

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended.



Product name: ZF PowerFluid Gear LS

ZF Aftermarket

1. Product and company identification

1.1 Product identifier

Product name: ZF PowerFluid Gear LS

Product number: AA02.885.930
AA02.885.942

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

Identified uses: Lubricant

Uses advised against: No uses advised against identified.

1.3 Details of the supplier of the safety data sheet

ZF Friedrichshafen AG
ZF Aftermarket
Obere Weiden 12
97424 Schweinfurt
Germany
+49 9721 475 60
[www.zf.com /contact](http://www.zf.com/contact)

1.4 Emergency number

24/7h Emergency information/ emergency number:

(+49) 89 19 240 (Poison emergency call – Information in German and English)

2. Hazards identification

2.1 Classification of the substance or mixture

The product has been classified and labelled as hazardous according to regulation (EU) 1272/2008 (CLP).

Classification according to Regulation (EC) No 1272/2008 as amended.

Environmental Hazards

Chronic hazards to the aquatic environment

Category 3

H412: Harmful to aquatic life with long lasting effects.

Hazard summary

No data available.

Physical Hazards:

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2.2 Label Elements

Hazard Statement(s): H412: Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention: P273: Avoid release to the environment.

Supplemental label information: EUH208: Contains: Triisobutyl phosphate. May produce an allergic reaction.

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.

Endocrine disrupting properties The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

3. Composition/ Information on ingredients

3.2 Mixtures

General information: mixture of synthetic base oils and severely refined base oil.

Chemical name	Identifier	Concentration *	REACH Registration No.
amine phosphate	EINECS: 931-384-6	1,00% - <2,50%	01-2119493620-38
amine phosphate	EC: 939-591-3	1,00% - <5,00%	01-2119978530-33
alkenyl amine, long-chain	EC: 627-034-4	0,25% - <1,00%	01-2119473797-19

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* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

Classification

Chemical name	Identifier	Classification
amine phosphate	EINECS: 931-384-6	CLP: Eye Dam. 1; H318, Acute Tox. 4; H302, Skin Sens. 1; H317, Aquatic Chronic 2; H411
amine phosphate	EC: 939-591-3	CLP: Aquatic Chronic 3; H412
alkenyl amine, long-chain	EC: 627-034-4	CLP: Acute Tox. 4; H302, Asp. Tox. 1; H304, STOT SE 3; H335, STOT RE 2; H373, Skin Corr. 1B; H314, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Eye Dam. 1; H318; M-Factor (aquatic acute): 10; M-Factor (aquatic chronic): 10

CLP: Regulation No. 1272/2008.

specific concentration limit

Chemical name	Identifier	specific concentration limit	Hazard class	Hazard Category	Hazard statements
amine phosphate	EINECS: 931-384-6	$\geq 9,39$ %	Skin sensitizer	1	H317
		> 50 %	Serious eye damage	1	H318
		> 50 %	Serious eye irritation	2	H319

For the wording of the listed hazard statements refer to section 16.

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 carcinogenic according to Note L of Annex VI of Regulation EC 1272/2008."

4. First aid measures

General:

Instantly remove any clothing soiled by the product.

4.1 Description of first aid measures

Inhalation:

Supply fresh air; consult doctor in case of symptoms.

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Eye contact:	Promptly wash eyes with plenty of water while lifting the eye lids.
Skin Contact:	Wash with soap and water.
Ingestion:	Rinse mouth thoroughly.

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.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:	CO ₂ , 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.
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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 fire fighting procedures:	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.
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Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
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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, acidbinders, 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.

7. Handling and storage

7.1 Precautions for safe handling

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

Do not heat up to temperatures close to the flash point.

7.3 Specific end use(s)

Not applicable

Storage Class:

10, Combustible liquids

8. Exposure controls/ personal protection

8.1 Exposure Limits

Occupational Exposure Limits

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Chemical name	Type	Exposure Limit Values	Source
Base oil, paraffinic - Respirable fraction	MAK	5 mg/m ³	Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG), as amended (2021)

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 airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

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.

Skin protection 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

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	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:	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.
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 footwear that cannot be cleaned.
Environmental Controls:	No data available.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state:	liquid
Form:	liquid
Color:	Brown
Odor:	Characteristic
pH:	Not applicable
Freezing point:	not determined
Boiling Point:	not determined
Flash Point:	220 °C
Evaporation Rate:	Not applicable for mixtures
Flammability (solid, gas):	Not applicable for mixtures
Flammability Limit - Upper (%)-:	Not applicable for mixtures
Flammability Limit - Lower (%)-:	Not applicable for mixtures

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Vapor pressure:	Not applicable for mixtures
Vapor density (air=1):	Not applicable for mixtures
Density:	0.90 g/ml (15,00 °C)
Solubility(ies)	
Solubility in Water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	Not applicable for mixtures
Autoignition Temperature:	not determined
Decomposition Temperature:	not determined
Kinematic viscosity:	190 mm ² /s (40 °C)
Explosive properties:	Value not relevant for classification
Oxidizing properties:	Value not relevant for classification
Particle characteristics:	Not applicable

9.2 Other information

No data available.

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 oxidizing substances. Strong acids. Strong bases.
10.6 Hazardous Decomposition Products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

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

Acute toxicity

Oral	ATEmix: 30.892 mg/kg
Product: Specified substance(s)	

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alkenyl amine, long-chain

LD 50 (Rat): 1.689 mg/kg (OECD 401)

Dermal
Product:

Not classified for acute toxicity based on available data.

Inhalation
Product:

Not classified for acute toxicity based on available data.

Skin Corrosion/Irritation

Product:

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

Serious Eye Damage/Eye Irritation

Product:

The classification of this product is based all or in part on test data.

Respiratory or Skin Sensitization

Product:

Experimental data has shown that the concentration of potentially sensitizing components present in this product does not induce skin sensitization.

Germ Cell Mutagenicity

Product:

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

Carcinogenicity

Product:

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

Reproductive toxicity

Product:

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

Specific Target Organ Toxicity - Single Exposure

Product:

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

Specific Target Organ Toxicity - Repeated Exposure

Product:

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

11.2 Information on other hazards

Endocrine disrupting properties
Product:

The substance/mixture does not contain components considered to have endocrine disrupting properties

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according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12. Ecological information

12.1 Toxicity

Acute toxicity
Product:

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

Fish

Specified substance(s)

amine phosphate

LC 50 (Fish, 96 h): 24 mg/l

alkenyl amine, long-chain

LC 50 (Fish, 96 h): 0,06 mg/l

Aquatic Invertebrates

Specified substance(s)

amine phosphate

EC 50 (Water Flea, 48 h): 91,4 mg/l

alkenyl amine, long-chain

EC 50 (Water Flea, 48 h): 0,011 mg/l

Chronic Toxicity

Product:

Based on available data, the classification criteria are met.

Aquatic Invertebrates

Specified substance(s)

amine phosphate

NOEC (Water Flea, 21 d): 0,12 mg/l

alkenyl amine, long-chain

NOEC (Water Flea, 21 d): 0,013 mg/l

Toxicity to Aquatic Plants

Specified substance(s)

amine phosphate

EC 50 (Alga, 72 h): > 100 mg/l

alkenyl amine, long-chain

EC 50 (Alga, 72 h): 0,04 mg/l

12.2 Persistence and Degradability

Biodegradation

Product:

Not applicable for mixtures

Specified substance(s)

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alkenyl amine, long-chain 66 % (28 d, OECD 301B)

12.3 Bioaccumulative potential

Product: Not applicable for mixtures

12.4 Mobility in soil

Product: Not applicable for mixtures

12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

Product

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

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

Water Hazard Class (WGK):

WGK 2: significantly water-endangering.

13. Disposal considerations

13.1 Waste treatment methods

General information: Dispose in accordance with all applicable regulations.

Disposal methods: Do not empty into drains; dispose of this material and its container in a safe way. When storing used products, ensure that the waste categories and mixing instructions are observed.

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European Waste Codes

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

14. Transport information

ADR/RID

14.1 UN Number:	--
14.2 UN Proper Shipping Name:	--
14.3 Transport Hazard Class(es) Class:	Non-dangerous goods
Label(s):	--
Hazard No. (ADR):	--
Tunnel restriction code:	--
14.4 Packing Group:	--
14.5 Environmental hazards:	--
14.6 Special precautions for user:	--

IMDG

14.1 UN Number:	--
14.2 UN Proper Shipping Name:	--
14.3 Transport Hazard Class(es) Class:	Non-dangerous goods
Label(s):	--
EmS No.:	--
14.4 Packing Group:	--
14.5 Environmental hazards:	--
14.6 Special precautions for user:	--

IATA

14.1 UN Number:	--
14.2 UN Proper Shipping Name:	--
14.3 Transport Hazard Class(es) Class:	Non-dangerous goods
Label(s):	--
14.4 Packing Group:	--
14.5 Environmental hazards:	--
14.6 Special precautions for user:	--

14.7 Maritime transport in bulk according to IMO instruments: Not applicable.

15. Regulatory information

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

EU Regulations

EU. Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances none

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended none

National Regulations

Water Hazard Class (WGK): WGK 2: significantly water-endangering.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

16. Other information

Revision Information: Vertical lines in the margin indicate an amendment.

Wording of the H-statements in section 2 and 3

- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- 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 information: The classification complies with the current EU lists; however, it has been supplemented with expert literature information and information provided

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by/about our company. The following evaluation methods were used: - On the basis of test data - Calculation Method - Bridging Principle "Substantially similar mixtures" - Expert Judgement

Disclaimer:

The data contained in this safety data sheet are based on our current knowledge and experience and are given to the best of our knowledge and belief. It characterizes the product only with regard to safety requirements for handling, transport and disposal. The data do not describe the product's properties (tech. product specification). Neither should any agreed property nor the suitability of the product for any specific technical application be deduced from the data contained in this safety data sheet. Modifications on this document are not allowed. The data are not transferable to other products. In the case of mixing the product with other products or in the case of processing, the data in this safety data sheet are not necessarily valid for the new-made material. It is the responsibility of the recipient of the product to observe federal, state and local law. Please contact us to obtain up-to-date safety data sheets. This document was issued electronically and has no signature.