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

Trade name: ZF PowerFluid Plus

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Trade name: ZF PowerFluid Plus

Product code: 0671.090.535
0671.090.536
0671.090.537
0769.126.671

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

Use of the Substance/Mixture: 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

1.4 Emergency telephone number
24/7h Emergency telephone number:
+49 (0)89 19240 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
PHYSICAL HAZARDS: No data available.
SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006 (REACH)
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Trade name: ZF PowerFluid Plus

2.2 Label elements

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

Precautionary Statement

Prevention: P273: Avoid release to the environment.

Disposal: 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.

Supplemental label information
EUH208: Contains olefin derivative, Phosphite. 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.

3. Composition/information on ingredients

3.2 Mixtures

General information: Mixture containing severely refined base oils and additives.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Identifier</th>
<th>Concentration*</th>
<th>REACH Registration No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZnDTP</td>
<td>EINECS: 224-235-5</td>
<td>1,00 - &lt;2,50%</td>
<td>01-2119493635-27</td>
</tr>
<tr>
<td>olefin derivative</td>
<td>Polymer</td>
<td>0,10 - &lt;1,00%</td>
<td>01-2119976364-28</td>
</tr>
<tr>
<td>Phosphite</td>
<td>EINECS: 202-908-4</td>
<td>0,10 - &lt;0,25%</td>
<td>01-2119511213-58</td>
</tr>
</tbody>
</table>

* 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.
Trade name: ZF PowerFluid Plus

Classification

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Identifier</th>
<th>Hazard class</th>
<th>Hazard Category</th>
<th>Hazard statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZnDTP</td>
<td>EINECS: 224-235-5</td>
<td>&gt; 50 % Serious eye damage</td>
<td>1</td>
<td>H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 50 % Serious eye irritation</td>
<td>2</td>
<td>H319</td>
</tr>
<tr>
<td>olefin derivative</td>
<td>Polymer</td>
<td>&gt;= 5 % Skin irritation</td>
<td>2</td>
<td>H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;= 5 % Serious eye irritation</td>
<td>2</td>
<td>H319</td>
</tr>
<tr>
<td>Phosphite</td>
<td>EINECS: 202-908-4</td>
<td>&gt;= 5 %</td>
<td>2</td>
<td>H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;= 5 %</td>
<td>2</td>
<td>H319</td>
</tr>
</tbody>
</table>

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

4.1 Description of first aid measures

Inhalation: Supply fresh air; consult doctor in case of symptoms.
Trade name: ZF PowerFluid Plus

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

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 fire fighting proce-dures: Move container from fire area if it can be done without risk. Dispose of fire debris and contaminated fire fighting water inaccordance with official regu-lations. Collect contaminated fire fighting water sepa-rately. It must not enter drains.

Special protective equip-ment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures
SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006 (REACH)
Article 31, Annex II as amended.

Trade name: ZF PowerFluid Plus

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and materials 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)

Specific use(s) No data available.

Storage Class: 10, Combustible liquids

8. Exposure controls/personal protection

8.1 Control parameters
SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006 (REACH)
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Occupational Exposure Limits

None of the components have assigned exposure limits.

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 safety directions. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Trade name: ZF PowerFluid Plus

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/ aero-sol.

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

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form:</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour:</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odour:</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odour Threshold:</td>
<td>Not applicable for mixtures</td>
</tr>
<tr>
<td>pH:</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Freezing point</th>
<th>Not applicable for mixtures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling point</td>
<td>Value not relevant for classification</td>
</tr>
<tr>
<td>Flash point</td>
<td>246 ºC</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable for mixtures</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Value not relevant for classification</td>
</tr>
</tbody>
</table>
Tradename: ZF PowerFluid Plus

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability Limit - Upper (%)</td>
<td>Value not relevant for classification</td>
</tr>
<tr>
<td>Flammability Limit - Lower (%)</td>
<td>Value not relevant for classification</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable for mixtures</td>
</tr>
<tr>
<td>Vapor density (air=1)</td>
<td>Not applicable for mixtures</td>
</tr>
<tr>
<td>Density</td>
<td>876 kg/m³</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>Solubility (other)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable for mixtures</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Value not relevant for classification</td>
</tr>
<tr>
<td>Decomposition Temperature:</td>
<td>Value not relevant for classification</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>65 mm²/s (40°C)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Value not relevant for classification</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Value not relevant for classification</td>
</tr>
</tbody>
</table>

9.2 Other information

Data not available
SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006 (REACH)
Article 31, Annex II as amended.

Trade name: ZF PowerFluid Plus

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:

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 toxicological effects

Acute toxicity

Oral
Product: Not classified for acute toxicity based on available data.

Specified substance(s)

ZnDTP
LD 50 (Rat): 4.358 mg/kg

Phosphite
LD 50 (Rat): 1.590 mg/kg

Dermal
Product: Not classified for acute toxicity based on available data.

Specified substance(s)

ZnDTP
LD 50 (Rabbit): > 5.000 mg/kg (OECD 402)

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.
Trade name: ZF PowerFluid Plus

Specified substance(s)
ZnDTP (Rabbit): None

**Serious eye damage/eye irritation**
Product:
Based on available data, the classification criteria are not met.

Specified substance(s)
ZnDTP (Rabbit): Slightly irritating

**Respiratory or skin Sensitization:**
Product:
Skin sensitizer: Based on available data, the classification criteria are not met.
Respiratory sensitizer: Based on available data, the classification criteria are not met.

Specified substance(s)
ZnDTP OECD 406-1 (Guinea Pig)
Not a skin sensitizer.

**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.

**Aspiration toxicity**
Product:
Based on available data, the classification criteria are not met.

**Other Adverse Effects:**
No data available
12. Ecological information

12.1 Toxicity

Acute toxicity
Product: Based on available data, the classification criteria are not met.

Fish
Specified substance(s) ZnDTP
LC 50 (Fish, 96 h): 4,4 mg/l (OECD 203)
olefin derivative
LC 50 (Fish, 96 h): > 101 mg/l

Aquatic Invertebrates
Specified substance(s) ZnDTP
EC 50 (Water Flea, 48 h): 75 mg/l (OECD 202)
olefin derivative
EC 50 (Water Flea, 48 h): > 101 mg/l

Chronic Toxicity
Product: Based on available data, the classification criteria are not met.

Fish
Specified substance(s) ZnDTP
NOEC (Fish, 4 d): 3,2 mg/l

Aquatic Invertebrates
Specified substance(s) ZnDTP
NOEC (Water Flea, 21 d): 0,4 mg/l
olefin derivative
NOEC (Water Flea, 21 d): 10 mg/l

Toxicity to Aquatic Plants
Specified substance(s) ZnDTP
EC 50 (Alga, 72 h): 410 mg/l
olefin derivative
EC 50 (Alga, 72 h): > 101 mg/l

12.2 Persistence and degradability

Biodegradability
Product: Not applicable for mixtures

Specified substance(s) ZnDTP 5 % (28 d, OECD 301B)

12.3 Bioaccumulative potential

Bioakkumulation Not applicable for mixtures
Trade name: ZF PowerFluid Plus

12.4 Mobility in soil
Product: Not applicable for mixtures

12.5 Results of PBT and vPvB assessment
Assessment
Product: The product does not contain any substances fulfilling the PBT/vPvB criteria.

12.6 Other adverse effects
Harmful to aquatic life with long lasting effects.

13. Disposal considerations

13.1 Waste treatment methods
General information: Dispose in accordance with all applicable regulations.
Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.
EU Waste Disposal Code (EWC): 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: --

ADN
14.1 UN Number: --
14.2 UN Proper Shipping Name: --
14.3 Transport Hazard Class(es) --
SAFETY DATA SHEET
According to Regulation (EC) No. 1907/2006 (REACH)
Article 31, Annex II as amended.

Trade name: ZF PowerFluid Plus

Class: Non-dangerous goods
Label(s): --

14.3 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): Non-dangerous goods
Label(s): --
EmS No.: --

14.3 Packing Group: --
14.5 Environmental hazards: --
14.6 Special precautions for user: --

IATA
14.1 UN Number: --
14.2 Proper Shipping Name: --
14.3 Transport Hazard Class(es): Non-dangerous goods
Label(s): --

14.4 Packing Group: --
14.5 Environmental hazards: --
14.6 Special precautions for user: --

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: not applicable.

15. Regulatory information

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

EU Regulations
Regulation (EC) No. 2037/2000 Substances that deplete the ozone layer: none


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

16. Other information
SAFETY DATA SHEET
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Article 31, Annex II as amended.

Trade name: ZF PowerFluid Plus

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

Wording of the H-statements in section 2 and 3

H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
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 by/about our company. It was derived from the test data and/or the application of the conventional method.

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.