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

1.1. Product identifier

Product form : Mixture
Trade name : 4-Stroke Marine Engine Oil 25W - 40
Product code : 8M0086225, 8M0086223, 8M0086224, 8M0121914
8M0206953, 8M0206954
Document no. : 766-01-0283S
(Original SDS: MSDS_ 0283S 70118_BRUNSWICK_EN_20220427)

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

1.2.1. Relevant identified uses

Intended for general public
Main use category : Industrial use, Professional use, Consumer use
Use of the substance/mixture : Lubricants and additives

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Brunswick Marine EMEA
Parc industriel de Petit-Rechain, Avenue Mercury 8
4800 Verviers - Belgium
T +32 (0)87 32 32 11
bme.compliance@brunswick.com

1.4. Emergency telephone number

Emergency number : 0032 3 575 55 55
This telephone number is available 24 hours per day, 7 days per week.

Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture



Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Extra phrases : EUH208 - Contains Molybdenum polysulphide long chain alkyl dithiocarbamate complex.
May produce an allergic reaction.
EUH210 - Safety data sheet available on request.

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Child-resistant fastening : Not applicable
Tactile warning : Not applicable

2.3. Other hazards

Other hazards : Results of PBT and vPvB assessment. Not applicable.

Component	
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) (2215-35-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Comments : Mineral oil (<3% DMSO)

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)	(CAS-No.) 2215-35-2 (EC-No.) 218-679-9 (REACH-no) 01-2119953275-34-xxxx	1 – 1,49	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411
Molybdenum polysulphide long chain alkyl dithiocarbamate complex	(EC-No.) 457-320-2 (REACH-no) 01-0000019337-66-XXXX	0,1 – 0,49	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 3, H412

Specific concentration limits:

Substance name	Product identifier	Specific concentration limits
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)	(CAS-No.) 2215-35-2 (EC-No.) 218-679-9 (REACH-no) 01-2119953275-34-xxxx	(10 <C ≤ 100) Eye Dam. 1, H318



Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice : First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.

Inhalation : Remove casualty to fresh air and keep warm and at rest. In case of doubt or persistent symptoms, consult always a physician.

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- Skin contact : Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.
- Eyes contact : Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of doubt or persistent symptoms, consult always a physician.
- Ingestion : Rinse mouth thoroughly with water. Do not induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

- Inhalation : No adverse effects are expected.
- Skin contact : No adverse effects are expected. Exposure may produce an allergic reaction.
- Eyes contact : No adverse effects are expected.
- Ingestion : May cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Alcohol resistant foam. dry extinguishing powder. Carbon dioxide.
- Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

- Specific hazards : Heating will cause a rise in pressure with a risk of bursting.
- Hazardous decomposition products in case of fire : Carbon oxides (CO, CO₂).

5.3. Advice for firefighters

- Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.
- Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel



- For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8.

6.1.2. For emergency responders

- For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

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6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so. Dam up the liquid spill. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Recover large spills by pumping (use an explosion proof or hand pump). Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment.

Handling temperature : < 40 °C

Hygiene measures : Keep good industrial hygiene. Wash hands immediately after handling the product. When using do not eat, drink or smoke. Keep away from food, drink and animal feedingstuffs. Separate working clothes from town clothes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Bund storage facilities to prevent soil and water pollution in the event of spillage.

Storage temperature : < 40 °C

Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Packaging materials : Keep only in the original container.

7.3. Specific end use(s)

Lubricants and additives.

SECTION 8: Exposure controls/personal protection



8.1. Control parameters

Additional information : Recommended monitoring procedures :. Personal air monitoring. Room air monitoring

8.2. Exposure controls

Engineering measure(s) : Provide adequate ventilation. Organisational measures to prevent/limit releases, dispersion and exposure. See Section 7 for information on safe handling .

Personal protective equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.



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Hand protection	: Wear chemically resistant gloves (tested to EN374) . Suitable material: Nitrile rubber. Thickness : > 0,35 mm. Breakthrough time : > 480 min. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Eye protection	: Use suitable eye protection (EN166): Safety glasses
Body protection	: Wear suitable protective clothing
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Half-face mask (DIN EN 140). full face mask (DIN EN 136). Filter type: ABEK + P. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. (EN 137)
Thermal hazard protection	: Not required for normal conditions of use. Use dedicated equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: liquid. Oily.
Colour	: brown.
Odour	: Characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting / freezing point	: No data available
Freezing point	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: > 200 °C (ASTM D92)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability	: Not applicable,liquid
Vapour pressure	: No data available
Vapour density	: No data available
Relative density	: No data available
Density	: 892 kg/m ³ (15 °C)
Solubility	: Water: Slightly soluble
Partition coefficient n-octanol/water	: No data available
Kinematic viscosity	: 145 mm ² /s (40 °C)
Dynamic viscosity	: No data available
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable

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Particle aggregation state : Not applicable
Particle agglomeration state : Not applicable
Particle specific surface area : Not applicable
Particle dustiness : Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None under normal conditions. Reference to other sections 10.4 & 10.5.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. See Section 7 for information on safe handling.

10.5. Incompatible materials

Strong oxidizing agents. Acids. Bases. See Section 7 for information on safe handling.

10.6. Hazardous decomposition products

Reference to other sections 5.2.

SECTION 11: Toxicological information

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

Acute toxicity : Not classified (Based on available data, the classification criteria are not met)



zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) (2215-35-2)	
LD50/oral/rat	2230 mg/kg (OECD 401)
LD50/dermal/rabbit	> 3160 mg/kg
LC50/inhalation/4h/rat	> 2 mg/l (Exposure time: 1 h)

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: No data available

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
On basis of test data (EC 218-679-9)
pH: No data available

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

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Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

4-Stroke Marine Engine Oil 25W - 40	
Kinematic viscosity	145 mm ² /s (40 °C)

Other adverse effects : No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

11.2.2 Other information

Other adverse effects : No information available

SECTION 12: Ecological information

12.1. Toxicity



Environmental properties : According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

zinc O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) (2215-35-2)	
LC50 - Fish [1]	(96h) 4,5 mg/l Oncorhynchus mykiss (Rainbow trout)
LC50 - Fish [2]	(96h) 46 mg/l Cyprinodon variegatus (sheepshead minnow)
EC50 - Crustacea [1]	(48h) 23 mg/l Daphnia magna (Big water flea)
EC50 72h - Algae [1]	21 mg/l Scenedesmus quadricauda
EC50 96h - Algae [1]	1 – 5 mg/l (Species: Pseudokirchneriella subcapitata)
NOEC (acute)	1,8 mg/l Oncorhynchus mykiss
NOEC chronic crustacea	0,4 mg/l

Molybdenum polysulphide long chain alkyl dithiocarbamate complex	
EC50 - Crustacea [1]	50 mg/l (48 h)
NOEC (acute)	94,8 mg/l (Oncorhynchus mykiss) 96h (OECD 203)
NOEC chronic algae	100 mg/l (Daphnia Magna) 21days

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12.2. Persistence and degradability

4-Stroke Marine Engine Oil 25W - 40	
Persistence and degradability	Minimally biodegradable.
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) (2215-35-2)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	1,5 % Sturm 28d
Molybdenum polysulphide long chain alkyl dithiocarbamate complex	
Persistence and degradability	Not readily biodegradable.
Biodegradation	22,75 % (OECD 301) (29d)

12.3. Bioaccumulative potential

4-Stroke Marine Engine Oil 25W - 40	
Partition coefficient n-octanol/water	No data available
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) (2215-35-2)	
Bioconcentration factor (BCF)	2,2 (0,1d)
Partition coefficient n-octanol/water	2,21 (at 20 °C (at pH >=5-<=6)
Partition coefficient n-octanol/water (Log Kow)	2,21 (20°C)
Molybdenum polysulphide long chain alkyl dithiocarbamate complex	
BCF - Fish [1]	88 (OECD 305, Cyprinus carpio, 25°C)

12.4. Mobility in soil

4-Stroke Marine Engine Oil 25W - 40	
Ecology - soil	No data available.



12.5. Results of PBT and vPvB assessment

4-Stroke Marine Engine Oil 25W - 40	
Results of PBT assessment	Not applicable

Component	
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) (2215-35-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : Not applicable

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12.7. Other adverse effects

Additional information : No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Do not allow to enter into surface water or drains. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations.

Additional information : Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
Not applicable				

14.6. Special precautions for user

Special precautions for user : Not applicable

- Overland transport

Not applicable

- Transport by sea



No data available

- Air transport

No data available

- Inland waterway transport

No data available

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- Rail transport

No data available

14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : Not applicable.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Listed on REACH Annex XVII (Restriction Conditions). The following restrictions are applicable:

3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Molybdenum polysulphide long chain alkyl dithiocarbamate complex
3(c) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) ; Molybdenum polysulphide long chain alkyl dithiocarbamate complex

Contains no substance(s) listed on the REACH Candidate List

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

15.1.2. National regulations

France

No ICPE	Installations classées Désignation de la rubrique	Code Régime	Rayon
na	Not Applicable	na	na

Germany

Regulatory reference : WGK 2, Significantly hazardous to water (Classification according to AwSV, Annex 1)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

Waterbezwaarlijkheid : B (4) - Weinig schadelijk voor in het water levende organismen

SZW-lijst van kankerverwekkende stoffen : None of the components are listed



SZW-lijst van mutagene stoffen : None of the components are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

Norway

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This safety datasheet has been prepared according to Norwegian legislation.

: FOR 2002-07-16 nr 1139: Forskrift om klassifisering, merking mv. av farlige kjemikalier; Forskrift om klassifisering, merking og emballering av stoffer og stoffblandinger (CLP); FOR 2008-05-30 nr 516: Forskrift om registrering, vurdering, godkjenning og begrensning av kjemikalier (REACH-forskriften)

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

For the following substances of this mixture a chemical safety assessment has been carried out

zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)
Molybdenum polysulphide long chain alkyl dithiocarbamate complex



SECTION 16: Other information

Indication of changes:

1	Logo	Modified	
1.1	Product code	Modified	

Abbreviations and acronyms:

	ABM = Algemene beoordelingsmethodiek
	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin
	ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
	CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC
	IATA = International Air Transport Association
	IMDG = International Maritime Dangerous Goods Code
	LEL = Lower Explosive Limit/Lower Explosion Limit
	UEL = Upper Explosion Limit/Upper Explosive Limit
	REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	BTT = Breakthrough time (maximum wearing time)
	DMEL = Derived Minimal Effect level
	DNEL = Derived No Effect Level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	Erl50 = EL50 in terms of reduction of growth rate
	EWG = European waste catalogue
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	NA = Not applicable
	NOEC = No observed effect concentration
	NOEL: no-observed-effect level
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	N.O.S. = Not Otherwise Specified
	OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	PNEC = Predicted No Effect Concentration
	Quantitative structure-activity relationship (QSAR)
	STOT = Specific Target Organ Toxicity
	TWA = time weighted average
	VOC = Volatile organic compounds

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WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)
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Sources of key data used to compile the datasheet : LOLI <http://www.echemportal.org> MSDS.

Full text of H- and EUH-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
EUH208	Contains Molybdenum polysulphide long chain alkyl dithiocarbamate complex. May produce an allergic reaction.
EUH210	Safety data sheet available on request.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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