

# SAFETY DATA SHEET

According to EC No 1907/2006 as amended as at the date of this SDS



## ZF Ecofluid A Life

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

#### 1.1 Product identifier

Trade name : ZF Ecofluid A Life  
Product code : 0671.072.120  
0671.072.130  
Unique Formula Identifier (UFI) : 5AN0-908K-F004-UGQU

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

Use of the Sub-stance/Mixture : Transmission oil.  
Uses advised against : This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

#### 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : **ZF Friedrichshafen AG**  
Löwentaler Straße 20  
D-88046 Friedrichshafen  
Germany  
Telephone : (+49) 7541 77 0  
Telefax : (+49) 7541 77 90 8000  
Contact for Safety Data Sheet : If you have any enquiries about the content of this SDS please email: [msds.zf-aftermarket@zf.com](mailto:msds.zf-aftermarket@zf.com)

1.4 Emergency telephone number  
24/7hEmergency telephone number:  
+49(0) 89 19 240 Information in German and English

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

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Hazard pictograms	:	
Signal word	:	Warning
Hazard statements	:	<b>PHYSICAL HAZARDS:</b> Not classified as a physical hazard according to CLP criteria. <b>HEALTH HAZARDS:</b> H317 May cause an allergic skin reaction. <b>ENVIRONMENTAL HAZARDS:</b> Not classified as environmental hazard according to CLP criteria.
Precautionary statements	:	<b>Prevention:</b> P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. <b>Response:</b> P302 + P352 IF ON SKIN: Wash with plenty of water and soap. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. <b>Storage:</b> No precautionary phrases. <b>Disposal:</b> P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:  
Contains amine phosphate.

### 2.3 Other hazards

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

Ecological information: 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.

Toxicological information: 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.

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.  
Used oil may contain harmful impurities.  
Not classified as flammable but will burn.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Chemical nature : Synthetic base oil and additives.  
Highly refined mineral oil.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.  
Classification based on DMSO extract content < 3% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note L).

\* contains one or more of the following CAS-numbers (REACH registration numbers): 64742-53-6 (01-2119480375-34), 64742-54-7 (01-2119484627-25), 64742-55-8 (01-2119487077-29), 64742-56-9 (01-2119480132-48), 64742-65-0 (01-2119471299-27), 68037-01-4 (01-2119486452-34), 72623-86-0 (01-2119474878-16), 72623-87-1 (01-2119474889-13), 8042-47-5 (01-2119487078-27), 848301-69-9 (01-0000020163-82), 68649-12-7 (01-2119527646-33), 151006-60-9 (01-2119523580-47), 163149-28-8 (01-2119543695-30), 64741-88-4 (01-2119488706-23), 64741-89-5 (01-2119487067-30).

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Long chain alkyl amine thiophosphate	Not Assigned 417-450-2	Skin Irrit. 2; H315 Skin Sens. 1A; H317 Eye Irrit. 2; H319 Aquatic Chronic 3; H412	0,1 - 0,99
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *	Not Assigned	Asp. Tox. 1; H304	0 - 90

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : No treatment necessary under normal conditions of use.

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- If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.
- In case of eye contact : Flush eye with copious quantities of water. Remove contact lenses, if present and easy to do. Continue rinsing. If persistent irritation occurs, obtain medical attention.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

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

- Symptoms : Skin sensitisation (allergic skin reaction) signs and symptoms may include itching and/or a rash. Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

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

- Treatment : Notes to doctor/physician:  
Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.

### 5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

### 5.3 Advice for firefighters

- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in

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- Specific extinguishing methods : a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).  
: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : 6.1.1 For non emergency personnel:  
Avoid contact with skin and eyes.  
6.1.2 For emergency responders:  
Avoid contact with skin and eyes.

#### 6.2 Environmental precautions

- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

#### 6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

#### 6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.,  
For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Advice on safe handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

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Product Transfer : Proper grounding and bonding procedures should be used during all bulk transfer operations to avoid static accumulation.

### 7.2 Conditions for safe storage, including any incompatibilities

Storage class (TRGS 510) : 10, Combustible liquids

Further information on storage stability : Keep container tightly closed and in a cool, well-ventilated place.  
Use properly labeled and closable containers.  
Store at ambient temperature.

Packaging material : Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.  
Suitable material: For containers or container linings, use mild steel or high density polyethylene.  
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

### 7.3 Specific end use(s)

Specific use(s) : Not applicable

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Oil mist, mineral	Not Assigned	TWA (inhalable fraction)	5 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values

#### Biological occupational exposure limits

### 8.2 Exposure controls

#### Engineering measures

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:

Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

#### General Information:

Define procedures for safe handling and maintenance of controls.

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Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

### Personal protective equipment

The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye protection : Wear full face shield if splashes are likely to occur.  
Approved to EU Standard EN166.

Hand protection

Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Skin and body protection : Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.  
Protective clothing approved to EU Standard EN14605.

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Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.  
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : amber

Odour : Slight hydrocarbon

Odour Threshold : Data not available

pour point : <= -48 °C  
Method: ASTM D97

Flammability

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Not classified as flammable but will burn.

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit : Typical 10 %(V)

Lower explosion limit / Lower flammability limit : Typical 1 %(V)

Flash point : 240 °C  
Method: EN ISO 2592

Auto-ignition temperature : > 320 °C

Decomposition temperature  
Decomposition temperature : Data not available

pH : Not applicable

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : 68 mm<sup>2</sup>/s (40 °C)  
Method: ASTM D445  
10 mm<sup>2</sup>/s (100 °C)



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Method: ASTM D445

Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: log Pow: > 6 (based on information on similar products)
Vapour pressure	: < 0,5 Pa (20 °C) estimated value(s)
Relative density	: 0,830 - 0,840 (15 °C)
Density	: 830 - 840 kg/m <sup>3</sup> (15 °C) Method: ISO 12185
Relative vapour density	: > 5

### 9.2 Other information

Explosives	: Classification Code: Not classified.
Oxidizing properties	: Data not available
Flammability (liquids)	: Not classified as flammable but will burn.
Evaporation rate	: Data not available
Conductivity	: This material is not expected to be a static accumulator.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

### 10.2 Chemical stability

Stable.

No hazardous reaction is expected when handled and stored according to provisions

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

### 10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

### 10.5 Incompatible materials

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Materials to avoid : Strong oxidising agents.

### 10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

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## SECTION 11: Toxicological information

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

Information on likely routes of exposure : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

#### Acute toxicity

**Product:**

Acute oral toxicity : LD50 (rat): > 5.000 mg/kg  
Remarks: Low toxicity  
Based on available data, the classification criteria are not met.

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

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg  
Remarks: Low toxicity  
Based on available data, the classification criteria are not met.

#### Skin corrosion/irritation

**Product:**

Remarks : Slightly irritating to skin.  
Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.  
Based on available data, the classification criteria are not met.

#### Serious eye damage/eye irritation

**Product:**

Remarks : Slightly irritating to the eye.  
Based on available data, the classification criteria are not met.

#### Respiratory or skin sensitisation

**Product:**

Remarks : For skin sensitisation:  
Causes sensitisation.

Remarks : For respiratory sensitisation:

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

### Germ cell mutagenicity

**Product:**

Genotoxicity in vivo : Remarks: Non mutagenic  
Based on available data, the classification criteria are not met.

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

### Carcinogenicity

**Product:**

Remarks : Not a carcinogen.  
Based on available data, the classification criteria are not met.

Carcinogenicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Long chain alkyl amine thiophosphate	No carcinogenicity classification.
Highly refined mineral oil	No carcinogenicity classification.

### Reproductive toxicity

**Product:**

Effects on fertility :  
Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

### STOT - single exposure

**Product:**

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

### STOT - repeated exposure

**Product:**

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

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### Aspiration toxicity

**Product:**

Not an aspiration hazard., Based on available data, the classification criteria are not met.

### 11.2 Information on other hazards

#### Endocrine disrupting properties

**Product:**

Assessment : 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.

#### Further information

**Product:**

Remarks : Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.  
ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks : Slightly irritating to respiratory system.

Remarks : Classifications by other authorities under varying regulatory frameworks may exist.

Remarks : Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

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## SECTION 12: Ecological information

### 12.1 Toxicity

**Product:**

Toxicity to fish : Remarks: LL/EL/IL50 > 100 mg/l  
Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates : Remarks: LL/EL/IL50 > 100 mg/l  
Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to algae/aquatic plants : Remarks: LL/EL/IL50 > 100 mg/l

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Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to fish (Chronic toxicity) : Remarks: Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Based on available data, the classification criteria are not met.

Toxicity to microorganisms :  
Remarks: Based on available data, the classification criteria are not met.

### 12.2 Persistence and degradability

#### Product:

Biodegradability : Remarks: Not readily biodegradable.  
Major constituents are inherently biodegradable, but contains components that may persist in the environment.

### 12.3 Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

### 12.4 Mobility in soil

#### Product:

Mobility : Remarks: Liquid under most environmental conditions., If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB..

### 12.6 Endocrine disrupting properties

#### Product:

Assessment : 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.

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### 12.7 Other adverse effects

**Product:**

Additional ecological information : Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential.  
Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.

Poorly soluble mixture.  
Causes physical fouling of aquatic organisms.

Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Recover or recycle if possible.  
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.  
Do not dispose into the environment, in drains or in water courses.  
  
Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.  
Waste, spills or used product is dangerous waste.  
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.  
Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.  
Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation

Waste catalogue :

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	EU Waste Disposal Code (EWC):
Waste Code	:
	13 02 06*
Remarks	:
	Disposal should be in accordance with applicable regional, national, and local laws and regulations.
	Classification of waste is always the responsibility of the end user.

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### SECTION 14: Transport information

#### 14.1 UN number or ID number

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

#### 14.2 UN proper shipping name

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

#### 14.3 Transport hazard class(es)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

#### 14.4 Packing group

ADN	:	Not regulated as a dangerous good
CDNI Inland Water Waste Agreement	:	NST 3411 Mineral Lubricating Oils
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

#### 14.5 Environmental hazards

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**ADN** : Not regulated as a dangerous good  
**ADR** : Not regulated as a dangerous good  
**RID** : Not regulated as a dangerous good  
**IMDG** : Not regulated as a dangerous good

### 14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

### 14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

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## SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Product is not subject to Authorisation under REACH.

Water hazard class (Germany) : WGK 2 obviously hazardous to water  
Code Number: 436  
Remarks: Classification according to AwSV

Volatile organic compounds : Volatile organic compounds (VOC) content: 0 %

#### Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Technische Anleitung Luft: Product not listed by name. Observe section 5.2.5 in connection with section 5.4.9

Product is subject Betriebs-Sicherheits-Verordnung (BetrSichV).

Compliance with paragraph 22 of Youth Employment Law.

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

#### The components of this product are reported in the following inventories:

REACH : All components listed or polymer exempt.



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TSCA : All components listed.

### 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

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## SECTION 16: Other information

### Full text of H-Statements

H304 : May be fatal if swallowed and enters airways.  
H315 : Causes skin irritation.  
H317 : May cause an allergic skin reaction.  
H319 : Causes serious eye irritation.  
H412 : Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

Aquatic Chronic : Long-term (chronic) aquatic hazard  
Asp. Tox. : Aspiration hazard  
Eye Irrit. : Eye irritation  
Skin Irrit. : Skin irritation  
Skin Sens. : Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA

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- Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Training advice : Provide adequate information, instruction and training for operators.

### Classification of the mixture:

Skin Sens. 1 H317

### Classification procedure:

Expert judgement and weight of evidence determination.

### Identified Uses according to the Use Descriptor System

#### Uses - Worker

Title : General use of lubricants and greases in vehicles or machinery.- Industrial

#### Uses - Worker

Title : General use of lubricants and greases in vehicles or machinery.- Professional

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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### Exposure Scenario - Worker

<b>300000000170</b>	
<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	General use of lubricants and greases in vehicles or machinery.- Industrial
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU3 <b>Process Categories:</b> PROC1, PROC2, PROC8b, PROC9 <b>Environmental Release Categories:</b> ERC4, ERC7, ATIEL-ATC SPERC 4.Bi.v1
<b>Scope of process</b>	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently).	
<b>Other Operational Conditions affecting Exposure</b>	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

<b>Contributing Scenarios</b>	<b>Risk Management Measures</b>
General measures applicable to all activities.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.
General exposures (closed systems)Use in closed process, no likelihood of expo-	No other specific measures identified.

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sure	
Initial factory fill of equipment Use in contained systems Use in closed, continuous process with occasional controlled exposure Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	No other specific measures identified.
Initial factory fill of equipment (open systems) Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours
Operation of equipment containing engine oils and similar. Use in contained systems Use in closed process, no likelihood of exposure	No other specific measures identified.
Equipment cleaning and maintenance Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities	Drain down system prior to equipment opening or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Equipment cleaning and maintenance Operation is carried out at elevated temperature (> 20°C above ambient temperature). Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities	Drain down system prior to equipment opening or maintenance. Provide extract ventilation to emission points when contact with warm (>50°C) product is likely. Wear chemically resistant gloves (tested to EN374) in combination with intensive management supervision controls. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage. Use in closed process, no likelihood of exposure Use in closed, continuous process with occasional controlled exposure	Store substance within a closed system.

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
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<b>Section 3.1 - Health</b>
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The Risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product. The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.
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<b>Section 3.2 -Environment</b>
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No exposure assessment presented for the environment.
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<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
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<b>Section 4.1 - Health</b>
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Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
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<b>Section 4.2 -Environment</b>
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No exposure assessment presented for the environment.
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### Exposure Scenario - Worker

<b>30000000171</b>	
<b>SECTION 1</b>	<b>EXPOSURE SCENARIO TITLE</b>
<b>Title</b>	General use of lubricants and greases in vehicles or machinery.- Professional
<b>Use Descriptor</b>	<b>Sector of Use:</b> SU22 <b>Process Categories:</b> PROC1, PROC2, PROC8a, PROC8b, PROC20 <b>Environmental Release Categories:</b> ERC9a, ERC9b, ATIEL-ATC SPERC 9.Bp.v1
<b>Scope of process</b>	Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

<b>SECTION 2</b>	<b>OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES</b>
<b>Additional Information</b>	No exposure assessment presented for the environment.

<b>Section 2.1</b>	<b>Control of Worker Exposure</b>
<b>Product Characteristics</b>	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
<b>Frequency and Duration of Use</b>	
Covers daily exposures up to 8 hours (unless stated differently).	
<b>Other Operational Conditions affecting Exposure</b>	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

<b>Contributing Scenarios</b>	<b>Risk Management Measures</b>
General measures applicable to all activities.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.
Operation of equipment containing engine oils and	No other specific measures identified.

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similar. Use in contained systems Use in closed process, no likelihood of exposure	
Material transfers Non-dedicated facility Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities	Avoid carrying out activities involving exposure for more than 4 hours Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Equipment cleaning and maintenance Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities Heat and pressure transfer fluids in dispersive, professional use but closed systems	Drain down system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Storage. Use in closed process, no likelihood of exposure Use in closed, continuous process with occasional controlled exposure	Store substance within a closed system.

<b>Section 2.2</b>	<b>Control of Environmental Exposure</b>
No exposure assessment presented for the environment.	

<b>SECTION 3</b>	<b>EXPOSURE ESTIMATION</b>
<b>Section 3.1 - Health</b>	
The Risk Management Measures/Operational Conditions that are identified in the Exposure Scenario are the outcome of a quantitative and qualitative assessment that covers this product. The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

<b>Section 3.2 -Environment</b>	
No exposure assessment presented for the environment.	

<b>SECTION 4</b>	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO</b>
<b>Section 4.1 - Health</b>	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

<b>Section 4.2 -Environment</b>	
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No exposure assessment presented for the environment.
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