

GB

Page 1 of 22
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
Revision date / version: 24.09.2024 / 0010
Replacing version dated / version: 04.06.2024 / 0009
Valid from: 24.09.2024
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Octane Booster

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)

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

1.1 Product identifier

Octane Booster

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

Additive

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

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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:

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Landspítali- The National University Hospital of Iceland, tel. +354 543 2222 or 112 (valid only for Iceland)

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 |
|-----------------|-----------------|---|
| Acute Tox. | 4 | H332-Harmful if inhaled. |
| Eye Dam. | 1 | H318-Causes serious eye damage. |
| 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 (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster



Danger

H332-Harmful if inhaled. H318-Causes serious eye damage. 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.
 P261-Avoid breathing vapours or spray. P273-Avoid release to the environment. P280-Wear eye protection / face protection.
 P301+P310-IF SWALLOWED: Immediately call a POISON CENTER / doctor. P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P331-Do NOT induce vomiting.
 P405-Store locked up.
 P501-Dispose of contents / container to an approved waste disposal facility.

EUH066-Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics
 Hydrocarbons, C10, aromatics, >1% naphthalene
 Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics
 Bornan-2-one
 Tricarbonyl(methylcyclopentadienyl)manganese

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 % | 60-90 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | EUH066 Asp. Tox. 1, H304 |

| | |
|--|-----------------------|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics | |
| Registration number (REACH) | 01-2119456620-43-XXXX |
| Index | --- |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 926-141-6 |
| CAS | --- |
| content % | 1-<10 |

GB

Page 3 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

| | |
|---|-----------------------------|
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | EUH066 Asp. Tox. 1, H304 |
|---|-----------------------------|

| | |
|---|--|
| Bornan-2-one | |
| Registration number (REACH) | 01-2119966156-31-XXXX |
| Index | --- |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 200-945-0 |
| CAS | 76-22-2 |
| content % | 3-<5 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Flam. Sol. 2, H228 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 2, H371 (lung) (as inhalation) Aquatic Chronic 2, H411 |
| Specific Concentration Limits and ATE | ATE (oral): 1310 mg/kg ATE (as inhalation, Dusts or mist): 1,5 mg/l/4h ATE (as inhalation, Vapours): 11 mg/l/4h |

| | |
|---|--|
| Hydrocarbons, C10, aromatics, >1% naphthalene | |
| Registration number (REACH) | 01-2119463588-24-XXXX |
| Index | --- |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 919-284-0 |
| CAS | (64742-94-5) |
| content % | 1-<2,5 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | EUH066 Carc. 2, H351 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 |

| | |
|---|---|
| Tricarbonyl(methylcyclopentadienyl)manganese | |
| Registration number (REACH) | 01-2119495971-23-XXXX |
| Index | --- |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 235-166-5 |
| CAS | 12108-13-3 |
| content % | 0,25-<0,5 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Acute Tox. 1, H330 Acute Tox. 2, H310 Acute Tox. 3, H301 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) |
| Specific Concentration Limits and ATE | ATE (oral): 100 mg/kg ATE (dermal): 196,7 mg/kg ATE (as inhalation, Dusts or mist): 0,005 mg/l/4h ATE (as inhalation, Vapours): 0,1235 mg/l/4h |

| | |
|---|---|
| Naphthalene | Substance for which an EU exposure limit value applies. |
| Registration number (REACH) | --- |
| Index | 601-052-00-2 |
| EINECS, ELINCS, NLP, REACH-IT List-No. | 202-049-5 |
| CAS | 91-20-3 |
| content % | 0,1-<0,25 |
| Classification according to Regulation (EC) 1272/2008 (CLP), M-factors | Acute Tox. 4, H302 Carc. 2, H351 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) |
| Specific Concentration Limits and ATE | ATE (oral): 490 mg/kg |

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. No classification is required for the mixture with Carc. 2, H351, as the naphthalene content in the product is < 1 %. No other ingredients with this classification are present.

The addition of the highest concentrations listed here can result in a classification. Only when this classification is listed in Section 2 does it apply. In all other cases the total concentration is below the classification.

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 - call doctor immediately, have Data Sheet available.

Protect uninjured eye.

Follow-up examination by an ophthalmologist.

Ingestion

Rinse the mouth thoroughly with water.

Do not induce vomiting. Consult doctor immediately.

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.

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

eyes, reddened

watering eyes

irritation of the eyes

Drying of the skin.

Dermatitis (skin inflammation)

Nausea

Vomiting

Danger of aspiration.

Oedema of the lungs

Chemical pneumonitis (condition similar to pneumonia)

4.3 Indication of any immediate medical attention and special treatment needed

Gastric lavage (stomach washing) only under endotracheal intubation.

Subsequent observation for pneumonia and pulmonary oedema.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water jet spray/foam/CO2/dry extinguisher

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

Toxic gases

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.
Keep unprotected persons away.
Avoid 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

Resolve leaks if this possible without risk.
If leakage occurs, dam up.
Prevent surface and ground-water infiltration, as well as ground penetration.
Prevent from entering drainage system.
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, sawdust) and dispose of according to Section 13.
Fill the absorbed material into lockable containers.

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.
Do not carry cleaning cloths soaked in product in trouser pockets.
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.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Under all circumstances prevent penetration into the soil.
Store in a well ventilated place.
Store cool.
Store in a dry place.

7.3 Specific end use(s)

No information available at present.

Page 6 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
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 PDF print date: 24.09.2024
 Octane Booster

Observe the instructions for good working practice and the recommendations for risk assessment.
 Consult hazardous substance information systems, e.g. from the professional associations, the chemical industry or different industries, depending on the application (building materials, wood, chemistry, laboratory, leather, metal).

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 | Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics | | |
|--|--|-----|--|
| WEL-TWA: 1200 mg/m ³ (>=C7 normal and branched chain alkanes) | 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: --- | | |

| Chemical Name | Bornan-2-one | | |
|--|---|-----|--|
| WEL-TWA: 2 ppm (12 mg/m ³) | WEL-STEL: 3 ppm (19 mg/m ³) | --- | |
| Monitoring procedures: | --- | | |
| BMGV: --- | Other information: --- | | |

| Chemical Name | Hydrocarbons, C10, aromatics, >1% naphthalene | | |
|--|--|-----|--|
| WEL-TWA: 500 mg/m ³ (Aromatics) | 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: --- | | |

| Chemical Name | Naphthalene | | |
|---|--|-----|--|
| WEL-TWA: 500 mg/m ³ (Aromatics) (WEL-TWA), 10 ppm (50 mg/m ³) (EU) | WEL-STEL: --- | --- | |
| Monitoring procedures: | <ul style="list-style-type: none"> - Compur - KITA-153 U(C) (551 182) - NIOSH 5506 (POLYNUCLEAR AROMATIC HYDROCARBONS by HPLC) - 1998 - NIOSH 5515 (POLYNUCLEAR AROMATIC HYDROCARBONS by GC) - 1994 - OSHA 35 (Naphthalene) - 1982 | | |
| BMGV: --- | Other information: --- | | |

| Bornan-2-one | | | | | | |
|---------------------|--|------------------|------------|-------|-------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - freshwater | | PNEC | 1,71 | µg/l | |
| | Environment - marine | | PNEC | 0,171 | µg/l | |
| | Environment - sediment, freshwater | | PNEC | 0,139 | mg/kg | |
| | Environment - sediment, marine | | PNEC | 0,017 | mg/kg | |
| | Environment - soil | | PNEC | 0,013 | mg/kg | |
| | Environment - sewage treatment plant | | PNEC | 1 | mg/l | |

| | | | | | | |
|---------------------|--|-----------------------------|------|--------|------------|--|
| | Environment - water, sporadic (intermittent) release | | PNEC | 1,71 | µg/l | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 4,348 | mg/m3 | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 5 | mg/kg bw/d | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 5 | mg/kg bw/d | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 17,632 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 10 | mg/kg bw/d | |

| Hydrocarbons, C10, aromatics, >1% naphthalene | | | | | | |
|---|--|-----------------------------|------------|-------|--------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 7,5 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 32 | mg/m3 | |
| Consumer | Human - oral | Long term, systemic effects | DNEL | 7,5 | mg/kg bw/day | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 12,5 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 151 | mg/m3 | |

| Tricarbonyl(methylcyclopentadienyl)manganese | | | | | | |
|--|--|-----------------------------|------------|-------|--------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - freshwater | | PNEC | 0,21 | µg/l | |
| | Environment - marine | | PNEC | 0,021 | µg/l | |
| Consumer | Human - dermal | Long term, systemic effects | DNEL | 0,062 | mg/kg bw/day | |
| Consumer | Human - inhalation | Long term, systemic effects | DNEL | 0,11 | mg/m3 | |
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 0,11 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 0,6 | mg/kg bw/day | |

| Naphthalene | | | | | | |
|---------------------|---|------------------|------------|--------|------------------|------|
| Area of application | Exposure route / Environmental compartment | Effect on health | Descriptor | Value | Unit | Note |
| | Environment - freshwater | | PNEC | 2,4 | µg/l | |
| | Environment - marine | | PNEC | 0,24 | µg/l | |
| | Environment - sewage treatment plant | | PNEC | 2,9 | mg/l | |
| | Environment - sediment, freshwater | | PNEC | 0,0672 | mg/kg dry weight | |
| | Environment - sediment, marine | | PNEC | 0,0672 | mg/kg dry weight | |
| | Environment - soil | | PNEC | 0,0533 | mg/kg dry weight | |
| | Environment - sporadic (intermittent) release | | PNEC | 0,02 | mg/l | |

GB

Page 8 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

| | | | | | | |
|---------------------|--------------------|-----------------------------|------|------|--------------|--|
| Workers / employees | Human - dermal | Long term, systemic effects | DNEL | 3,57 | mg/kg bw/day | |
| Workers / employees | Human - inhalation | Long term, systemic effects | DNEL | 25 | mg/m3 | |
| Workers / employees | Human - inhalation | Long term, local effects | DNEL | 25 | mg/m3 | |

GB - United Kingdom | WEL-TWA = Workplace Exposure Limit - Long-term exposure limit - 8-hour TWA (= time weighted average) reference period (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
 (EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
 (8) = Inhalable fraction (2004/37/EC, 2017/164/EU). (9) = Respirable fraction (2004/37/EC, 2017/164/EU). (11) = Inhalable fraction (2004/37/EC). (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 (2004/37/EC). |
 | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit - 15-minute reference period (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
 (EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
 (8) = Inhalable fraction (2004/37/EC, 2017/164/EU). (9) = Respirable fraction (2004/37/EC, 2017/164/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). |
 | BMGV = Biological monitoring guidance value (EH40/2005 Workplace exposure limits (Fourth Edition 2020)).
 (EU) = Directive 98/24/EC or 2004/37/EC or SCOEL (Biological Limit Value - BLV, Recommendation from the Scientific Committee on Occupational Exposure Limits (SCOEL)) |
 | Other information (EH40/2005 Workplace exposure limits (Fourth Edition 2020)): Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
 (EU) = Directive 91/322/EEC, 98/24/EC, 2000/39/EC, 2004/37/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU or 2019/1831/EU:
 (13) = The substance can cause sensitisation of the skin and of the respiratory tract (2004/37/EC), (14) = The substance can cause sensitisation of the skin (2004/37/EC). |

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
 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:
 Chemical resistant protective gloves (EN ISO 374).
 Recommended
 Protective Neoprene® / polychloroprene gloves (EN ISO 374).
 Protective nitrile gloves (EN ISO 374).
 Protective Viton® / fluoroelastomer gloves (EN ISO 374).
 Minimum layer thickness in mm:

> 0,35
 Permeation time (penetration time) in minutes:
 > 240 - 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: | Yellow, 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: | There is no information available on this parameter. |
| Lower explosion limit: | There is no information available on this parameter. |
| Upper explosion limit: | There is no information available on this parameter. |
| Flash point: | >61 °C |
| Auto-ignition temperature: | There is no information available on this parameter. |
| Decomposition temperature: | There is no information available on this parameter. |
| pH: | n.a. |
| 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: | 0,8108 g/ml (20°C) |
| Relative vapour density: | There is no information available on this parameter. |
| Particle characteristics: | Does not apply to liquids. |

9.2 Other information

| | |
|--------------------|---------------------------|
| Explosives: | Product is not explosive. |
| 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 alkalis.

Avoid contact with strong oxidizing agents.

Avoid contact with strong acids.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)

Revision date / version: 24.09.2024 / 0010

Replacing version dated / version: 04.06.2024 / 0009

Valid from: 24.09.2024

PDF print date: 24.09.2024

Octane Booster

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).

| Octane Booster | | | | | | |
|---|----------|---------|---------|----------|-------------|---|
| 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 |
| Acute toxicity, by inhalation: | ATE | >1-1,24 | mg/l/4h | | | calculated value, Aerosol |
| Skin corrosion/irritation: | | | | | | Repeated exposure may cause skin dryness or cracking. |
| Serious eye damage/irritation: | | | | | | n.d.a. |
| Respiratory or skin sensitisation: | | | | | | n.d.a. |
| Germ cell mutagenicity: | | | | | | n.d.a. |
| Carcinogenicity: | | | | | | negative, the real Naphthalene content is <1% |
| 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 |
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >3160 | mg/kg | Rabbit | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | >4951 | mg/m3 | Rat | OECD 403 (Acute Inhalation Toxicity) | 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 |

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
|---|----------|--------|-----------------------|------------------------|--|---|
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >5000 | mg/kg | Rabbit | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | >5000 | mg/m ³ /8h | Rat | OECD 403 (Acute Inhalation Toxicity) | Vapours |
| 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: | | | | Mouse | in vivo | Negative |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative |
| Germ cell mutagenicity: | | | | Mouse | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative, Analogous conclusion |
| Carcinogenicity: | | | | | OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies) | Analogous conclusion, Negative |
| Reproductive toxicity: | | | | | OECD 414 (Prenatal Developmental Toxicity Study) | Analogous conclusion, Negative |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | Analogous conclusion, No indications of such an effect. |
| Specific target organ toxicity - repeated exposure (STOT-RE): | NOAEL | >=1000 | mg/kg bw/d | Rat | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | |
| Aspiration hazard: | | | | | | Yes |

Page 12 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

| | | | | | | |
|-----------|--|--|--|--|--|---|
| Symptoms: | | | | | | drying of the skin., headaches, fatigue, dizziness, nausea, diarrhoea, vomiting |
|-----------|--|--|--|--|--|---|

| Bornan-2-one | | | | | | |
|---|----------|--------|---------|----------|--|-----------------|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 423 (Acute Oral Toxicity - Acute Toxic Class Method) | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rat | OECD 402 (Acute Dermal Toxicity) | |
| Acute toxicity, by inhalation: | LC50 | >10000 | mg/m3 | Rat | OECD 403 (Acute Inhalation Toxicity) | Dust(-2h) |
| Acute toxicity, by inhalation: | ATE | 11 | mg/l/4h | | | Vapours |
| Acute toxicity, by inhalation: | ATE | 1,5 | mg/l/4h | | | Dusts or mist |
| Skin corrosion/irritation: | | | | | OECD 439 (In Vitro Skin Irritation - Reconstructed Human Epidermis Test Method) | Skin Irrit. 2 |
| Serious eye damage/irritation: | | | | | OECD 437 (Bovine Corneal Opacity + Permeability Test for Identif. Ocular Corros. + Severe Irritants) | Eye Dam. 1 |
| Respiratory or skin sensitisation: | | | | | | Not sensitising |
| Germ cell mutagenicity: | | | | Mouse | OECD 476 (In Vitro Mammalian Cell Gene Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mouse | OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test) | Negative |
| Specific target organ toxicity - single exposure (STOT-SE), inhalative: | | | | | | STOT SE 2 |

| Hydrocarbons, C10, aromatics, >1% naphthalene | | | | | | |
|---|----------|-------|-------|----------|--|---|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by oral route: | LD50 | >5000 | mg/kg | Rat | OECD 420 (Acute Oral toxicity - Fixe Dose Procedure) | |
| Acute toxicity, by oral route: | LD50 | 6318 | mg/kg | Rat | OECD 401 (Acute Oral Toxicity) | |
| Acute toxicity, by dermal route: | LD50 | >2000 | mg/kg | Rabbit | OECD 402 (Acute Dermal Toxicity) | Analogous conclusion |
| Acute toxicity, by inhalation: | LC50 | >4688 | mg/m3 | Rat | OECD 403 (Acute Inhalation Toxicity) | |
| Skin corrosion/irritation: | | | | | | Repeated exposure may cause skin dryness or cracking. |
| 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: | | | | Mammalian | OECD 479 (Genetic Toxicology - In Vitro Sister Chromatid Exchange assay in Mammalian Cells) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative, Analogous conclusion |
| Germ cell mutagenicity: | | | | | OECD 473 (In Vitro Mammalian Chromosome Aberration Test) | Negative, Analogous conclusion Chinese hamster |
| Germ cell mutagenicity: | | | | Mouse | OECD 474 (Mammalian Erythrocyte Micronucleus Test) | Negative |
| Germ cell mutagenicity: | | | | Mammalian | OECD 475 (Mammalian Bone Marrow Chromosome Aberration Test) | Negative, Analogous conclusion |
| Reproductive toxicity: | | | | | OECD 414 (Prenatal Developmental Toxicity Study) | Negative, Analogous conclusion |
| Reproductive toxicity: | | | | | OECD 416 (Two-generation Reproduction Toxicity Study) | Negative, Analogous conclusion |
| Reproductive toxicity (Developmental toxicity): | NOAEL | >450 | mg/kg | Rat | OECD 415 (One-Generation Reproduction Toxicity Study) | Negative, Analogous conclusion |
| Reproductive toxicity (Effects on fertility): | | | | Rat | OECD 415 (One-Generation Reproduction Toxicity Study) | Negative, Analogous conclusion |
| Specific target organ toxicity - single exposure (STOT-SE): | | | | | | Vapours may cause drowsiness and dizziness., STOT SE 3, H336 |
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | | | OECD 452 (Chronic Toxicity Studies) | Negative, Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | NOAEL | 750 | mg/kg | Rat | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | Negative, Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), dermal: | NOAEL | 495 | mg/kg | Rat | OECD 411 (Subchronic Dermal Toxicity - 90-day Study) | Negative, Analogous conclusion |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | NOAEL | 1000 | mg/m3 | Rat | OECD 413 (Subchronic Inhalation Toxicity - 90-Day Study) | Negative, Analogous conclusion |
| Aspiration hazard: | | | | | | Yes |

| | | | | | | |
|-----------|--|--|--|--|--|---|
| Symptoms: | | | | | | drowsiness, headaches, drowsiness, dizziness |
|-----------|--|--|--|--|--|---|

| Tricarbonyl(methylcyclopentadienyl)manganese | | | | | | |
|---|----------|--------|---------|------------------------|---|---------------|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Acute toxicity, by oral route: | ATE | 100 | mg/kg | | | |
| Acute toxicity, by oral route: | LD50 | 100 | mg/kg | | | |
| Acute toxicity, by dermal route: | ATE | 196,7 | mg/kg | | | |
| Acute toxicity, by dermal route: | LD50 | 196,7 | mg/kg | | | |
| Acute toxicity, by inhalation: | ATE | 0,1235 | mg/l/4h | | | Vapours |
| Acute toxicity, by inhalation: | ATE | 0,005 | mg/l/4h | | | Dusts or mist |
| Acute toxicity, by inhalation: | LC50 | 0,1235 | mg/l/4h | | | Vapours |
| Skin corrosion/irritation: | | 2,79 | | Rabbit | OECD 404 (Acute Dermal Irritation/Corrosion) | Not irritant |
| Germ cell mutagenicity: | | | | Salmonella typhimurium | OECD 471 (Bacterial Reverse Mutation Test) | Negative |
| Germ cell mutagenicity: | | | | Mouse | OECD 478 (Genetic Toxicology - Rodent dominant Lethal Test) | Negative |
| Reproductive toxicity (Developmental toxicity): | | | | Rat | OECD 414 (Prenatal Developmental Toxicity Study) | Negative |

| Naphthalene | | | | | | |
|---|----------|-------|---------|------------|--|-------------------|
| Toxicity / effect | Endpoint | Value | Unit | Organism | Test method | Notes |
| Acute toxicity, by oral route: | LD50 | 490 | mg/kg | Rat | | |
| Acute toxicity, by oral route: | ATE | 490 | mg/kg | | | |
| Acute toxicity, by dermal route: | LD50 | >2500 | mg/kg | Rat | | |
| Acute toxicity, by inhalation: | LD50 | >0,4 | mg/l/4h | Rat | OECD 403 (Acute Inhalation Toxicity) | Vapours |
| Respiratory or skin sensitisation: | | | | Guinea pig | | No (skin contact) |
| Reproductive toxicity: | NOAEL | 120 | mg/kg | Rabbit | OECD 414 (Prenatal Developmental Toxicity Study) | Female |
| Reproductive toxicity: | LOAEL | 50 | mg/kg | Rat | OECD 414 (Prenatal Developmental Toxicity Study) | Female |
| Specific target organ toxicity - repeated exposure (STOT-RE), oral: | LOAEL | 400 | mg/kg | Rat | OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents) | |
| Specific target organ toxicity - repeated exposure (STOT-RE), dermal: | NOAEL | 1000 | mg/kg | Rat | OECD 411 (Subchronic Dermal Toxicity - 90-day Study) | |
| Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.: | LOAEL | 0,011 | mg/l | Rat | OECD 413 (Subchronic Inhalation Toxicity - 90-Day Study) | Vapours |

Page 15 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

| | | | | | | |
|-----------|--|--|--|--|--|--|
| Symptoms: | | | | | | lack of appetite, ataxia, breathing difficulties, unconsciousness, diarrhoea, cornea opacity, headaches, cramps, gastrointestinal disturbances, mucous membrane irritation, dizziness, nausea and vomiting., sweating, Reddening, eyes, reddened |
|-----------|--|--|--|--|--|--|

11.2. Information on other hazards

| Octane Booster | | | | | | |
|----------------------------------|----------|-------|------|----------|-------------|---|
| 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).

| Octane Booster | | | | | | | |
|--|----------|------|-------|------|----------|-------------|---|
| 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. |

| | | | | | | | |
|--------------------|-----|--|--|--|--|--|--|
| Other information: | AOX | | | | | | According to the recipe, contains no AOX. |
| Other information: | DOC | | | | | | DOC-elimination degree (complexing organic substance) \geq 80%/28d: No |

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

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|--|----------|------|---------|------|---------------------------------|--|--------------------------------------|
| 12.1. Toxicity to fish: | NOELR | 28d | 0,101 | mg/l | Oncorhynchus mykiss | | |
| 12.1. Toxicity to fish: | LL50 | 96h | >1000 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 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 |
| 12.3. Bioaccumulative potential: | BCF | | 10-2500 | | | | High |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Other organisms: | EL50 | 48h | >1000 | mg/l | Tetrahymena pyriformis | | |
| Water solubility: | | | | | | | Product floats on the water surface. |

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
|--------------------------------------|----------|------|-------|------|---------------------------------|--|-----------------------|
| 12.1. Toxicity to fish: | NOELR | 28d | 0,17 | mg/l | Oncorhynchus mykiss | QSAR | |
| 12.1. Toxicity to fish: | LL50 | 96h | >1000 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | NOELR | 21d | 1,22 | mg/l | Daphnia magna | QSAR | |
| 12.1. Toxicity to daphnia: | EL50 | 48h | >1000 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to algae: | NOELR | 72h | 1000 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 69 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable |
| 12.3. Bioaccumulative potential: | Log Pow | | 6-8 | | | | High |

| | | | | | | | |
|--|--|--|--|--|--|--|-------------------------------------|
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
| Water solubility: | | | | | | | Insoluble |

| Bornan-2-one | | | | | | | |
|--------------------------------------|-----------|------|-------|------|---------------------------------|--|-------|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.1. Toxicity to fish: | LC50 | 96h | 33,25 | mg/l | Brachydanio rerio | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | LC50 | 48h | 4,23 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to algae: | EC50 | 72h | 1,71 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.1. Toxicity to algae: | NOEC/NOEL | 72h | 0,032 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 77 | % | | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | |
| 12.3. Bioaccumulative potential: | Log Pow | | 2,414 | | | | |
| Toxicity to bacteria: | EC50 | 3h | >100 | mg/l | activated sludge | OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)) | |

| Hydrocarbons, C10, aromatics, >1% naphthalene | | | | | | | |
|---|-----------|------|---------|------|---------------------------------|--|---|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.1. Toxicity to fish: | LC50 | 96h | 2-5 | mg/l | Oncorhynchus mykiss | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | 21d | 0,48 | mg/l | Daphnia magna | | Analogous conclusion |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 3-10 | mg/l | Daphnia magna | OECD 202 (Daphnia sp. Acute Immobilisation Test) | |
| 12.1. Toxicity to algae: | NOELR | 72h | 2,5 | mg/l | Pseudokirchneriella subcapitata | | |
| 12.1. Toxicity to algae: | EC50 | 72h | 1-3 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | |
| 12.2. Persistence and degradability: | | 28d | 58 | % | activated sludge | OECD 301 F (Ready Biodegradability - Manometric Respirometry Test) | Readily biodegradable, Analogous conclusion |
| 12.3. Bioaccumulative potential: | Log Pow | | 2,8-6,5 | | | | High |
| 12.3. Bioaccumulative potential: | BCF | | <100 | | | | Low |

Page 18 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

| | | | | | | | |
|--|--|--|--|--|--|--|-------------------------------------|
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |
|--|--|--|--|--|--|--|-------------------------------------|

| Tricarbonyl(methylcyclopentadienyl)manganese | | | | | | | |
|--|----------|------|-------|------|---------------------------------|---|-------------------------------------|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.1. Toxicity to fish: | LC50 | 96h | 0,21 | mg/l | Cyprinus carpio | OECD 203 (Fish, Acute Toxicity Test) | |
| 12.1. Toxicity to daphnia: | LC50 | 48h | 0,83 | mg/l | Daphnia magna | | EPA OTS 797.1300 |
| 12.1. Toxicity to algae: | EC50 | 48h | 1,7 | mg/l | Pseudokirchneriella subcapitata | OECD 201 (Alga, Growth Inhibition Test) | growth rate |
| 12.1. Toxicity to algae: | EC50 | 48h | 0,41 | mg/l | Raphidocelis subcapitata | OECD 201 (Alga, Growth Inhibition Test) | biomass |
| 12.2. Persistence and degradability: | | 56d | 4 | % | | OECD 301 D (Ready Biodegradability - Closed Bottle Test) | Not readily biodegradable |
| 12.2. Persistence and degradability: | | 60d | 0 | % | | OECD 308 (Aerobic and Anaerobic Transformation in Aquatic Sediment Systems) | |
| 12.3. Bioaccumulative potential: | Log Pow | | 3,7 | | | | |
| 12.5. Results of PBT and vPvB assessment | | | | | | | No PBT substance, No vPvB substance |

| Naphthalene | | | | | | | |
|--------------------------------------|-----------|------|----------|------|---------------------------|-------------|--|
| Toxicity / effect | Endpoint | Time | Value | Unit | Organism | Test method | Notes |
| 12.1. Toxicity to fish: | LC50 | 96h | 1,99 | mg/l | Pimephales promelas | | Does not conform with EU classification. |
| 12.1. Toxicity to fish: | LC50 | 96h | 0,51 | mg/l | | | |
| 12.1. Toxicity to fish: | LC50 | 96h | 0,11 | mg/l | Oncorhynchus mykiss | | |
| 12.1. Toxicity to daphnia: | NOEC/NOEL | >60d | 0,6 | mg/l | Daphnia pulex | | |
| 12.1. Toxicity to daphnia: | EC50 | 48h | 1,6-24,1 | mg/l | Daphnia magna | | |
| 12.1. Toxicity to algae: | LC50 | 4h | 2,96 | mg/l | Selenastrum capricornutum | | |
| 12.1. Toxicity to algae: | ErC50 | 72h | 0,4 | mg/l | Skeletonema costatum | | |
| 12.2. Persistence and degradability: | | 28d | 2 | % | | | Not readily biodegradable |
| 12.3. Bioaccumulative potential: | BCF | 28d | 40-300 | | | | Lowfish |
| 12.4. Mobility in soil: | Koc | | 817 | | | | |
| 12.4. Mobility in soil: | Koc | | 240-1300 | | | | |
| Other information: | BOD5 | | 0 | % | | | |
| Other information: | COD | | 22 | % | | | |
| Other information: | Log Pow | | 3,3 | | | | |

SECTION 13: Disposal considerations

13.1 Waste treatment methods For the substance / mixture / residual amounts

Page 19 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

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.
 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

Transport by road/by rail (ADR/RID)

| | |
|-----------------------------------|----------------|
| 14.1. UN number or ID number: | Not applicable |
| 14.2. UN proper shipping name: | |
| Not applicable | |
| 14.3. Transport hazard class(es): | Not applicable |
| 14.4. Packing group: | Not applicable |
| 14.5. Environmental hazards: | Not applicable |
| Tunnel restriction code: | Not applicable |
| Classification code: | Not applicable |
| LQ: | Not applicable |
| Transport category: | Not applicable |

Transport by sea (IMDG-code)

| | |
|-----------------------------------|----------------|
| 14.1. UN number or ID number: | Not applicable |
| 14.2. UN proper shipping name: | |
| Not applicable | |
| 14.3. Transport hazard class(es): | Not applicable |
| 14.4. Packing group: | Not applicable |
| 14.5. Environmental hazards: | Not applicable |
| Marine Pollutant: | Not applicable |
| EmS: | Not applicable |

Transport by air (IATA)

| | |
|-----------------------------------|----------------|
| 14.1. UN number or ID number: | Not applicable |
| 14.2. UN proper shipping name: | |
| Not applicable | |
| 14.3. Transport hazard class(es): | Not applicable |
| 14.4. Packing group: | Not applicable |
| 14.5. Environmental hazards: | Not applicable |

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 national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!
 Comply with trade association/occupational health regulations.

| | |
|-----------------------------|---------|
| Directive 2010/75/EU (VOC): | 90,43 % |
|-----------------------------|---------|

Page 20 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

National requirements/regulations on safety and health protection must be applied when using work equipment.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 9
 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 |
|---|--|
| Acute Tox. 4, H332 | Classification based on toxicological analyses. |
| Eye Dam. 1, H318 | Classification according to calculation procedure. |
| 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.

H310 Fatal in contact with skin.
 H371 May cause damage to organs by inhalation.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H304 May be fatal if swallowed and enters airways.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H330 Fatal if inhaled.
 H332 Harmful if inhaled.
 H336 May cause drowsiness or dizziness.
 H351 Suspected of causing cancer.
 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.
 H228 Flammable solid.
 EUH066 Repeated exposure may cause skin dryness or cracking.

Acute Tox. — Acute toxicity - inhalation
 Eye Dam. — Serious eye damage
 Asp. Tox. — Aspiration hazard
 Aquatic Chronic — Hazardous to the aquatic environment - chronic
 Flam. Sol. — Flammable solid
 Skin Irrit. — Skin irritation
 STOT SE — Specific target organ toxicity - single exposure
 Carc. — Carcinogenicity
 STOT SE — Specific target organ toxicity - single exposure - narcotic effects
 Acute Tox. — Acute toxicity - dermal
 Acute Tox. — Acute toxicity - oral
 Aquatic Acute — Hazardous to the aquatic environment - acute

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).
 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).

Page 21 of 22
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)
 Revision date / version: 24.09.2024 / 0010
 Replacing version dated / version: 04.06.2024 / 0009
 Valid from: 24.09.2024
 PDF print date: 24.09.2024
 Octane Booster

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
 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
 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)
 Log Koc Logarithm of adsorption coefficient of organic carbon in the soil
 Log Kow, Log Pow Logarithm of octanol-water partition coefficient
 LQ Limited Quantities
 MARPOL International Convention for the Prevention of Marine Pollution from Ships
 mg/kg bw mg/kg body weight
 mg/kg bw/d, mg/kg bw/day mg/kg body weight/day
 mg/kg dw mg/kg dry weight
 mg/kg wwt mg/kg wet weight

Page 22 of 22

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II (last amended by Regulation (EU) 2020/878)

Revision date / version: 24.09.2024 / 0010

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Octane Booster

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. 6/7/8/9xx-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

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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