

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

Marine 4T Motor Oil 10W-40

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

Relevant identified uses of the substance or mixture:

See definition of the substance or mixture.

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)

The mixture is not classified as dangerous in the terms of the Regulation (EC) 1272/2008 (CLP).

2.2 Label elements

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

EUH208-Contains Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts, Alkyl (C18-C28) toluenesulfonic acid, calcium salts, borated. May produce an allergic reaction.
EUH210-Safety data sheet available on request.

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 %).

Page 2 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based	
Registration number (REACH)	01-2119474889-13-XXXX
Index	649-483-00-5
EINECS, ELINCS, NLP, REACH-IT List-No.	276-738-4
CAS	72623-87-1
content %	30-<50
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Asp. Tox. 1, H304
Highly refined mineral oil (C15 - C50) *	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	---
content %	5-<15
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Asp. Tox. 1, H304
Phosphorodithioic acid, mixed O,O-bis(sec-Bu and 1,3-dimethylbutyl) esters, zinc salts	
Registration number (REACH)	01-2119657973-23-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	272-238-5
CAS	68784-31-6
content %	1-<2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Eye Dam. 1, H318 Aquatic Chronic 2, H411
Alkyl (C18-C28) toluenesulfonic acid, calcium salts, borated	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	953-650-0
CAS	---
content %	0,1-<2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Skin Sens. 1B, H317 Repr. 2, H361d
Specific Concentration Limits and ATE	Repr. 2, H361d: >=17,15 %
Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	682-816-2
CAS	722503-68-6
content %	0,1-<1
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Skin Sens. 1B, H317

Impurities, test data and additional information may have been taken into account in classifying and labelling the product.
 For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

* The contained mineral oil can be described by one or more of the following numbers:

EINECS, ELINCS, NLP, REACH-IT List-No.	Registration number (REACH)	Chemical name
265-090-8	--	Baseoil - unspecified
265-091-3	--	Distillates (petroleum), solvent-refined light paraffinic
265-097-6	--	Distillates (petroleum), solvent-refined heavy naphthenic
265-098-1	--	Distillates (petroleum), solvent-refined light naphthenic
265-101-6	--	Baseoil - unspecified

Page 3 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

265-156-6	--	Distillates (petroleum), hydrotreated light naphthenic
265-157-1	01-2119484627-25-XXXX	Distillates (petroleum), hydrotreated heavy paraffinic
265-158-7	01-2119487077-29-XXXX	Distillates (petroleum), hydrotreated light paraffinic
265-159-2	--	Distillates (petroleum), solvent-dewaxed light paraffinic
265-169-7	01-2119471299-27-XXXX	Distillates (petroleum), solvent-dewaxed heavy paraffinic
276-737-9	--	Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based
276-738-4	--	Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based
278-012-2	--	Baseoil - unspecified
265-155-0	--	Baseoil - unspecified
276-735-8	--	Lubricating oils (petroleum), C>25, hydrotreated bright stock-based
276-736-3	--	Baseoil - unspecified
265-096-0	--	Residual oils (petroleum), solvent deasphalted
265-160-8	--	Residual oils (petroleum), hydrotreated
265-161-3	--	Lubricating oils (petroleum), hydrotreated spent
265-166-0	--	Residual oils (petroleum), solvent-dewaxed
265-176-5	--	Paraffin oils (petroleum), catalytic dewaxed light

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.

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

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. Consult doctor immediately.
 Danger of aspiration.

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.

The following may occur:

Drying of the skin.
 Irritation of the eyes
 Allergic reaction possible.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

CO₂
 Foam
 Dry extinguisher
 Water jet spray

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Page 4 of 14
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 13.01.2022 / 0013
Replacing version dated / version: 01.11.2021 / 0012
Valid from: 13.01.2022
PDF print date: 14.01.2022
Marine 4T Motor Oil 10W-40

In case of fire the following can develop:

Oxides of carbon
Oxides of phosphorus
Oxides of sulphur
Oxides of nitrogen
Metal oxides
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.
Full protection, if necessary.
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.
Ensure sufficient supply of air.
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

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, sawdust) and dispose of according to Section 13.
Fill the absorbed material into lockable containers.
Do not wash away with water or watery cleaning agents.

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.
Avoid formation of oil mist.
Avoid contact with eyes.
Avoid long lasting or intensive contact with 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.

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

Not to be stored in gangways or stair wells.

Page 5 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
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 Marine 4T Motor Oil 10W-40

Store product closed and only in original packing.
 Under all circumstances prevent penetration into the soil.
 Store at room temperature.
 Store in a dry place.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Chemical Name	Oil mist, mineral	Content %:
WEL-TWA: 5 mg/m ³ (Mineral oil, excluding metal working fluids, ACGIH)	WEL-STEL: ---	---
Monitoring procedures:	- Draeger - Oil Mist 1/a (67 33 031)	
BMGV: ---	Other information: ---	

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Human - oral		PNEC	9,33	mg/kg feed	
Consumer	Human - inhalation	Long term, local effects	DNEL	1,2	mg/m ³	24h
Workers / employees	Human - inhalation	Long term, local effects	DNEL	5,4	mg/m ³	8h

Phosphorodithioic acid, mixed O,O-bis(sec-Bu and 1,3-dimethylbutyl) esters, zinc salts

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - water		PNEC	4	µg/l	
	Environment - marine		PNEC	4,6	µg/l	
	Environment - water, sporadic (intermittent) release		PNEC	4,4	µg/l	
	Environment - sediment, marine		PNEC	0,00701	mg/kg	
	Environment - soil		PNEC	0,0548	mg/kg	
	Environment - oral (animal feed)		PNEC	8,33	mg/kg	
	Environment - sewage treatment plant		PNEC	3,8	mg/l	
Consumer	Human - dermal	Long term, systemic effects	DNEL	4,8	mg/kg	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,19	mg/kg	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	1,67	mg/kg	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	9,6	mg/kg	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	6,6	mg/kg	

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	

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.

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 (EN 166) with side protection, with danger of splashes.

Skin protection - Hand protection:

Protective nitrile 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:

Normally not necessary.

If OES or MEL is exceeded.

Filter A P2 (EN 14387), code colour brown, white

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.

Page 7 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

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:	Brown
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
Lower explosion limit:	There is no information available on this parameter.
Upper explosion limit:	There is no information available on this parameter.
Flash point:	230 °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:	94,0 mm ² /s (40°C)
Kinematic viscosity:	14,5 mm ² /s (100°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:	0,865 g/cm ³
Relative vapour density:	There is no information available on this parameter.
Particle characteristics:	Does not apply to liquids.

9.2 Other information

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

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

Hazardous reactions will not occur during storage and handling under normal conditions.

10.4 Conditions to avoid

See also section 7.

Protect from humidity.

Open flame, ignition sources

10.5 Incompatible materials

See also section 7.

Avoid contact with strong oxidizing agents.

10.6 Hazardous decomposition products

See also section 5.2

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).

Marine 4T Motor Oil 10W-40

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.

Page 8 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						Not irritant, Expert judgement
Respiratory or skin sensitisation:						No (skin contact), Expert judgement
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.

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based						
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	>5,53	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	
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)
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 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative, Analogous conclusion
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative, Analogous conclusion
Carcinogenicity:					OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Negative
Carcinogenicity:				Mouse	OECD 451 (Carcinogenicity Studies)	Negative, Analogous conclusion
Reproductive toxicity:					OECD 414 (Prenatal Developmental Toxicity Study)	Negative
Reproductive toxicity:					OECD 421 (Reproduction/Developmental Toxicity Screening Test)	Negative

Page 9 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

Reproductive toxicity:				Rat	OECD 421 (Reproduction/Developmental Toxicity Screening Test)	Negative, Analogous conclusion
Specific target organ toxicity - repeated exposure (STOT-RE):					OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Negative
Specific target organ toxicity - repeated exposure (STOT-RE):					OECD 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)	Negative
Specific target organ toxicity - repeated exposure (STOT-RE):					OECD 410 (Repeated Dose Dermal Toxicity - 90-Day)	Negative
Specific target organ toxicity - repeated exposure (STOT-RE):					OECD 411 (Subchronic Dermal Toxicity - 90-day Study)	Negative
Specific target organ toxicity - repeated exposure (STOT-RE):					OECD 412 (Subacute Inhalation Toxicity - 28-Day Study)	Negative
Aspiration hazard:						Asp. Tox. 1

Phosphorodithioic acid, mixed O,O-bis(sec-Bu and 1,3-dimethylbutyl) esters, zinc salts						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	2900	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Dam. 1
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOAEL	125	mg/kg bw/d	Rat	OECD 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)	Analogous conclusion

Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Respiratory or skin sensitisation:						Yes (skin contact), Analogous conclusion

11.2. Information on other hazards

Marine 4T Motor Oil 10W-40						
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.

SECTION 12: Ecological information

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

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

Marine 4T Motor Oil 10W-40							
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:							DOC-elimination degree (complexing organic substance) \geq 80%/28d: No

Lubricating oils (petroleum), C20-50, hydrotreated neutral oil-based							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to bacteria:	NOEC/NOEL	10min	> 1,93	mg/l	activated sludge		DIN 38412
12.1. Toxicity to fish:	NOEC/NOEL	96h	\geq 100	mg/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to fish:	LL50	96h	> 100	mg/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EL50	48h	>10000	mg/l	Daphnia magna	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)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	\geq 100	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EL50	48h	>100	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:						OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Not readily biodegradable
12.2. Persistence and degradability:		28d	46	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	

Page 11 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

12.3. Bioaccumulative potential:	Log Kow		>6				A notable biological accumulation potential has to be expected (LogPow > 3).
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

Phosphorodithioic acid, mixed O,O-bis(sec-Bu and 1,3-dimethylbutyl) esters, zinc salts							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LL50	96h	4,4	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EL50	48h	75	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EL50	72h	410	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		27d	<5	%		Regulation (EC) 440/2008 C.6 (DEGRADATION - CHEMICAL OXYGEN DEMAND)	Not biodegradable

SECTION 13: Disposal considerations

13.1 Waste treatment methods

For the substance / mixture / residual amounts

Soaked polluted cloths, paper or other organic materials represent a fire hazard and should be controlled, collected and disposed of.
 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)

07 06 99 wastes not otherwise specified

13 02 05 mineral-based non-chlorinated engine, gear and lubricating oils

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. dispose at suitable refuse site.

E.g. suitable incineration plant.

For contaminated packing material

Pay attention to local and national official regulations.

15 01 01 paper and cardboard packaging

15 01 02 plastic packaging

15 01 04 metallic packaging

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)

Page 12 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

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

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:
 General hygiene measures for the handling of chemicals are applicable.

Directive 2010/75/EU (VOC): 0 %

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 2, 3, 11, 12, 15

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

Not applicable

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).

H361d Suspected of damaging the unborn child.
 H317 May cause an allergic skin reaction.
 H304 May be fatal if swallowed and enters airways.
 H318 Causes serious eye damage.
 H411 Toxic to aquatic life with long lasting effects.

Asp. Tox. — Aspiration hazard
 Eye Dam. — Serious eye damage
 Aquatic Chronic — Hazardous to the aquatic environment - chronic
 Skin Sens. — Skin sensitization
 Repr. — Reproductive toxicity

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 13 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 13.01.2022 / 0013
 Replacing version dated / version: 01.11.2021 / 0012
 Valid from: 13.01.2022
 PDF print date: 14.01.2022
 Marine 4T Motor Oil 10W-40

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)
 Log Koc Logarithm of adsorption coefficient of organic carbon in the soil

Page 14 of 14
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 13.01.2022 / 0013
Replacing version dated / version: 01.11.2021 / 0012
Valid from: 13.01.2022
PDF print date: 14.01.2022
Marine 4T Motor Oil 10W-40

Log Kow, Log Pow 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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