



ZF Lifeguard Hybrid 4

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

1.1. Product identifier

Trade name

ZF Lifeguard Hybrid 4

Article No.

5961.308.625

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

Product type

Mixture.

Relevant identified uses

Lubricant.

Not suitable for use in

No uses advised against identified.

1.3. Details of the supplier of the safety data sheet

SDS created by

Global Division B Product Compliance Mgmt. System (BWC)

Supplier

ZF Aftermarket

Address

ZF Friedrichshafen AG
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Contact person

Global Division B Product Compliance Mgmt. System (BWC)

Email

msds.zf-aftermarket@zf.com

1.4. Emergency telephone number

(+49) 89 19 240 - available in German and English

Available outside office hours

Yes

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Hazard statements

H412

Description

Classification according to GHS rev. 8.

2.2. Label elements

Hazard statements

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal..

2.3. Other hazards

By handling of mineral oil products and chemical products no particular hazard is known when normal precautions (item 7) and personal protective equipment (item 8) are kept. The product may not be released into the environment without control.



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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No.	Concentra- tion	Classification	H-phrase M factor acute M factor chronic	Specific concentra- tion limits ATE	Note
Base oil, low viscous	72623-87-1 276-738-4	20 - 50%	Asp. Tox. 1	H304 - -		-
Alkoxy sulfolane	398141-87-2 800-172-4	1 - 2.5%	Aquatic Chronic 2	H411 - -		-
Alkyl thio phosphite	424-820-7	0.01 - <0.25%	Acute Tox. 4 - dermal, Skin Corr. 1B, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1	H312, H314, H318, H400, H410 - -		M(Chronic) =10 M (Acute)=10
alkenyl amine, long- chain	1213789-63-9 627-034-4	0.01 - 0.25%	Acute Tox. 4 - oral, Asp. Tox. 1, Skin Corr. 1B, Eye Dam. 1, STOT SE 3 - resp. tract irrit., STOT RE 2, Aquatic Acute 1, Aquatic Chronic 1	H302, H304, H314, H318, H335, H373, H400, H410 - -		M (Acute)=10 M(Chronic) =10



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Substance additional information

The highly refined mineral oil is only present as an additive thinner.

Please note that the mineral oils and petroleum distillates used in our products are severely refined and have a DMSO extract < 3% as measured by method IP 346 and are not classified as cancerogenic.

For the complete text of H-phrases mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Immediately remove contaminated clothing.

Inhalation

Supply fresh air, consult a doctor in case of discomfort.

Skin contact

Wash with soap and water.

Eye contact

Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion

Rinse mouth with water.

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

May cause skin and eye irritation.

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

Get medical attention if symptoms occur.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

CO₂, fire extinguishing powder or fog like water spraying. Extinguish larger fires with alcohol resistant foam or spray water with suitable surfactant added.



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Unsuitable extinguishing media

Water with a full water jet.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Move container from fire area if it can be done without risk. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations. Collect contaminated fire fighting water separately. It must not enter drains.

Other

Measures in case of fire

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

In case of spills, beware of slippery floors and surfaces.

6.2. Environmental precautions

Prevent from spreading (e.g. by binding or oil barriers). Avoid release to the environment. Environmental manager must be informed of all major spillages. Prevent further leakage or spillage if safe to do so. Do not allow to enter drainage system, surface or ground water.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of the material collected according to regulations. Stop the flow of material, if this is without risk.

6.4. Reference to other sections

See Section 8 of the SDS for Personal Protective Equipment. See Section 7 for information on safe handling See Section 13 for information on disposal.



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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

Prevent formation of aerosols. Do not eat, drink or smoke when working with the product. Take usual precautions when handling mineral oil products or chemical products. Observe good industrial hygiene practices. Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Avoid exposure to temperatures above the flash point.

7.3. Specific end use(s)

Not applicable.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

Occupational exposure limits: None of the components have assigned exposure limits.

Biological Limit Values: Not known.

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain air-borne levels to an acceptable level.

General Information: General information: Wash hands before breaks and after work. Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. The usual precautionary measures should be adhered to in handling the chemicals or the mineral oil products.

Eye / face protection

Avoid contact with skin and eyes. Goggles/face shield are recommended. If risk of splashing, wear safety goggles or face shield.



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Hand protection

Material: Nitrile butyl rubber (NBR).

Min. Breakthrough time: ≥ 480 min

Recommended thickness of the material: ≥ 0.38 mm.

Avoid long-term and repeated skin contact. Suitable gloves can be recommended by the glove supplier. Use skin protection cream for preventive skin protection. Protective gloves, where permitted in acc. to safety directions. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Other skin protection

Do not carry cleaning cloths impregnated with the product in trouser pockets. Wear suitable protective clothing.

Respiratory protection

Ensure good ventilation/exhaustion at the workplace. Avoid breathing vapour/ aerosol.

Thermal hazards

Not known.

Environmental exposure controls

Not available.

Other

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated foot-wear that cannot be cleaned.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Red.

Odour

Characteristic.



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Melting point / freezing point

Not determined.

Boiling point or initial boiling point and boiling range

Not determined.

Flammability

Not determined.

Lower and upper explosion limit

Not applicable for mixtures.

Flash point

210 °C

Auto-ignition temperature

Not determined.

Decomposition temperature

Not determined.

pH

substance/mixture is non-soluble (in water).

Kinematic viscosity

29 mm²/s

Method

@ 40°C

Solubility

No data available

Water solubility

Insoluble in water.

Partition coefficient n-octanol/water

Not applicable for mixtures.

Vapour pressure

Not applicable for mixtures.

Density and/or relative density

0.84 g/cm³

Method

@ 15°C



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Relative vapour density

Not applicable for mixtures.

Explosive properties

Value not relevant for classification.

Oxidising properties

Value not relevant for classification.

Particle characteristics

Not applicable.

9.2. Other information

Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal use conditions.

10.2. Chemical stability

Stable under normal use conditions.

10.3. Possibility of hazardous reactions

Stable under normal use conditions.

10.4. Conditions to avoid

Stable under normal use conditions.

10.5. Incompatible materials

Strong oxidising substances, strong acids and strong bases.

10.6. Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.



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SECTION 11: Toxicological information

11.1. Information on hazard classes.

Acute toxicity

Not classified for acute toxicity based on available data.

Product / Sub- stance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Test animals	Method / Guideline	Remarks
Base oil, low vis- cosity -	-	> 5000 mg/kg	Oral	Rat.	OECD 401	-
alkenyl amine, long-chain -	-	1689 mg/kg	Oral.	Rat.	OECD 401	-
ZF Lifeguard Hybrid 4 -	ATE	212018 mg/kg	Dermal	-	-	-
Alkyl thio phos- phites -	LD50	> 501 mg/kg	Dermal	Rat.	-	-
ZF Lifeguard Hybrid 4 -	-	-	Inhalation.	-	-	Based on avail- able data, the classification cri- teria are not met.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.



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Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Endocrine disrupting properties

The mixture does not contain components considered to have endocrine disrupting properties at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

Based on available data, the classification criteria are not met.

Acute fish toxicity

Product / Sub- stance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
Base oil, low viscos- ity -	LC50	> 100 mg/l	96 hr.	Fish.	OECD 203
alkenyl amine, long- chain -	LC50	0.06 mg/l	96 hr.	Fish.	-
Alkyl thio phos- phites -	LC50	1.5 mg/l	96 hr.	Fish.	OECD 203

Acute algae toxicity



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Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Alkyl thio phosphites -	EC50	0.31 mg/l	72 hr.	Algae.
alkenyl amine, long-chain -	EC50	0.04 mg/l	72 hr.	Algae.

Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
Alkyl thio phosphites -	EC50	0.09 mg/l	48 hr.	Daphnia magna	OECD 202
alkenyl amine, long-chain -	EC50	0.011 mg/l	48 hr.	Daphnia magna	-

Chronical toxicity

Based on available data, the classification criteria are not met.

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
Alkyl thio phosphites -	NOEC	0.14 mg/l	21 d.	Daphnia magna	-
alkenyl amine, long-chain -	NOEC	0,013 mg/l	21 d.	Daphnia magna	-
Base oil, low viscosity -	NOEC	> 100 mg/l	72 hr	Algae.	OECD 201
Base oil, low viscosity -	NOEC	> 1000 mg/l	14 days	Fish.	-



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Product / Sub- stance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species	Method / Guideline
Base oil, low viscos- ity -	NOEC	10 mg/l	21 d.	Daphnia magna	OECD 211

12.2. Persistence and degradability

Product / Substance name CAS / EC no.	Duration	Result	Degradation	Method / Guideline
ZF Lifeguard Hybrid 4 -	-	Not applicable for mix- tures.	-	-
alkenyl amine, long- chain -	28 days	-	66%	OECD 301B

12.3. Bioaccumulative potential

Not applicable for mixtures.

12.4. Mobility in soil

Mobility

Not applicable for mixtures.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

The product does not contain any substances fulfilling the PBT/vPvB criteria.

12.6. Endocrine disrupting properties

The mixture does not contain components considered to have endocrine disrupting properties at levels of 0.1% or higher.

12.7. Other adverse effects

Harmful, with long lasting effects, to aquatic life. The classification of this product is based in whole or in part on test data.



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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

General Information: Dispose of waste and residues in accordance with local authority requirements.

Methods of disposal: Discharge, treatment or disposal may be subject to national and local laws and regulations.

Waste code	Waste description
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils

Please note - an asterisk (*) next to a code denotes that it is HAZARDOUS WASTE.

SECTION 14: Transport information

14.1. UN number

Not regulated.

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

Not regulated.

14.3. Transport hazard class(es)

Label

Not regulated.

ADR / RID Class

Not regulated.

ADR / RID Classification code

Not regulated.

ADR / RID hazard identification number

Not regulated.

IMDG Class

Not regulated.

IATA Class

Not regulated.



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ADN Class

Not regulated.

ADN Class Code

Not regulated.

14.4. Packing group

Not regulated.

14.5. Environmental hazards

Not regulated.

IMDG Marine Pollutant

Not regulated.

14.6. Special precautions for user

Not regulated.

IMDG EmS

Not regulated.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.



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SECTION 16: Other information

Phrase meaning

Aquatic Chronic 2 - Hazardous to the aquatic environment — Chronic hazard category 2
Asp. Tox. 1 - Aspiration hazard, hazard category 1
Acute Tox. 4 - dermal - Acute toxicity, dermal, hazard category 4
Skin Corr. 1B - Skin corrosion, hazard category 1B
Eye Dam. 1 - Serious eye damage, hazard category 1
Aquatic Acute 1 - Hazardous to the aquatic environment — Acute hazard category 1
Aquatic Chronic 1 - Hazardous to the aquatic environment — Chronic hazard category 1
Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4
STOT SE 3 - resp. tract irrit. - Specific Target Organ Toxicity — Single exposure, hazard category 3 - respiratory tract irritation
STOT RE 2 - Specific Target Organ Toxicity — Repeated exposure, hazard category 2
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Other

Additional information

This Safety Data Sheet is based on our current knowledge and is intended to describe the product in terms of health, safety, and environmental requirements only.