



**Hydrostatic-mechanical  
and electric drive systems**

**List of lubricants TE-ML 07**

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**1. Approved lubricant classes**

<b>Product groups</b>	<b>Lubricant classes for service fills <sup>(1)</sup></b>	<b>Alternative lubricant classes for service fills <sup>(1)</sup></b>
<b>Powershift transmissions</b> HL AVG <sup>(2)</sup>	07B / 07D / 07E / 07F	---
<b>Continuously variable hydrostatic drives</b> HC	Mechanical section: 07D Hydraulic section: 07D / 07H <sup>(3)</sup>	---
<b>Mobile mixer drives</b> CML	Mechanical section: Gear oil ZF Ecofluid X (ZF No. 0681 000 412) Hydraulic section: 07D / 07H <sup>(3)</sup>	---
<b>Mobile mixer drives</b> P3301, P4300, P5300, P6300, P7300 PK5300, PK6500, PK7500	07A / 07C / 07E	07D
<b>Mobile mixer drives</b> PLM P3200	07C / 07E	07D
<b>Swing drives</b> DR	07D / 07E / 07G / 07H	---
<b>Transmissions for lifting equipment</b> RME RMT	07A / 07E	---

The list of lubricants TE-ML 07, **edition 28.01.2018** replaces all previous editions. The current list can be requested from any ZF after-sales service center or accessed on the Internet under [www.zf.com/lubricants](http://www.zf.com/lubricants).

**ZF Friedrichshafen AG**  
D-88038 Friedrichshafen  
[www.zf.com/contact](http://www.zf.com/contact)

## 2. Low temperature limits

Lubricant classes	Viscosity grades	Use at outside temperatures above <sup>(4)</sup>	
		Hydrostatic-mechanical and electric drive - Hydraulic section	Hydrostatic-mechanical and electric drive - Mechanical section
07A (Gear oil)	SAE 75W-90, 75W-110, 75W-140	---	-40°C
	SAE 80W-85, 80W-90, 80W-110, 80W-140	---	-26°C
	SAE 85W-90, 85W-110, 85W-140, 90	---	-12°C
ZF Ecofluid X (Gear oil)	SAE 80W-90	---	-26°C
07B, 07C, 07D, 07F (STOU, engine oil, off highway lubricants)	SAE 5W-30, 5W-40	-35°C	-40°C
	SAE 10W-30, 10W-40	-30°C	-35°C
	SAE 15W-30, 15W-40	-25°C	-30°C
	SAE 20W-20	-20°C	-25°C
	SAE 20W-40	-20°C	---
	SAE 30	-5°C	-10°C
07E (Biodegradable lubricants)	SAE 75W-80	-35°C	-40°C
07G (Biodegradable lubricants)	ISO VG 46	---	-10°C
	ISO VG 68	---	-5°C
07H (hydraulic oil)	ISO VG 46	---	-10°C
	ISO VG 68	---	-5°C
	ISO VG 100	---	0°C

## 3. Explanation of footnotes and comments

### Footnotes

- (1) **Refer to the following pages for approved commercial products.**
- (2) For AVGs directly mounted on ZF axles, use gear oils in accordance with TE-ML 05 for the common oil circuit of the transmission and axle.
- (3) Moreover, please observe the specifications provided by the vehicle manufacturer or hydraulic manufacturer.
- (4) An even warm-up phase is needed in order to reach the minimum oil temperature required for starting the drive unit (mentioned low temperature limit). At outside temperatures below -5°C, a warm-up phase of at least 10 minutes is required, irrespective of the viscosity grade used.

### Comments

1. A Multipurpose grease classified KP2K-20 acc. to DIN 51825 or classified ISO-L-XBCHB2 acc. to ISO 6743-9 must be used on greasing points (basic oil API Group 1, 2, 3 or 4, EP additives, lithium saponified, temperature use limits min. between -20 and +120° C, NLGI-Class 2).
2. Additives of any kind added later to the oil change the oil in a manner that is unpredictable, and they are therefore not permitted. No liability of any kind will be accepted by ZF for any damage resulting from the use of such additives.

#### **4. Lubricant classes and approved trade products**

##### **Lubricant class 07A**

Gear oil in accordance with Specification

- API GL-5 / MIL-L-2105D
- MIL-PRF-2105E
- SAE J2360

Viscosity grades: SAE 75W-90 / 75W-110 / 75W-140 / 80W-85 / 80W-90 / 80W-110 / 80W-140 / 85W-90 / 85W-110 / 85W-140 / 90

Base oil API Group 1 / 2 / 3 / 4

##### **Note:**

All trade products which satisfy the above specifications may be used. There will be no product listing.

**Lubricant class 07B**

STOU (Super tractor oil universal)

Viscosity grades: SAE 10W-30 / 10W-40 / 15W-30 / 15W-40 / 20W-40

**Manufacturer (07B)**

ADDINOL LUBE OIL GMBH, LEUNA/DE  
 AVIA AG, MÜNCHEN/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 BAYWA AG MÜNCHEN, MÜNCHEN/DE  
 BP PLC., LONDON/GB  
 BP PLC., LONDON/GB  
 BP PLC., LONDON/GB  
 BP PLC., LONDON/GB  
 BUCHER AG LANGENTHAL, LANGENTHAL/CH  
 BUCHER AG LANGENTHAL, LANGENTHAL/CH  
 BUCHER AG LANGENTHAL, LANGENTHAL/CH  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CASTROL LTD., LONDON/GB  
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CLASS KGAA MBH, HARSEWINKEL/DE  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU  
 GRUPA LOTOS S.A., GDANSK/PL  
 GRUPA LOTOS S.A., GDANSK/PL  
 GRUPA LOTOS S.A., GDANSK/PL  
 IGOL FRANCE, AMIENS/FR  
 INA MAZIVA LTD., ZAGREB/HR  
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL  
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL  
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL  
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL  
 MOTUL SA, AUBERVILLIERS/FR  
 NOVA STILMOIL SPA, MODENA/IT  
 OOO "LLK-INTERNATIONAL", MOSCOW/RU  
 PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT  
 PETROGAL S.A., LISBOA/PT  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
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 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES  
 SAME DEAUTZ FAHR, TREVIGLIO/IT  
 SAME DEAUTZ FAHR, TREVIGLIO/IT  
 SAME DEAUTZ FAHR, TREVIGLIO/IT  
 SAME DEAUTZ FAHR, TREVIGLIO/IT  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE  
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE  
 TAMOIL ITALIA SPA, MILANO/IT  
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR  
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR  
 UNIL OPAL, SAUMUR/FR  
 ZELLER+GMELIN GMBH&CO.KG, EISLINGEN/DE

**Trade name (07B)**

ADDINOL SUPER TRAKTOR MU 1045  
 TRACTAVIA SPEZIAL FE 10W-40  
 PENNASOL STOU 10W-40  
 PENNASOL STOU 15W-30  
 AVISTA STOU SAE 10W-30  
 AVISTA STOU SAE 10W-40  
 AVISTA STOU SAE 15W-30  
 TECTROL SUPER 2000 CD-HC  
 BP VANELLUS AGRI UNIVERSAL 15W-40  
 BP VANELLUS AGRI SUPER UNIVERSAL 10W-40  
 BP SUPER TOU 15W-40  
 BP VANELLUS AGRI UNIVERSAL 15W-40  
 FARMER TRAC VARIANT SAE 10W/30  
 MOTOREX FARMER TRAC SAE 10W30  
 FARMER TRAC SAE 10W/40  
 CASTROL AGRI MP 15W-30  
 CASTROL AGRI MP 15W-40  
 CASTROL AGRI MP PLUS 10W-40  
 CASTROL AGRI MP PLUS 10W-30  
 CASTROL AGRI MP 15W-40  
 CASTROL TRANSMAX AGRI MP 15W-40  
 CASTROL TRANSMAX AGRI MP 15W-40  
 CASTROL TRANSMAX AGRI MP 15W-40  
 CASTROL AGRI MP 15W-40  
 CEPSA AGRO PLUS 15W-40  
 SUPER TRACTOR SAE 15W-40  
 CLAAS AGRI UNIVERSAL 300 15W-40  
 MOBIL AGRI EXTRA 10W-40  
 MOBIL AGRI SUPER 15W-40  
 FUCHS AGRIFARM STOU MC SAE 10W-40  
 FUCHS AGRIFARM STOU MC SAE 10W-30  
 FUCHS AGRIFARM UTTO VT  
 G-SPECIAL STOU 10W-40  
 AGROL STOU PLUS CG-4 10W/40  
 AGROL STOU PLUS CG-4 10W/30  
 AGROLIS STOU PLUS SAE 10W-40  
 PRO MULTI SUPER 10W-40  
 INA AGRINA 15W-30  
 Q8 T 1000 D SAE 10W-30  
 Q8 T 1000 SAE 15W-30  
 Q8 T 5000 SAE 10W-40  
 Q8 T 1000 SAE 10W-30  
 MOTUL DS SUPER AGRI 10W-30  
 MF LUBE+ AGRILUBE UNIVERSAL 10W30  
 LUKOIL VERSO MOTOR 10W-40  
 STOU FLUID SAE 15W/40  
 GALP UNIAGRO 15W40  
 AMBRA UNIVERSAL 15W-40 (SAE 15W-40)  
 ARBOR UNIVERSAL 15W-40 (SAE 15W-40)  
 AKROS UNIVERSAL 15W-40 (SAE 15W-40)  
 AKCELA SUPER UNIVERSAL 15W-30 (SAE 15W-30)  
 AKROS MULTI VT (SAE 10W-30)  
 AKCELA MULTI TRACTOR (SAE 10W-40)  
 ARBOR UNIVERSAL 10W-40 (SAE 10W-40)  
 AMBRA VT SPECIAL (SAE 10W-40)  
 AMBRA UNIVERSAL 10W-30 (SAE 10W-30)  
 AKCELA SUPER UNIVERSAL 10W-30 (SAE 10W-30)  
 AMBRA UNIVERSAL 15W-40 (SAE 15W-40)  
 ARBOR UNIVERSAL 15W-40 (SAE 15W-40)  
 AKROS UNIVERSAL 15W-40 (SAE 15W-40)  
 AMBRA UNIVERSAL 15W-40 (SAE 15W-40)  
 ARBOR UNIVERSAL 15W-40 (SAE 15W-40)  
 AKROS UNIVERSAL 15W-40 (SAE 15W-40)  
 AMBRA UNIVERSAL 15W-40 (SAE 15W-40)  
 ARBOR UNIVERSAL 15W-40 (SAE 15W-40)  
 AKROS UNIVERSAL 15W-40 (SAE 15W-40)  
 AMBRA UNIVERSAL 10W-30 (SAE 10W-30)  
 AMBRA UNIVERSAL 10W-30 (SAE 10W-30)  
 AKROS UNIVERSAL 15W-40 (SAE 15W-40)  
 AMBRA UNIVERSAL 15W-40 (SAE 15W-40)  
 ARBOR UNIVERSAL 15W-40 (SAE 15W-40)  
 AMBRA UNIVERSAL 10W-30 (SAE 10W-30)  
 AKCELA SUPER UNIVERSAL 15W-30 (SAE 15W-30)  
 REPSOL CERES STOU 10W40  
 SDF X-TREME  
 DF X-TREME  
 SDF TOP MULTIFUNCTION  
 DF TOP MULTIFUNCTION  
 SHELL SPIRAX S4 TX  
 SHELL SPIRAX S3 T (SAE 15W-40)  
 SRS PRIMANOL 10W-30  
 SRS PRIMANOL 10W-40  
 TAMOIL SUPER TRACTOR SAE 15W-40  
 TOTAL MULTAGRI MS 15W-40  
 ELF TRACTORELF ST3 15W-40  
 XANTHOS 10W40  
 DIVINOL SYNTRAC TS 10W40

**ZF approval number**

ZF002086  
 ZF001810  
 ZF001697  
 ZF001698  
 ZF002048  
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 ZF002050  
 ZF001205  
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 ZF000015  
 ZF001300  
 ZF001695  
 ZF001696  
 ZF000774  
 ZF001154  
 ZF001252  
 ZF000682  
 ZF001626



**Lubricant class 07C**

Engine oil

Viscosity grades: SAE 5W-40 / 10W-40 / 15W-40

**Manufacturer (07C)**

KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL  
NOVA STILMOIL SPA, MODENA/IT  
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB

**Trade name (07C)**

Q8 T 750 SAE 15W-40  
ORION SUPER PLUS 15W40  
SHELL SIRIUS 15W-40  
SHELL RIMULA R3X 15W-40

**ZF approval number**

ZF000125  
ZF000920  
ZF000436  
ZF000437

**Lubricant class 07D**

Engine oil in accordance with specification

- API CD/CE/CF-4/CF/CG-4/CH-4/CI-4/CI-4 Plus/CJ-4
- API SF/SG/SH/SJ/SL/SM
- ACEA-categories A/B/E

**Viscosity grades:**

Product groups in accordance with page 1	Viscosity grades
<ul style="list-style-type: none"> <li>- Powershift transmissions HL, AVG</li> <li>- Continuously variable hydrostatic drives HC</li> <li>- Mobile mixer drives CML - hydraulic section</li> <li>- Swing drives DR</li> </ul>	SAE 5W-30 / 5W-40 / 10W-30 / 10W-40 / 15W-30 / 15W-40 / 20W-20 / 30
<ul style="list-style-type: none"> <li>- Mobile mixer drives P-series, PK-series and PLM-series</li> </ul>	SAE 10W-40 / 15W-40

**Note:**

All trade products which satisfy the above specifications may be used. There will be no product listing.

**Lubricant class 07E**

Biodegradable lubricant (Special approval)

Viscosity grade: SAE 75W-80

**Instructions on the use of biodegradable lubricants:**

The oil manufacturer's change-over directives included in the product description are to be observed when change-over to biodegradable lubricants is effected.

**Manufacturer (07E)**

PANOLIN AG, MADETSWIL/CH

**Trade name (07E)**

PANOLIN BIOFLUID ZFH 10W/30

**ZF approval number**

ZF000391



**Lubricant class 07F**  
**Off highway lubricants**  
**Viscosity grades: SAE 30**

**Manufacturer (07F)**

ADDINOL LUBE OIL GMBH, LEUNA/DE  
 ARAL AG, BOCHUM/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 BAYWA AG MÜNCHEN, MÜNCHEN/DE  
 BP PLC., LONDON/GB  
 BP PLC., LONDON/GB  
 BUCHER AG LANGENTHAL, LANGENTHAL/CH  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CATERPILLAR, INC., MOSSVILLE/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 FABRIKA MAZIVA FAM AD, KRUSĚVAC/RS  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU  
 GS CALTEX CORPORATION, SEOUL/KR  
 INA MAZIVA LTD., ZAGREB/HR  
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL  
 MOL-LUB KFT, ALMASFUZITO/HU  
 NIS AD, NOVI SAD/RS  
 PETROGAL S.A., LISBOA/PT  
 PRISTA OIL HOLDING EAD, RUSE/BG  
 RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE  
 RN-LUBRICANTS, LLC, MOSCOW/RU  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN  
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE  
 TEXSA DO BRASIL LTDA, UMUARAMA/PR/BR  
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR  
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR

**Trade name (07F)**

ADDINOL FLUID TO-4 SAE 30  
 ARAL FLUID TO-4 30  
 AVISTA SPECIAL GEAR OIL TO-4 SAE 30  
 TECTROL UTTO-TO  
 BP AUTRAN 4 30  
 BP AUTRAN TO 430  
 GEAR OIL MEGA TO-4 SAE 30  
 CASTROL TRANSMAX OFFROAD 30  
 CASTROL TFC 430  
 CAT TDTO SAE 30  
 TORQUE FLUID 434  
 DELO TORQFORCE SAE 30  
 URSA TORQFORCE SAE 30  
 MOBILTRANS HD 30  
 TRANSHIDO TO-4 SAE 30  
 FUCHS TITAN UTTO TO-4 SAE 30  
 G-SPECIAL TO-4 30  
 KIXX GEARTEC TO-4 30  
 INA TRANSMATIK 30  
 Q8 TO-4 FLUID SAE 30  
 MOL TRANSFLUID TO-4 SAE 30  
 NISOTEC TRANSFLUID TO-4 SAE 30  
 GALP MULTITRANS 30  
 PRISTA TO-4 30  
 RAVENOL CATOEL TO-4 SAE 30  
 ROSNEFT KINETIC CATRAN SAE 30  
 SHELL SPIRAX S4 CX 30  
 SHELL SPIRAX S4 CX 30  
 SHELL SPIRAX S4 CX 30  
 SHELL SPIRAX S4 CX 30  
 SINOPEC PREMIUM HD 30 TRANSMISSION OIL  
 SRS WIOLIN 430  
 TEXSA TAC-4 30  
 TOTAL DYNATRANS AC 30  
 TOTAL DYNATRANS ACX 30

**ZF approval number**

ZF000511  
 ZF000149  
 ZF002033  
 ZF002194  
 ZF001000  
 ZF001405  
 ZF001740  
 ZF000267  
 ZF000999  
 ZF000869  
 ZF000798  
 ZF001903  
 ZF001905  
 ZF000035  
 ZF001108  
 ZF002185  
 ZF000239  
 ZF002238  
 ZF000401  
 ZF002118  
 ZF002244  
 ZF000329  
 ZF002015  
 ZF000884  
 ZF001852  
 ZF003343  
 ZF000005  
 ZF000969  
 ZF001209  
 ZF001088  
 ZF001932  
 ZF001921  
 ZF001821  
 ZF002217

**Lubricant class 07G**

Biodegradable lubricant (Special approval)

Viscosity grade: ISO VG 46 / 68

**Instructions on the use of biodegradable lubricants:**

The oil manufacturer's change-over directives included in the product description are to be observed when change-over to biodegradable lubricants is effected.

**Manufacturer (07G)**BASF SE, LUDWIGSHAFEN/DE  
PANOLIN AG, MADETSWIL/CH**Trade name (07G)**PROECO HE 801-46  
PANOLIN HLP SYNTH 46**ZF approval number**ZF001711  
ZF000592

**Lubricant class 07H**

Hydraulic oil HLP/HVLP in accordance with DIN 51524-2/-3

Viscosity grades: ISO VG 46 / 68 / 100

Base oil API Group 1 / 2 / 3 / 4

**Note:**

All trade products which satisfy the above specifications may be used. There will be no product listing.