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

Revision date / version: 18.09.2022 / 0038

Replacing version dated / version: 01.11.2021 / 0037

Valid from: 18.09.2022 PDF print date: 20.02.2024 Engine Flush Plus

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

1.1 Product identifier

Engine Flush Plus

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

Cleaner

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

LIQUI MOLY GmbH Jerg-Wieland-Str. 4 89081 Ulm-Lehr

Tel.: (+49) 0731-1420-0 Fax: (+49) 0731-1420-88

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

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)

+1 872 5888271 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)
Hazard class Hazard category Hazard statement

Eye Irrit. 2 Hazard category Hazard statement H319-Causes serious eye irritation.

Skin Sens. 1 H317-May cause an allergic skin reaction.

Asp. Tox. 1 H304-May be fatal if swallowed and enters airways.

2.2 Label elements

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





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Danger

H319-Causes serious eye irritation. H317-May cause an allergic skin reaction. H304-May be fatal if swallowed and enters airways.

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. P280-Wear protective gloves / 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. P314-Get medical advice / attention if you feel unwell. 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.

Distillates (petroleum), hydrotreated heavy paraffinic

Distillates (petroleum), solvent-dewaxed heavy paraffinic

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

Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts

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.

In case of spreading near the ground, flashback to distance sources of ignition is possible.

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 %	70-<90
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH066
	Asp. Tox. 1, H304

Distillates (petroleum), hydrotreated heavy paraffinic	
Registration number (REACH)	01-2119484627-25-XXXX
Index	649-467-00-8
EINECS, ELINCS, NLP, REACH-IT List-No.	265-157-1
CAS	64742-54-7
content %	0-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Asp. Tox. 1, H304

Distillates (petroleum), solvent-dewaxed heavy paraffinic	
Registration number (REACH)	01-2119471299-27-XXXX
Index	649-474-00-6
EINECS, ELINCS, NLP, REACH-IT List-No.	265-169-7
CAS	64742-65-0
content %	0-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Asp. Tox. 1, H304



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Distillates (petroleum), solvent-dewaxed light paraffinic	
Registration number (REACH)	01-2119480132-48-XXXX
Index	649-469-00-9
EINECS, ELINCS, NLP, REACH-IT List-No.	265-159-2
CAS	64742-56-9
content %	0-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Asp. Tox. 1, H304

Dhearth and diship and mined O.O. bis/O. sthall and in a Day agree	
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu) esters,	
zinc salts	
Registration number (REACH)	01-2119948548-22-XXXX
Index	
EINECS, ELINCS, NLP, REACH-IT List-No.	270-478-5
CAS	68442-22-8
content %	1-<2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Skin Irrit. 2, H315
	Eye Dam. 1, H318
	Aquatic Chronic 2, H411

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 %	1-<2,5
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 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. 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.

If the person is unconscious, place in a stable side position and consult a doctor.

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.

Eve contact

Remove contact lenses.

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

Ingestion

Rinse the mouth thoroughly with water.

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

Danger of aspiration.

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

4.2 Most important symptoms and effects, both acute and delayed



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

eyes, reddened watering eyes

With long-term contact:

Nausea Dizziness

Product removes fat. Drying of the skin.

Dermatitis (skin inflammation)

Ingestion: Vomiting

Danger of aspiration.

Oedema of the lungs

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

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

Ingestion:

Activated carbon

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

CO₂

Extinction powder

Foam

Water jet spray

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

Hydrocarbons

Toxic pyrolysis products.

Flammable vapour/air mixtures

5.3 Advice for firefighters

For personal protective equipment see Section 8.

In case of fire and/or explosion do not breathe fumes.

Protective respirator with independent air supply.

According to size of fire

Full protection, if necessary.

Cool container at risk with water.

Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.

Ensure sufficient ventilation, remove sources of ignition.

Avoid dust formation with solid or powder products.

Leave the danger zone if possible, use existing emergency plans if necessary.

Remove possible causes of ignition - do not smoke.

Ensure sufficient supply of air.

Avoid inhalation, and contact with eyes or skin.

If applicable, caution - risk of slipping.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.



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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) and dispose of according to Section 13.

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.

Do not heat to temperatures close to flash point.

Take measures against electrostatic charging, if appropriate.

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.

Store product closed and only in original packing.

Not to be stored in gangways or stair wells.

Solvent resistant floor

Do not store with oxidizing agents.

Protect from direct sunlight and warming.

Store in a well ventilated place.

7.3 Specific end use(s)

No information available at present.

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% aron	natics
WEL-TWA: 800 mg/m3	WEL-STEL:	
Monitoring procedures:	 Draeger - Hydrocarbons 0,1%/c (81 03 571) 	
	 Draeger - Hydrocarbons 2/a (81 03 581) 	
	- Compur - KITA-187 S (551 174)	
BMGV:	Other inform	mation: (OEL acc. to RCP-method,
	paragraphs	s 84-87, EH40)
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Chemical Name	Oil mist, mineral			
WEL-TWA: 5 mg/m3 (Mineral oil, e	excluding metal	WEL-STEL:		
working fluids, ACGIH)				
Monitoring procedures:	=	Draeger - Oil Mist 1/a (67 33 031)		
BMGV:			Other information:	-

Area of application	Exposure route /	Effect on health	Descriptor	Value	Unit	Note
	Environmental					
	compartment					
	Environment - oral (animal feed)		PNEC	9,33	mg/kg	
Consumer	Human - inhalation	Long term, local effects	DNEL	1,19	mg/m3	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,74	mg/kg	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	5,58	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	0,97	mg/kg	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	2,73	mg/m3	

	olvent-dewaxed heavy paraffinic	Effect on health	December	Value	I Imit	Note
Area of application	Exposure route /	Effect on nearth	Descriptor	value	Unit	Note
	Environmental					
	compartment					
	Environment - oral (animal		PNEC	9,33	mg/kg feed	
	feed)					
Consumer	Human - inhalation	Long term, local effects	DNEL	1,19	mg/m3	
Consumer	Human - oral	Long term, systemic	DNEL	0,74	mg/kg bw/d	
		effects				
Workers / employees	Human - inhalation	Long term, local effects	DNEL	5,58	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic	DNEL	2,73	mg/m3	
. ,		effects				
Workers / employees	Human - dermal	Long term, systemic	DNEL	0,97	mg/kg bw/d	
		effects				

Distillates (petroleum), solve	ent-dewaxed light paraffinic					
Area of application	Exposure route / Environmental	Effect on health	Descriptor	Value	Unit	Note
	Environment - oral (animal		PNEC	9,33	mg/kg feed	
	feed)			,,,,,	99	
Consumer	Human - inhalation	Long term, local effects	DNEL	1,19	mg/m3	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,74	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	2,73	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	5,58	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	0,97	mg/kg bw/day	

rea of application	Exposure route / Environmental	Effect on health	Descriptor	Value	Unit	Note
	compartment					
	Environment - freshwater		PNEC	4	μg/l	
	Environment - marine		PNEC	4,6	μg/l	
	Environment - sewage		PNEC	100	mg/l	
	treatment plant					



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	Environment - sediment, freshwater		PNEC	0,045	mg/kg dry weight
	Environment - sediment, marine		PNEC	0,005	mg/kg dw
	Environment - soil		PNEC	0,007	mg/kg dry weight
	Environment - oral (animal feed)		PNEC	10,67	mg/kg feed
Consumer	Human - dermal	Long term, systemic effects	DNEL	5,71	mg/kg bw/day
Consumer	Human - inhalation	Long term, systemic effects	DNEL	1,98	mg/m3
Consumer	Human - oral	Long term, systemic effects	DNEL	0,24	mg/kg bw/day
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	11,4	mg/kg bw/day
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	8,05	mg/m3

- 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/CE, 2017/164/EU). (9) = Respirable fraction (2004/37/CE, 2017/164/EU). (11) = Inhalable fraction (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 (2004/37/CE).
- | 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/CE), (14) = The substance can cause sensitisation of the skin (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:

Solvent resistant protective gloves (EN ISO 374).

If applicable

Protective nitrile gloves (EN ISO 374).



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Minimum layer thickness in mm:

0,4

Permeation time (penetration time) in minutes:

>480

Protective hand cream recommended.

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.

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.

Filter A2 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

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: Orange 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:

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: 3,462 mm2/s (40°C) Insoluble

Solubility:

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: 0.808 g/cm3 (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: 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



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Stable with proper storage and handling. 10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

Open flame, ignition sources

10.5 Incompatible materials

Avoid contact with strong oxidizing agents.

10.6 Hazardous decomposition products

No decomposition when used as directed.

SECTION 11: Toxicological information

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

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

Engine Flush Plus						
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.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin						n.d.a.
sensitisation:						
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity -						n.d.a.
single exposure (STOT-SE):						
Specific target organ toxicity -						n.d.a.
repeated exposure (STOT-RE):						
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 401 (Acute Oral	Analogous
					Toxicity)	conclusion
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute	Analogous
					Dermal Toxicity)	conclusion
Acute toxicity, by inhalation:	LC50	>4951	mg/m3/4h	Rat	OECD 403 (Acute	Analogous
					Inhalation Toxicity)	conclusion,
						Vapours
Skin corrosion/irritation:					OECD 404 (Acute	Not irritant,
					Dermal	Analogous
					Irritation/Corrosion)	conclusion
Serious eye damage/irritation:					OECD 405 (Acute Eye	Not irritant,
					Irritation/Corrosion)	Analogous
						conclusion
Respiratory or skin					OECD 406 (Skin	Not sensitizising
sensitisation:					Sensitisation)	Analogous
						conclusion
Germ cell mutagenicity:					OECD 473 (In Vitro	Negative,
					Mammalian	Analogous
					Chromosome	conclusion
					Aberration Test)	
Germ cell mutagenicity:					OECD 474 (Mammalian	Negative,
					Erythrocyte	Analogous
					Micronucleus Test)	conclusion
Germ cell mutagenicity:				Salmonella	OECD 471 (Bacterial	Negative
				typhimurium	Reverse Mutation Test)	



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Carcinogenicity:	OECD 453 (Combined Negative,
	Chronic Analogous
	Toxicity/Carcinogenicity conclusion
	Studies)
Reproductive toxicity:	OECD 414 (Prenatal Negative,
	Developmental Toxicity Analogous
	Study) conclusion
Specific target organ toxicity -	OECD 408 (Repeated Negative,
repeated exposure (STOT-RE):	Dose 90-Day Oral Analogous
	Toxicity Study in conclusion
	Rodents)
Aspiration hazard:	Yes
Symptoms:	unconsciousness
	, headaches,
	dizziness,
	mucous
	membrane
	irritation

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 420 (Acute Oral	Analogous
				112	toxicity - Fixe Dose	conclusion
					Procedure)	00.1010.011
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	OECD 402 (Acute	Analogous
,, ,, .,			3 3		Dermal Toxicity)	conclusion
Acute toxicity, by inhalation:	LC50	>5,53	mg/l/4h	Rat	OECD 403 (Acute	Aerosol,
,, , ,		-,	3		Inhalation Toxicity)	Analogous
					,	conclusion
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute	Not irritant,
					Dermal	Analogous
					Irritation/Corrosion)	conclusion
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye	Not irritant,
concae eye aamage/iimaaeiii				1100011	Irritation/Corrosion)	Analogous
					intation/Corresion/	conclusion
Respiratory or skin				Guinea pig	OECD 406 (Skin	No (skin
sensitisation:				Ourica pig	Sensitisation)	contact),
Scrisiusauori.					ochsidadion)	Analogous
						conclusion
Germ cell mutagenicity:				Salmonella	OECD 471 (Bacterial	Negative,
				typhimurium	Reverse Mutation Test)	Analogous
				тургштитит	Reverse Mutation Test)	conclusion
Germ cell mutagenicity:					OECD 473 (In Vitro	Negative,
Germ cen mutagenicity.					Mammalian	
					Chromosome	Analogous conclusion
Common cell mounte ma miniture				Maura	Aberration Test) OECD 476 (In Vitro	Chinese hamste
Germ cell mutagenicity:				Mouse		Negative,
					Mammalian Cell Gene	Analogous
O				N4	Mutation Test)	conclusion
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian	Negative,
					Erythrocyte	Analogous
					Micronucleus Test)	conclusion
Carcinogenicity:				Mouse	OECD 451	Negative,
					(Carcinogenicity Studies)	Analogous
						conclusion 78
						weeks, dermal
Reproductive toxicity				Rat	OECD 414 (Prenatal	Negative,
(Developmental toxicity):					Developmental Toxicity	Analogous
					Study)	conclusion
						dermal
Reproductive toxicity:				Rat	OECD 421	Negative,
					(Reproduction/Developm	Analogous
					ental Toxicity Screening	conclusion oral
					Test)	



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A ' ('	T		1			T A T 4
Aspiration hazard:						Asp. Tox. 1
Specific target organ toxicity -	LOAEL	125	mg/kg	Rat	OECD 408 (Repeated	Analogous
repeated exposure (STOT-RE),					Dose 90-Day Oral	conclusion
oral:					Toxicity Study in	
					Rodents)	
Symptoms:						gastrointestinal
						disturbances,
						diarrhoea
Specific target organ toxicity -	NOAEL	1000	mg/kg	Rabbit	OECD 410 (Repeated	Analogous
repeated exposure (STOT-RE),					Dose Dermal Toxicity -	conclusion
dermal:					90-Day)	
Specific target organ toxicity -	NOAEL	0,22	mg/l	Rat		Dust, Mist,
repeated exposure (STOT-RE),						Analogous
inhalat.:						conclusion 4
						weeks

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:	LD50	>5,53	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol
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	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative, Analogous conclusion
Germ cell mutagenicity:				Mammalian	OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative, Analogous conclusion Chinese hamste
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative, Analogous conclusion
Germ cell mutagenicity:				Mouse	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative, Analogous conclusion
Carcinogenicity:				Mouse	OECD 451 (Carcinogenicity Studies)	Negative, Analogous conclusion 78 weeks, dermal
Reproductive toxicity (Developmental toxicity):				Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative, Analogous conclusion dermal
Carcinogenicity:				Mouse		Female, Negativ
Reproductive toxicity:				Rat		Negative
Reproductive toxicity (Effects on fertility):				Rat	OECD 421 (Reproduction/Developm ental Toxicity Screening Test)	Negative, Analogous conclusion oral, dermal
Specific target organ toxicity - repeated exposure (STOT-RE), dermal:	NOAEL	~1000	mg/kg bw/d	Rabbit	OECD 410 (Repeated Dose Dermal Toxicity - 90-Day)	Analogous conclusion



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Aspiration hazard:						Yes
Symptoms:						mucous membrane
						irritation, dizziness,
Specific target organ toxicity - repeated exposure (STOT-RE), dermal:	NOAEL	30	mg/kg/d	Rat	OECD 411 (Subchronic Dermal Toxicity - 90-day Study)	Analogous conclusion
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	0,22	mg/l	Rat		Aerosol, Analogous conclusion 4 weeks
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	0,15	mg/l	Rat		Aerosol, Analogous conclusion 13 weeks

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	Aerosol
• •					Inhalation Toxicity)	
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute	Not irritant
					Dermal	
					Irritation/Corrosion)	
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye	Not irritant
, ,					Irritation/Corrosion)	
Respiratory or skin				Guinea pig	OECD 406 (Skin	No (skin contact)
sensitisation:					Sensitisation)	, ,
Germ cell mutagenicity:				Salmonella	OECD 471 (Bacterial	Negative
g ,				typhimurium	Reverse Mutation Test)	· ·
Germ cell mutagenicity:				Mammalian	OECD 474 (Mammalian	Negative
					Erythrocyte	
					Micronucleus Test)	
Germ cell mutagenicity:				Mammalian	OECD 473 (In Vitro	Negative,
					Mammalian `	Analogous
					Chromosome	conclusion
					Aberration Test)	Chinese hamster
Germ cell mutagenicity:				Mouse	OECD 476 (In Vitro	Negative
					Mammalian Cell Gene	_
					Mutation Test)	
Reproductive toxicity:	NOAEL	>1000	mg/kg	Rat	OECD 421	Negative
			bw/d		(Reproduction/Developm	
					ental Toxicity Screening	
					Test)	
Reproductive toxicity:	NOAEL	>2000	mg/kg	Rat	OECD 414 (Prenatal	
			bw/d		Developmental Toxicity	
					Study)	
Aspiration hazard:						Yes
Symptoms:						drying of the
						skin., vomiting,
						nausea

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu) esters, zinc salts							
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes	
Acute toxicity, by oral route:	LD50	4358	mg/kg	Rat			
Acute toxicity, by dermal route:	LD50	>2002	mg/kg	Rat	OECD 402 (Acute		
_					Dermal Toxicity)		



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Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal	Skin Irrit. 2
					Irritation/Corrosion)	
Serious eye damage/irritation:				Rabbit	,	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, Analogous conclusion
Germ cell mutagenicity:				Mouse	OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative, Analogous conclusion
Specific target organ toxicity - repeated exposure (STOT-RE), oral:	NOEL	160	mg/kg bw/d	Rat	OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test)	Negative, Analogous conclusion

Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts							
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes	
Acute toxicity, by inhalation:	LC50	5,1	mg/l/4h	Rat		Aerosol	
Acute toxicity, by inhalation:	LC50	20,1	mg/l/4h	Rat		Vapours	
Respiratory or skin						Yes (skin	
sensitisation:						contact),	
						Analogous	
						conclusion	

11.2. Information on other hazards

Engine Flush Plus						
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	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).

Engine Flush Plus											
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							n.d.a.				
degradability:											
12.3. Bioaccumulative							n.d.a.				
potential:											
12.4. Mobility in soil:							n.d.a.				
12.5. Results of PBT							n.d.a.				
and vPvB assessment											



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12.6. Endocrine				Does not apply
disrupting properties:				to mixtures.
12.7. Other adverse				No information
effects:				available on
				other adverse
				effects on the
				environment.
Other information:	AOX			According to the
				recipe, contains
				no AOX.
Other information:				DOC-elimination
				degree(complexi
				ng organic
				substance)>=
				80%/28d: No

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	Pseudokirchneriell a 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	Tetrahymen pyriformis		
Water solubility:							Product floats on the water surface.

Distillates (petroleum), h	ydrotreated hea	vy paraffin	ic				
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LL50	96h	>100	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	Analogous conclusion
12.1. Toxicity to fish:	NOEC/NOEL	28d	>1000	mg/l	Oncorhynchus mykiss	QSAR	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	10	mg/l	Daphnia magna	QSAR	Analogous conclusion
12.1. Toxicity to daphnia:	EC50	48h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	Analogous conclusion



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12.1. Toxicity to algae:	EC50	48h	>100	mg/l	Pseudokirchneriell	OECD 201 (Alga,	
					a subcapitata	Growth Inhibition	
						Test)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	>=100	mg/l	Pseudokirchneriell	OECD 201 (Alga,	Analogous
					a subcapitata	Growth Inhibition	conclusion
						Test)	
12.2. Persistence and		28d	31	%	activated sludge	OECD 301 F	Not readily
degradability:						(Ready	biodegradable,
						Biodegradability -	Analogous
						Manometric	conclusion
						Respirometry Test)	
12.2. Persistence and		28d	6	%		OECD 301 B	Not readily
degradability:						(Ready	biodegradable
						Biodegradability -	
						Co2 Evolution	
						Test)	
12.3. Bioaccumulative	Log Pow		3,9-6				High
potential:							
12.5. Results of PBT							No PBT
and vPvB assessment							substance, No
							vPvB substance
Other information:	AOX		0	%			

Distillates (petroleum), s				111.4	_ ·	T =	N1 4
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>1000	mg/l	Salmo gairdneri		
12.1. Toxicity to fish:	LC50	96h	>5000	mg/l	Oncorhynchus	OECD 203 (Fish,	
					mykiss	Acute Toxicity	
						Test)	
12.1. Toxicity to fish:	NOEC/NOEL	21d	1000	mg/l	Oncorhynchus	QSAR	
					mykiss		
12.1. Toxicity to fish:	LC50	96h	>100	mg/l	Pimephales	OECD 203 (Fish,	Analogous
•					promelas	Acute Toxicity	conclusion
					'	Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	10	mg/l	Daphnia magna	OEĆD 211	Analogous
, ,					'	(Daphnia magna	conclusion
						Reproduction Test)	
12.1. Toxicity to daphnia:	EC50	48h	>1000	mg/l	Daphnia magna	OECD 202	Analogous
·=··· romenty to daprimar	-000		7 .000		Japinia magna	(Daphnia sp.	conclusion
						Acute	COTTOTAGIOTT
						Immobilisation	
						Test)	
12.1. Toxicity to algae:	EC50	96h	>1000	mg/l	Scenedesmus	1651)	
12.1. Toxicity to algae.	LC30	9011	>1000	1119/1	subspicatus		
12.2. Persistence and		28d	6	%	Subspicatus	OECD 301 B	Analogous
degradability:		20U	0	70		(Ready	conclusion
degradability.							Conclusion
						Biodegradability -	
						Co2 Evolution	
1000		00.1				Test)	N
12.2. Persistence and		28d	31	%	activated sludge	OECD 301 F	Not readily
degradability:						(Ready	biodegradable
						Biodegradability -	(Analogous
						Manometric	conclusion)
						Respirometry Test)	
12.3. Bioaccumulative	Log Pow		>3				Low
potential:							
12.5. Results of PBT							No PBT
and vPvB assessment							substance, No
							vPvB substance
Toxicity to bacteria:	EC20	6h	>1000	mg/l	Pseudomonas		
ř					fluorescens		

Distillates (petroleum), solvent-dewaxed light paraffinic										
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes			



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12.1. Toxicity to fish:	LL50	96h	>100	mg/l	Pimephales	OECD 203 (Fish,	
					promelas	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:	LL50	48h	>1000	mg/l	Gammarus sp.	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	>100	mg/l	Pseudokirchneriell	OECD 201 (Alga,	
					a subcapitata	Growth Inhibition	
						Test)	
12.2. Persistence and		28d	31	%	activated sludge	OECD 301 F	Inherent
degradability:						(Ready	
						Biodegradability -	
						Manometric	
						Respirometry Test)	
12.3. Bioaccumulative potential:	Log Pow		>3				Low
12.5. Results of PBT							No PBT
and vPvB assessment							substance, No
							vPvB substance

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LL50	96h	4,5	mg/l	Oncorhynchus	OECD 203 (Fish,	
					mykiss	Acute Toxicity	
						Test)	
12.1. Toxicity to fish:	LC50	96h	46	mg/l	Cyprinodon	OECD 203 (Fish,	
					variegatus	Acute Toxicity	
						Test)	
12.1. Toxicity to daphnia:	EL50	48h	23	mg/l	Daphnia magna	OECD 202	
						(Daphnia sp.	
						Acute	
						Immobilisation	
						Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	0,4	mg/l	Daphnia magna	OECD 211	
						(Daphnia magna	
						Reproduction Test)	
12.1. Toxicity to algae:	EL50	72h	21	mg/l	Desmodesmus	OECD 201 (Alga,	
					subspicatus	Growth Inhibition	
						Test)	
12.2. Persistence and		28d	1,5	%	activated sludge	OECD 301 B	Not readily
degradability:						(Ready	biodegradable
						Biodegradability -	
						Co2 Evolution	
						Test)	
Toxicity to bacteria:	EC50	3h	>10000	mg/l	activated sludge	OECD 209	
						(Activated Sludge,	
						Respiration	
						Inhibition Test	
						(Carbon and	
						Ammonium	
						Oxidation))	

Benzenesulfonic acid, methyl-, mono-C20-24-branched alkyl derivs., calcium salts										
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes			



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12.2. Persistence and degradability:

Not readily 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 07 04 other organic solvents, washing liquids and mother liquors

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):

14.4. Packing group:

14.5. Environmental hazards:

14.6. Environmental hazards:

14.7. Environmental hazards:

14.8. Environmental hazards:

15. Environmental hazards:

16. Not applicable

17. Not applicable

18. Not applicable

19. 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 applicable14.4. Packing group:Not applicable14.5. Environmental hazards:Not applicableMarine Pollutant:Not applicableEmS: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):
14.4. Packing group:
14.5. Environmental hazards:
Not applicable
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



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

Observe restrictions:

Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)! Comply with trade association/occupational health regulations.

Directive 2010/75/EU (VOC):

88,371 %

REGULATION (EC) No 648/2004

30 % and more aliphatic hydrocarbons less than 5 % phosphates aromatic hydrocarbons

National rules/regulation for the compliance with maximum quantities with regard to phosphates and or phosphorous compounds must be observed and complied with.

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:

2

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	Evaluation method used
(EC) No. 1272/2008 (CLP)	
Eye Irrit. 2, H319	Classification according to calculation procedure.
Skin Sens. 1, H317	Classification according to calculation procedure.
Asp. Tox. 1, H304	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.

H317 May cause an allergic skin reaction.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

EUH066 Repeated exposure may cause skin dryness or cracking.

 $\hbox{ Eye Irrit.} -- \hbox{ Eye irritation}$

Skin Sens. — Skin sensitization
Asp. Tox. — Aspiration hazard
Skin Irrit. — Skin irritation

Eye Dam. — Serious eye damage

Aquatic Chronic — Hazardous to the aquatic environment - chronic

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.



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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

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 Europear

U 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



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

Revision date / version: 18.09.2022 / 0038

Replacing version dated / version: 01.11.2021 / 0037

Valid from: 18.09.2022 PDF print date: 20.02.2024 Engine Flush Plus

mg/kg bw/d, mg/kg bw/day mg/kg body weight/day

mg/kg dry weight mg/kg dw mg/kg wwt mg/kg wet weight

not applicable n.a. not available n.av. not checked n.c. n.d.a. no data available

NIOSH National Institute for Occupational Safety and Health (USA)

NI P 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

PΕ Polyethylene

PNEC Predicted No Effect Concentration

parts per million ppm Polyvinylchloride

REACHRegistration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)

6/7/8/9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical REACH-IT List-No.

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: Chemical Check Platz 1-7, D-32839 Steinheim, Tel.: +49 5233 94 17 0, Fax: +49 5233 94 17 90

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