, EH40) | | |
| Chemical Name | 2-Ethylhexanol | | |
| WEL-TWA: 1 ppm (5,4 mg/m ³) (WEL, EU) | WEL-STEL: --- | --- | |
| Monitoring procedures: | - Draeger - Alcohol 100/a (CH 29 701) | | |
| BMGV: --- | Other information: --- | | |
| Chemical Name | Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | |
| WEL-TWA: 800 mg/m ³ | WEL-STEL: --- | --- | |
| Monitoring procedures: | <ul style="list-style-type: none"> - Draeger - Hydrocarbons 0,1%/c (81 03 571) - Draeger - Hydrocarbons 2/a (81 03 581) - Compur - KITA-187 S (551 174) | | |
| BMGV: --- | Other information: (OEL acc. to RCP-method, paragraphs 84-87, EH40) | | |
| Chemical Name | Oil mist, mineral | | |

Page 6 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | | |
|---|------------------------|-----|
| WEL-TWA: 5 mg/m3 (Mineral oil, excluding metal working fluids, ACGIH) | WEL-STEL: --- | --- |
| Monitoring procedures: - Draeger - Oil Mist 1/a (67 33 031) | | |
| BMGV: --- | Other information: --- | |

| 2-ethylhexyl nitrate | | | | | | |
|----------------------|--|-----------------------------|------------|---------|--------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - freshwater | | PNEC | 0,8 | µg/l | |
| | Environment - marine | | PNEC | 0,08 | µg/l | |
| | Environment - sediment | | PNEC | 0,00074 | mg/kg dw | |
| | Environment - soil | | PNEC | 0,00019 | mg/kg dw | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 0,52 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 0,087 | mg/m3 | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 0,025 | mg/kg bw/day | |
| Consumer | Human - dermal | Long term, local effects | DNEL | 0,022 | mg/cm2 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 1 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 0,35 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, local effects | DNEL | 0,044 | mg/cm2 | |

| Distillates (petroleum), hydrotreated heavy paraffinic | | | | | | |
|--|--|--------------------------|------------|-------|------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - oral (animal feed) | | PNEC | 9,33 | mg/kg feed | |
| Consumer | Human - inhalation | Long term, local effects | DNEL | 1,2 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 5,4 | mg/m3 | |

| Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate | | | | | | |
|---|--|-----------------------------|------------|-------|------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - sewage treatment plant | | PNEC | 10 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 0,37 | mg/kg dw | |
| | Environment - sediment, marine | | PNEC | 0,037 | mg/kg dw | |
| | Environment - soil | | PNEC | 10 | mg/kg dw | |
| | Environment - freshwater | | PNEC | 0,018 | mg/l | |
| | Environment - marine | | PNEC | 0,002 | mg/l | |
| | Environment - water, sporadic (intermittent) release | | PNEC | 0,018 | mg/l | |
| | Environment - oral (animal feed) | | PNEC | 41,33 | mg/kg feed | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 0,74 | mg/m3 | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 0,83 | mg/kg bw/d | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 0,93 | mg/kg bw/d | |

Page 7 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | | | | | | |
|---------------------|--------------------|-----------------------------|------|------|-------------------|--|
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 1,67 | mg/kg | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 6,6 | mg/m ³ | |

| 2-Ethylhexanol | | | | | | |
|---------------------|---|------------------------------|------------|--------|-----------------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - freshwater | | PNEC | 0,017 | mg/l | |
| | Environment - marine | | PNEC | 0,0017 | mg/l | |
| | Environment - sporadic (intermittent) release | | PNEC | 0,17 | mg/l | |
| | Environment - sewage treatment plant | | PNEC | 10 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 0,284 | mg/kg dw | |
| | Environment - sediment, marine | | PNEC | 0,028 | mg/kg dw | |
| | Environment - soil | | PNEC | 0,047 | mg/kg dw | |
| | Environment - oral (animal feed) | | PNEC | 55 | mg/kg feed | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 1,1 | mg/kg body weight/day | |
| Consumer | Human - inhalation | Short term, local effects | DNEL | 53,2 | mg/m ³ | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 11,4 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 2,3 | mg/m ³ | |
| Consumer | Human - oral | Short term, systemic effects | DNEL | 1,1 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, local effects | DNEL | 26,6 | mg/m ³ | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 12,8 | mg/m ³ | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 23 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Short term, local effects | DNEL | 53,2 | mg/m ³ | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 53,2 | mg/m ³ | |
| Workers / employees | Human - oral | Long term, systemic effects | DNEL | 12,8 | mg/m ³ | |

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
 (8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE).
 (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).
 (8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
 ** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.
 (13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.

Page 8 of 22
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 28.08.2022 / 0021
Replacing version dated / version: 01.11.2021 / 0020
Valid from: 28.08.2022
PDF print date: 30.08.2022
Bio Diesel Additiv
Bio Diesel Additive

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.
Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.
These are specified by e.g. EN 14042.
EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:
Solvent resistant protective gloves (EN ISO 374).
If applicable
Protective nitrile gloves (EN ISO 374).
Protective Viton® / fluoroelastomer gloves (EN ISO 374).
Minimum layer thickness in mm:
0,4
Permeation time (penetration time) in minutes:
>480
The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
If OES or MEL is exceeded.
Gas mask filter A (EN 14387), code colour brown
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|--|
| Physical state: | Liquid |
| Colour: | Light brown, Clear |
| Odour: | Characteristic |
| Melting point/freezing point: | There is no information available on this parameter. |
| Boiling point or initial boiling point and boiling range: | There is no information available on this parameter. |
| Flammability: | Flammable |

Page 9 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

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|--|--|
| Lower explosion limit: | There is no information available on this parameter. |
| Upper explosion limit: | There is no information available on this parameter. |
| Flash point: | 63 °C |
| Auto-ignition temperature: | There is no information available on this parameter. |
| Decomposition temperature: | There is no information available on this parameter. |
| pH: | Mixture is non-soluble (in water). |
| Kinematic viscosity: | <7 mm ² /s (40°C) |
| Solubility: | Insoluble |
| Partition coefficient n-octanol/water (log value): | Does not apply to mixtures. |
| Vapour pressure: | There is no information available on this parameter. |
| Density and/or relative density: | 0,826 g/ml (15°C) |
| Relative vapour density: | Vapours heavier than air. |
| Particle characteristics: | Does not apply to liquids. |

9.2 Other information

| | |
|--------------------|--|
| Explosives: | There is no information available on this parameter. |
| Oxidising liquids: | No |

SECTION 10: Stability and reactivity

10.1 Reactivity

The product has not been tested.

10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

Heating, open flame, ignition sources

10.5 Incompatible materials

Avoid contact with strong oxidizing agents.

10.6 Hazardous decomposition products

No decomposition when used as directed.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Possibly more information on health effects, see Section 2.1 (classification).

| Bio Diesel Additiv | | | | | | |
|---|----------|-------|---------|----------|-------------|------------------------------|
| Bio Diesel Additive | | | | | | |
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Acute toxicity, by oral route: | ATE | >2000 | mg/kg | | | calculated value |
| Acute toxicity, by dermal route: | ATE | >2000 | mg/kg | | | calculated value |
| Acute toxicity, by inhalation: | ATE | >20 | mg/l/4h | | | calculated value, Vapours |
| Skin corrosion/irritation: | | | | | | n.d.a. |
| Serious eye damage/irritation: | | | | | | n.d.a. |
| Respiratory or skin sensitisation: | | | | | | n.d.a. |
| Germ cell mutagenicity: | | | | | | n.d.a. |
| Carcinogenicity: | | | | | | n.d.a. |
| Reproductive toxicity: | | | | | | n.d.a. |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | n.d.a. |
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | | | | n.d.a. |
| Aspiration hazard: | | | | | | n.d.a. |
| Symptoms: | | | | | | n.d.a. |

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|-------------------|----------|-------|------|----------|-------------|-------|
|-------------------|----------|-------|------|----------|-------------|-------|

Page 10 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | | | | | | |
|---|------|-------|----------|------------------------|--|---|
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | Analogous conclusion |
| Acute toxicity, by dermal route: | LD50 | >5000 | mg/kg | Rabbit | OECD 402 (Acute Dermal Toxicity) | Analogous conclusion |
| Acute toxicity, by inhalation: | LC50 | >4951 | mg/m3/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | Analogous conclusion, Vapours |
| Skin corrosion/irritation: | | | | | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant, Analogous conclusion |
| Serious eye damage/irritation: | | | | | OECD 405 (Acute Eye Irritation/Corrosion) | Not irritant, Analogous conclusion |
| Respiratory or skin sensitisation: | | | | | OECD 406 (Skin Sensitisation) | Not sensitising, Analogous conclusion |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | | OECD 474 (Mammalian Erythrocyte Micronucleus Test) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Carcinogenicity: | | | | | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Negative, Analogous conclusion |
| Reproductive toxicity: | | | | | OECD 414 (Prenatal Developmental Toxicity Study) | Negative, Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | | | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | Negative, Analogous conclusion |
| Aspiration hazard: | | | | | | Yes |
| Symptoms: | | | | | | unconsciousness, headaches, dizziness, mucous membrane irritation |

2-ethylhexyl nitrate

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|------------------------------------|----------|-------|---------|------------|--|---|
| Acute toxicity, by dermal route: | | | | | | Experiences on persons., Harmful |
| Acute toxicity, by inhalation: | | | | | | Experiences on persons., Harmful |
| Acute toxicity, by inhalation: | LCLo | >4,6 | mg/l/1h | Rat | | Mist |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant, Repeated exposure may cause skin dryness or cracking. |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Not irritant |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact) |

Page 11 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

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|---|-------|-----|------------|------------------------|---|---|
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mouse | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Human being | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Reproductive toxicity: | NOAEL | 100 | mg/kg bw/d | | OECD 421 (Reproduction/Developmental Toxicity Screening Test) | Negative |
| Reproductive toxicity (Developmental toxicity): | | | | Rat | OECD 414 (Prenatal Developmental Toxicity Study) | Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), dermal: | NOAEL | 500 | mg/kg bw/d | Rabbit | | Negative dermal |
| Symptoms: | | | | | | drying of the skin., may cause headaches and vertigo., nausea, drop in blood pressure, diarrhoea, unconsciousness |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 863 | mg/m3 | Rat | OECD 413 (Subchronic Inhalation Toxicity - 90-Day Study) | Vapours, Analogous conclusion |

Distillates (petroleum), hydrotreated heavy paraffinic

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|------------------------------------|----------|-------|---------|------------------------|--|---|
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | Analogous conclusion |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rabbit | OECD 402 (Acute Dermal Toxicity) | Analogous conclusion |
| Acute toxicity, by inhalation: | LC50 | >5,53 | mg/l/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | Aerosol, Analogous conclusion |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant, Analogous conclusion |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Not irritant, Analogous conclusion |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact), Analogous conclusion |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative Chinese hamster |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | Mouse | OECD 474 (Mammalian Erythrocyte Micronucleus Test) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | Mammalian | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative, Analogous conclusion |

Page 12 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

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|---|-------|-------|------------|--------|--|---|
| Carcinogenicity: | | | | Mouse | OECD 451 (Carcinogenicity Studies) | Negative, Analogous conclusion 78 weeks, dermal |
| Reproductive toxicity: | | | | Rat | OECD 421 (Reproduction/Developmental Toxicity Screening Test) | Negative, Analogous conclusion oral |
| Reproductive toxicity (Developmental toxicity): | | | | Rat | OECD 414 (Prenatal Developmental Toxicity Study) | Negative, Analogous conclusion dermal |
| Specific target organ toxicity - repeated exposure (STOT-RE), dermal: | NOAEL | ~1000 | mg/kg bw/d | Rabbit | OECD 410 (Repeated Dose Dermal Toxicity - 90-Day) | Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), dermal: | NOAEL | <30 | mg/kg | Rat | OECD 411 (Subchronic Dermal Toxicity - 90-day Study) | Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOEC | ~220 | mg/m3 | Rat | OECD 412 (Subacute Inhalation Toxicity - 28-Day Study) | Analogous conclusion, Aerosol |
| Symptoms: | | | | | | coughing, respiratory distress, nausea and vomiting., diarrhoea |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | LOAEL | 125 | mg/kg | Rat | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | Analogous conclusion |

Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|------------------------------------|----------|---------|------------|------------------------|--|--------------------------------|
| Acute toxicity, by oral route: | LD50 | > 2000 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | > 2000 | mg/kg | Rat | OECD 402 (Acute Dermal Toxicity) | |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Not irritant |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact) |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative Chinese hamster |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | | OECD 474 (Mammalian Erythrocyte Micronucleus Test) | Negative Chinese hamster |
| Reproductive toxicity: | NOAEL | 150-600 | mg/kg bw/d | Mouse | OECD 415 (One-Generation Reproduction Toxicity Study) | |
| Carcinogenicity: | | | | Rat | | Negative, Analogous conclusion |
| Aspiration hazard: | | | | | | Negative |

2-Ethylhexanol

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|-------------------|----------|-------|------|----------|-------------|-------|
|-------------------|----------|-------|------|----------|-------------|-------|

Page 13 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

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|---|-------|--------|------------|------------------------|--|---|
| Acute toxicity, by oral route: | LD50 | 2047 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >3000 | mg/kg | Rat | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | 2,7 | mg/l/4h | | | Aerosol |
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Skin Irrit. 2 |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Eye Irrit. 2 |
| Respiratory or skin sensitisation: | | | | Guinea pig | | No (skin contact) literature |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mammalian | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative Chinese hamster |
| Germ cell mutagenicity: | | | | Mouse | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative |
| Reproductive toxicity: | NOAEL | 3000 | ppm | Rat | OECD 416 (Two-generation Reproduction Toxicity Study) | Negative |
| Reproductive toxicity (Developmental toxicity): | | | | Mouse | OECD 414 (Prenatal Developmental Toxicity Study) | Negative oral |
| Carcinogenicity: | NOAEL | 750 | mg/kg bw/d | Mouse | OECD 451 (Carcinogenicity Studies) | Negative |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | Irritation of the respiratory tract, STOT SE 3, H335 |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | NOAEL | 125 | mg/kg bw/d | Rat | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | |
| Symptoms: | | | | | | unconsciousness, drop in blood pressure, vomiting, headaches, cramps, drowsiness, mucous membrane irritation, dizziness, nausea |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | NOAEL | 200 | mg/kg bw/d | Mouse | | |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEC | 0,6384 | mg/l | Rat | OECD 413 (Subchronic Inhalation Toxicity - 90-Day Study) | Vapours |

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|----------------------------------|----------|-------|---------|----------|----------------------------------|---------|
| Acute toxicity, by oral route: | LD50 | >2000 | mg/kg | Rat | | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rat | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | >5,28 | mg/l/4h | Rat | | Vapours |

Page 14 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | | | | | | |
|---|-------|--------|------------|------------------------|--|--|
| Skin corrosion/irritation: | | | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant, Analogous conclusion |
| Serious eye damage/irritation: | | | | Rabbit | OECD 405 (Acute Eye Irritation/Corrosion) | Not irritant, Analogous conclusion |
| Respiratory or skin sensitisation: | | | | Guinea pig | OECD 406 (Skin Sensitisation) | No (skin contact), Analogous conclusion |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | Mammalian | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative, Analogous conclusion Chinese hamster |
| Germ cell mutagenicity: | | | | Human being | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative, Analogous conclusion |
| Carcinogenicity: | | | | Rat | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Negative, Analogous conclusion |
| Carcinogenicity: | | | | Mouse | OECD 451 (Carcinogenicity Studies) | Negative, Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | NOAEL | >=1000 | mg/kg bw/d | Rat | OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test) | Negative, Analogous conclusion |
| Aspiration hazard: | | | | | | Yes |

11.2. Information on other hazards

| Bio Diesel Additiv Bio Diesel Additive | | | | | | |
|---|----------|-------|------|----------|-------------|---|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Endocrine disrupting properties: | | | | | | Does not apply to mixtures. |
| Other information: | | | | | | No other relevant information available on adverse effects on health. |

| Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | | | | | |
|--|----------|-------|------|----------|-------------|---|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Other information: | | | | | | Repeated exposure may cause skin dryness or cracking. |

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

| Bio Diesel Additiv Bio Diesel Additive | | | | | | |
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Page 15 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|--|----------|------|-------|------|----------|-------------|---|
| 12.1. Toxicity to fish: | | | | | | | n.d.a. |
| 12.1. Toxicity to daphnia: | | | | | | | n.d.a. |
| 12.1. Toxicity to algae: | | | | | | | n.d.a. |
| 12.2. Persistence and degradability: | | | | | | | n.d.a. |
| 12.3. Bioaccumulative potential: | | | | | | | n.d.a. |
| 12.4. Mobility in soil: | | | | | | | n.d.a. |
| 12.5. Results of PBT and vPvB assessment | | | | | | | n.d.a. |
| 12.6. Endocrine disrupting properties: | | | | | | | Does not apply to mixtures. |
| 12.7. Other adverse effects: | | | | | | | No information available on other adverse effects on the environment. |

| Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics | | | | | | | |
|--|----------|------|-------|------|---------------------------------|--|--------------------------------------|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Water solubility: | | | | | | | Product floats on the water surface. |
| 12.1. Toxicity to fish: | LL50 | 96h | >1000 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to fish: | NOELR | 28d | 0,101 | mg/l | Oncorhynchus mykiss | | |
| 12.1. Toxicity to daphnia: | EL50 | 48h | >1000 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOELR | 21d | 0,176 | mg/l | Daphnia magna | | |
| 12.1. Toxicity to algae: | EL50 | 72h | >1000 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 80 | % | activated sludge | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable |
| Other organisms: | EL50 | 48h | >1000 | mg/l | Tetrahymena pyriformis | | |

| 2-ethylhexyl nitrate | | | | | | | |
|----------------------------------|----------|------|-------|------|-------------------|--|-------|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.3. Bioaccumulative potential: | BCF | | 1332 | | | | High |
| 12.1. Toxicity to fish: | LC50 | 96h | 2 | mg/l | Brachydanio rerio | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | >12,6 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |

Page 16 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | | | | | | | |
|---|-----------|-----|---------------|------|-------------------------------------|---|---|
| 12.1. Toxicity to algae: | EC50 | 72h | 3,22 | mg/l | Pseudokirchneriell a subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.1. Toxicity to fish: | NOEC/NOEL | 96h | 1,42 | mg/l | | | |
| 12.2. Persistence and degradability: | | 28d | 0 | % | | OECD 310 (Ready Biodegradability - CO2 in sealed vessels (Headspace Test)) | Not readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | 3,74- 5,24 | | | | High |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| 12.4. Mobility in soil: | Log Koc | | 3,75 | | | OECD 121 (Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using HPLC) | |
| Toxicity to bacteria: | EC50 | 3h | >1000 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | |
| Other information: | AOX | | 0 | % | | | No |
| Water solubility: | | | | | | | Slight |

Distillates (petroleum), hydrotreated heavy paraffinic

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|-----------|------|--------|------|-------------------------------------|--|--|
| 12.1. Toxicity to fish: | NOEC/NOEL | 96h | >100 | mg/l | Pimephales promelas | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to fish: | NOEC/NOEL | 14d | 1000 | mg/l | Oncorhynchus mykiss | QSAR | |
| 12.1. Toxicity to daphnia: | EL50 | 48h | 10000 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | Analogous conclusion |
| 12.1. Toxicity to daphnia: | LL50 | 96h | >10000 | mg/l | | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 21d | 10 | mg/l | Daphnia magna | OECD 211 (Daphnia magna Reproduction Test) | Analogous conclusion |
| 12.1. Toxicity to algae: | NOEC/NOEL | 72h | >=100 | mg/l | Pseudokirchneriell a subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 31 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Not readily biodegradable, Analogous conclusion |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |

Page 17 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

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| Water solubility: | | | | | | | Insoluble |
|-------------------|--|--|--|--|--|--|-----------|

| Reaction mass of isomers of: C7-9-alkyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate | | | | | | | |
|---|-----------|------|------------|-------|-------------------------|--|--|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Other organisms: | NOEC/NOEL | 28d | 31,6 | mg/kg | | OECD 217 (Soil Microorganisms - Carbon Transformation Test) | |
| 12.1. Toxicity to fish: | LC50 | 96h | >74 | mg/l | Brachydanio rerio | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to fish: | NOEC/NOEL | 35d | 0,001 | mg/l | Brachydanio rerio | OECD 210 (Fish, Early-Life Stage Toxicity Test) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | >100 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 21d | >=1 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | Water toxicology is above the water-solubility value. |
| 12.1. Toxicity to algae: | EC50 | 72h | >3 | mg/l | Scenedesmus subspicatus | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 2-4 | % | activated sludge | OECD 301 B (Ready Biodegradability - Co2 Evolution Test) | Not readily biodegradable |
| 12.2. Persistence and degradability: | | | | | | | Mechanical precipitation possible. |
| 12.3. Bioaccumulative potential: | Log Pow | | 9,2 | | | | Possible @20°C |
| 12.3. Bioaccumulative potential: | BCF | 35d | 260 | | | OECD 305 (Bioconcentration - Flow-Through Fish Test) | Concentration in organisms possible. Oncorhynchus mykiss |
| 12.4. Mobility in soil: | | | | | | | Adsorption in ground., To be expected |
| 12.4. Mobility in soil: | Koc | | 7673-18432 | | | OECD 106 (Adsorption/Desorption Using a Batch Equilibrium Method) | |
| Toxicity to bacteria: | IC50 | 3h | >100 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | |
| Other information: | EC50 | 19d | >100 | mg/kg | | OECD 208 (Terrestrial Plants, Growth Test) | Brassica rapa |

Page 18 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | | | | | | | |
|-----------------------|-----------|-----|-------|-------|-----------------|---|-----------------|
| Toxicity to annelids: | EC50 | 14d | >1000 | mg/kg | Eisenia foetida | OECD 207 (Earthworm, Acute Toxicity Tests) | artificial soil |
| Toxicity to annelids: | NOEC/NOEL | 56d | 250 | mg/kg | Eisenia foetida | OECD 222 (Earthworm Reproduction Test (Eisenia fetida/Eisenia andrei)) | artificial soil |
| Water solubility: | | | 0,5 | µg/l | | | Insoluble |

2-Ethylhexanol

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|---|----------|------|-------|------|----------------------------|--|---|
| 12.1. Toxicity to fish: | LC50 | 96h | 17,1 | mg/l | Leuciscus idus | Regulation (EC) 440/2008 C.1 (ACUTE TOXICITY FOR FISH) | |
| 12.1. Toxicity to fish: | LC50 | 96h | 28,2 | mg/l | Pimephales promelas | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 39 | mg/l | Daphnia magna | Regulation (EC) 440/2008 C.2 (DAPHNIA SP. ACUTE IMMOBILISATION TEST) | |
| 12.1. Toxicity to algae: | EC50 | 72h | 16,6 | mg/l | Desmodesmus subspicatus | Regulation (EC) 440/2008 C.3 (FRESHWATER ALGAE AND CYANOBACTERI A, GROWTH INHIBITION TEST) | |
| 12.2. Persistence and degradability: | COD | 14d | 100 | % | activated sludge | OECD 301 C (Ready Biodegradability - Modified MITI Test (I)) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | 2,9 | | | OECD 117 (Partition Coefficient (n- octanol/water) - HPLC method) | Low |
| 12.3. Bioaccumulative potential: | BCF | | 25,33 | | | | calculated value |
| 12.4. Mobility in soil: | | | 1,42 | | | | Not to be expected |
| 12.4. Mobility in soil: | Koc | | 800 | | | | |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Toxicity to bacteria: | EC50 | 24h | >300 | mg/l | activated sludge | | |
| Toxicity to bacteria: | EC50 | 3h | 540 | mg/l | Pseudomonas putida | | |
| Toxicity to bacteria: | EC50 | 12h | > 100 | mg/l | activated sludge | | |

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|-------------------------|----------|------|-------|------|------------------------|--|-------|
| 12.1. Toxicity to fish: | LC50 | 96h | >1000 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |

Page 19 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

| | | | | | | | |
|--------------------------------------|------|-----|---------|------|---------------------------------|--|---|
| 12.1. Toxicity to daphnia: | EC50 | 48h | >1000 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to algae: | EC50 | 72h | >1000 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 80 | % | activated sludge | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable, Analogous conclusion |
| 12.3. Bioaccumulative potential: | BCF | | 10-2500 | | | | High |

SECTION 13: Disposal considerations

13.1 Waste treatment methods

For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.
 Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
 13 07 03 other fuels (including mixtures)

Recommendation:

Sewage disposal shall be discouraged.
 Pay attention to local and national official regulations.
 Implement substance recycling.
 E.g. suitable incineration plant.

For contaminated packing material

Pay attention to local and national official regulations.
 Empty container completely.
 Uncontaminated packaging can be recycled.
 Dispose of packaging that cannot be cleaned in the same manner as the substance.

SECTION 14: Transport information

General statements

14.1. UN number or ID number: n.a.

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 Classification code: n.a.
 LQ: n.a.
 14.5. Environmental hazards: Not applicable
 Tunnel restriction code:

Transport by sea (IMDG-code)

14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 Marine Pollutant: n.a.
 14.5. Environmental hazards: Not applicable

Transport by air (IATA)

14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 14.5. Environmental hazards: Not applicable

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

Revision date / version: 28.08.2022 / 0021

Replacing version dated / version: 01.11.2021 / 0020

Valid from: 28.08.2022

PDF print date: 30.08.2022

Bio Diesel Additiv

Bio Diesel Additive

14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Maritime transport in bulk according to IMO instruments

Non-dangerous material according to Transport Regulations.

SECTION 15: Regulatory information

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

Observe restrictions:

Comply with trade association/occupational health regulations.

Directive 2010/75/EU (VOC):

~ 90,3 %

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections:

3, 8

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

| Classification in accordance with regulation (EC) No. 1272/2008 (CLP) | Evaluation method used |
|---|--|
| Asp. Tox. 1, H304 | Classification according to calculation procedure. |
| Aquatic Chronic 3, H412 | Classification according to calculation procedure. |

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

EUH066 Repeated exposure may cause skin dryness or cracking.

EUH044 Risk of explosion if heated under confinement.

Asp. Tox. — Aspiration hazard

Aquatic Chronic — Hazardous to the aquatic environment - chronic

Acute Tox. — Acute toxicity - oral

Acute Tox. — Acute toxicity - dermal

Acute Tox. — Acute toxicity - inhalation

Skin Irrit. — Skin irritation

Eye Irrit. — Eye irritation

STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation

Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.

Guidelines for the preparation of safety data sheets as amended (ECHA).

Page 21 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 28.08.2022 / 0021
 Replacing version dated / version: 01.11.2021 / 0020
 Valid from: 28.08.2022
 PDF print date: 30.08.2022
 Bio Diesel Additiv
 Bio Diesel Additive

Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).
 Safety data sheets for the constituent substances.
 ECHA Homepage - Information about chemicals.
 GESTIS Substance Database (Germany).
 German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).
 EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.
 National Lists of Occupational Exposure Limits for each country as amended.
 Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

Any abbreviations and acronyms used in this document:

acc., acc. to according, according to
 ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
 AOX Adsorbable organic halogen compounds
 approx. approximately
 Art., Art. no. Article number
 ASTM ASTM International (American Society for Testing and Materials)
 ATE Acute Toxicity Estimate
 BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)
 BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)
 BCF Bioconcentration factor
 BSEF The International Bromine Council
 bw body weight
 CAS Chemical Abstracts Service
 CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
 CMR carcinogenic, mutagenic, reproductive toxic
 DMEL Derived Minimum Effect Level
 DNEL Derived No Effect Level
 DOC Dissolved organic carbon
 dw dry weight
 e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
 EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)
 EC European Community
 ECHA European Chemicals Agency
 ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect
 EEC European Economic Community
 EINECS European Inventory of Existing Commercial Chemical Substances
 ELINCS European List of Notified Chemical Substances
 EN European Norms
 EPA United States Environmental Protection Agency (United States of America)
 ErCx, EµCx, ErLx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)
 etc. et cetera
 EU European Union
 EVAL Ethylene-vinyl alcohol copolymer
 Fax. Fax number
 gen. general
 GHS Globally Harmonized System of Classification and Labelling of Chemicals
 GWP Global warming potential
 Koc Adsorption coefficient of organic carbon in the soil
 Kow octanol-water partition coefficient
 IARC International Agency for Research on Cancer
 IATA International Air Transport Association
 IBC (Code) International Bulk Chemical (Code)
 IMDG-code International Maritime Code for Dangerous Goods
 incl. including, inclusive
 IUCLID International Uniform Chemical Information Database
 IUPAC International Union for Pure Applied Chemistry
 LC50 Lethal Concentration to 50 % of a test population
 LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)

Page 22 of 22
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 28.08.2022 / 0021
Replacing version dated / version: 01.11.2021 / 0020
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Bio Diesel Additiv
Bio Diesel Additive

Log K_{oc} Logarithm of adsorption coefficient of organic carbon in the soil
Log K_{ow}, Log P_{ow} Logarithm of octanol-water partition coefficient
LQ Limited Quantities
MARPOL International Convention for the Prevention of Marine Pollution from Ships
n.a. not applicable
n.av. not available
n.c. not checked
n.d.a. no data available
NIOSH National Institute for Occupational Safety and Health (USA)
NLP No-longer-Polymer
NOEC, NOEL No Observed Effect Concentration/Level
OECD Organisation for Economic Co-operation and Development
org. organic
OSHA Occupational Safety and Health Administration (USA)
PBT persistent, bioaccumulative and toxic
PE Polyethylene
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polyvinylchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
TOC Total organic carbon
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

No responsibility.

These statements were made by:

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