



Powershift transmissions, type EcoLife, for buses and trucks

List of lubricants TE-ML 20

| Table of contents | Page |
|--|-------------|
| 1. Vehicle classification | 1 |
| 2. Approved lubricant classes for EcoLife | 1 |
| 3. Oil and filter change intervals | 2 |
| 3.1 Oil and filter change intervals for city buses as well as trucks used in long-haul and delivery traffic (ZF-EcoLife variants with the final letters B, BS, T, TK, TP, TKP): | 2 |
| 3.2 Oil and filter change intervals for coaches, transmission type Coachline ⁽⁴⁾: | 3 |
| 3.3 Oil and filter change intervals for coaches, transmission type Coach (6AP2300BC): | 4 |
| 4. Explanation of footnotes and comments | 4 |
| 5. Lubricant classes and approved trade products | 5 |

1. Vehicle classification

EcoLife transmissions are operated under loads and at oil temperatures which vary significantly. Oil releases and oil-change intervals are therefore vehicle-dependent. Consult the owner's manual for your vehicle to check whether TE-ML 20.100, 20.105 or 20.110 applies.

2. Approved lubricant classes for EcoLife

| Product groups | Vehicle classification acc. to owner's manual | Lubricant classes for service fill ⁽¹⁾ |
|--|---|---|
| EcoLife for city buses <u>EcoLife:</u> 6AP1000B, 6AP1000BS, 6AP1200B, 6AP1200BS, 6AP1400B, 6AP1400BS, 6AP1600BS, 6AP1620B, 6AP1700B, 6AP2000B and accessory bevel-gear variants <u>EcoLife2:</u> 6AP1020B, 6AP1220B, 6AP1420B, 6AP1620B, 6AP1720B, 6AP2020B EcoLife für coaches <u>EcoLife Coach:</u> 6AP2300BC <u>EcoLife2 Coachline:</u> 6AP1220C, 6AP1420C, 6AP1620C, 6AP1720C, 6AP2020C, 6AP2320C, 6AP2520C, 6AP2820C EcoLife for trucks ⁽³⁾ All ZF-EcoLife variants with the final letters T, TK, TP, TKP | TE-ML 20.100 | 20B / 20C / 20F / 20G |
| | TE-ML 20.105 | 20B / 20C / 20F / 20G |
| | TE-ML 20.110 | 20F / 20G |

| | |
|--|---|
| The list of lubricants TE-ML 20, edition 01.04.2024 replaces all previous editions. The current list can be requested from any ZF after-sales service center or accessed on the Internet under www.aftermarket.zf.com/lubricants . | ZF Friedrichshafen AG D-88038 Friedrichshafen www.zf.com/contact |
|--|---|

3. Oil and filter change intervals

3.1 Oil and filter change intervals for city buses as well as trucks used in long-haul and delivery traffic (ZF-EcoLife variants with the final letters B, BS, T, TK, TP, TKP):

Table 1: Vehicle classification TE-ML 20.100 (Oil sump temperatures up to 100°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20B | 60,000 km 1 x year |
| 20C | 120,000 km 1 x every 2 years |
| 20F / 20G | 240,000 km 1 x every 4 years |

Table 2: Vehicle classification TE-ML 20.105 (Oil sump temperatures up to 105°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20B | 60,000 km 1 x year |
| 20C | 120,000 km 1 x every 2 years |
| 20F / 20G | 180,000 km 1 x every 3 years |

Table 3: Vehicle classification TE-ML 20.110 (Oil sump temperatures up to 110°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20F / 20G | 120,000 km 1 x every 3 years |

3.2 Oil and filter change intervals for coaches, transmission type Coachline ⁽⁴⁾:**Table 1: Vehicle classification TE-ML 20.100 (Oil sump temperatures up to 100°C)**

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20B | 180,000 km 1 x year |
| 20C | 240,000 km 1 x every 2 years |
| 20F / 20G | 480,000 km 1 x every 4 years |

Table 2: Vehicle classification TE-ML 20.105 (Oil sump temperatures up to 105°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20B | 180,000 km 1 x year |
| 20C | 240,000 km 1 x every 2 years |
| 20F / 20G | 360,000 km 1 x every 3 years |

Table 3: Vehicle classification TE-ML 20.110 (Oil sump temperatures up to 110°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20F / 20G | 240,000 km 1 x every 3 years |

3.3 Oil and filter change intervals for coaches, transmission type Coach (6AP2300BC):

Table 1: Vehicle classification TE-ML 20.100 (Oil sump temperatures up to 100°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20B | 120,000 km 1 x year |
| 20C | 180,000 km 1 x every 2 years |
| 20F / 20G | 300,000 km 1 x every 4 years |

Table 2: Vehicle classification TE-ML 20.105 (Oil sump temperatures up to 105°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20B | 120,000 km 1 x year |
| 20C | 180,000 km 1 x every 2 years |
| 20F / 20G | 240,000 km 1 x every 3 years |

Table 3: Vehicle classification TE-ML 20.110 (Oil sump temperatures up to 110°C)

| Lubricant class ⁽¹⁾ | Oil and pressure filter change interval [km/year] ⁽²⁾ |
|--------------------------------|--|
| 20F / 20G | 180,000 km 1 x every 3 years |

4. Explanation of footnotes and comments

- (1) Refer to the following pages for approved commercial products and oil change intervals.
- (2) Oil and filter change required, depending on what occurs first. Use only ZF original filter elements, ZF order no. 4181 298 002. In the case that the initial reoiling from an ATF [automatic transmission fluid] of the lubricant class 20B to an ATF with extended oil change intervals is planned, then an interim oil change after 60,000 km / one year at the most is required.

The vehicle classification (temperature release class) determined by the OEM may be exceeded for a maximum of 5% of the operating time, and this amount of percentage exceedance may only occur in the next higher temperature release class. The next higher class must be applied as of >5%. The maximum oil sump temperature can be found in the respective vehicle documents of the manufacturer.

- (3) For information on oil and filter change intervals for special vehicles and stationary applications (ZF-EcoLife variants with the final letters E, EK, EP, EKP, S, SP, SK or SKP), please refer to the List of Lubricants TE-ML 25.
- (4) ZF-EcoLife variants type Coachline with the final letter C, except 6AP2300BC. For oil change intervals for 6AP2300BC transmission refer to section 3.3.

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.

5. Lubricant classes and approved trade products

Lubricant class 20B

Manufacturer (20B)

ADDINOL LUBE OIL GMBH, LEUNA/DE
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 CITGO PETROLEUM CORPORATION, HOUSTON/US
 COMERCIAL ROSHFRANS, S.A. DE C.V., MEXICO, D.F./MX
 ENI SUSTAINABLE MOBILITY S.P.A., ROME/IT
 ENI SUSTAINABLE MOBILITY S.P.A., ROME/IT
 ENOC MARKETING LLC, DUBAI/AE
 HUILES BERLIET S.A., SAINT-PRIEST/FR
 INA MAZIVA LTD., ZAGREB/HR
 MABANOL GMBH & CO. KG, HAMBURG/DE
 MOL-LUB KFT, ALMASFUZITO/HU
 OEL-BRACK AG, HUNZENSCHWIL/CH
 ORLEN OIL SP. Z O.O., KRAKOW/PL
 PAKELO MOTOR OIL S.P.A. A S.U., SAN BONIFACIO (VR)/IT
 PAKELO MOTOR OIL S.P.A. A S.U., SAN BONIFACIO (VR)/IT
 PETROLUBE OILS COMPANY, JEDDAH/SA
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY
 PHI OIL GMBH, ST. GEORGEN/AT
 RALOY LUBRICANTES, S.A. DE C.V., SANTIAGO TIANGUISTEN/MX
 RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES
 ROWE MINERALÖLWERK GMBH, WORMS/DE
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 TONGYI PETROLEUM CHEMICAL CO., LTD., BEIJING/CN
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR
 UNITED OIL COMPANY PTE LTD, SINGAPORE/SG
 VALVOLINE GLOBAL PRODUCTS, LEXINGTON/US
 VIBRA ENERGIA S.A., DUQUE DE CAXIAS/BR

Trade name (20B)

ADDINOL ATF XN 5
 LUBEX ATF-III KYS
 LUBEX ATF-III KYS
 BELGIN LUBEX MITRAS ATF III PLUS
 CEPSA ATF 3000 S
 DELO SYN ATF HD
 CITGO QUATRASYN SYNTHETIC TRANSMISSION FLUID
 ATF ALLPOWER MULTIVEHICULOS
 ENI ROTRA ATF II E
 ENI ROTRA ATF MULTI
 ENOC ACTIVE SYN VVM
 RTO STARMATIC S3
 INA ATF DX IIIH
 MABANOL RADON GEAR ATF III MV
 MOL ATF SYNT 3H
 MIDLAND OMNIMATIC
 HIPOL ATF II E
 AUXON II E
 ATF XT III FLUID
 PETROMIN ATF Z20 ECO
 PETRONAS TUTELA ATF 700 HD
 ATF D3 GOLD
 TRANSFLUID SYNTHETIC M-5
 RAVENOL DEXRON III H
 REPSOL MATIC III
 REPSOL AUTOMATOR ATF III
 ROWE HIGHTEC ATF 9000
 SINOPEC GREATWALL ATF HD S
 SINOPEC GREATWALL ATF HD
 SRS WIOLIN ATF III MV
 LINGXIAN 6+ AUTOMATIC TRANSMISSION FLUID
 FLUIDMATIC XLD FE
 UNITED MV 99
 SYN GARD™ ATF ES
 LUBRAX ATF HD

ZF approval number

ZF004911
 ZF002255
 ZF002293
 ZF008301
 ZF000386
 ZF001664
 ZF003690
 ZF000385
 ZF000951
 ZF003452
 ZF005942
 ZF008343
 ZF002314
 ZF004879
 ZF001895
 ZF003682
 ZF003623
 ZF000048
 ZF001177
 ZF001974
 ZF003627
 ZF003507
 ZF001025
 ZF001609
 ZF000318
 ZF008281
 ZF001937
 ZF003346
 ZF003348
 ZF002061
 ZF003377
 ZF008244
 ZF003562
 ZF003710
 ZF002120

Lubricant class 20C**Manufacturer (20C)**

ADDINOL LUBE OIL GMBH, LEUNA/DE
 ALLEGHENY PETROLEUM, WILMERDING, PA/US
 AOCUSA, PICO RIVERA/US
 BASF SE, LUDWIGSHAFEN/DE
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR
 BELLINI S.P.A., ZANICA/IT
 BP PLC., LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES
 CHAMPION CHEMICALS N.V., HEMIKSEM/BE
 EXOL LUBRICANTS LTD, WEDNESBURY/GB
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 GULF WESTERN OIL (AUST) PTY LTD, ST MARYS/AU
 H. BANTLEON GMBH / GESELLS. D. AVIA, ULM/DE
 HI-TEC OILS, SMITHFIELD/AU
 JOHN DEERE, MOLINE, ILLINOIS/US
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 LIQUI MOLY GMBH, ULM/DE
 LUKOIL LUBRICANTS EUROPE GMBH, VIENNA/AT
 MOL-LUB KFT, ALMASFUZITO/HU
 MOTOREX AG, LANGENTHAL/CH
 MOTOREX AG, LANGENTHAL/CH
 MOTUL SA, AUBERVILLIERS/FR
 OPET FUCHS MADENI YAG. SAN. VE TIC. A.S., IZMIR/TR
 OY TEBOIL AB, HELSINKI/FI
 PAKELO MOTOR OIL S.P.A. A S.U., SAN BONIFACIO (VR)/IT
 PETRO-CANADA LUBRICANTS INC., MISSISSAUGA, ONTARIO/CA
 PETROGAL S.A., LISBOA/PT
 PETROLUBE OILS COMPANY, JEDDAH/SA
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES
 S.I.R.A.L., NOLA NAPOLI/IT
 SASOL ENERGY, JOHANNESBURG/ZA
 SINGAPORE PETROLEUM COMPANY LIMITED, SINGAPORE/SG
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 TAMOIL ITALIA SPA, MILANO/IT
 TEDEX S.A., WARSZAWA/PL
 TONGYI PETROLEUM CHEMICAL CO., LTD., BEIJING/CN
 VALVOLINE AUSTRALIA PTY LTD, WETHERILL PARK, NSW/AU
 WOLF OIL CORPORATION N.V., HEMIKSEM/BE

Trade name (20C)

ADDINOL ATF XN HD
 ALTRA SHL EXTENDED DRAIN ZF 20C
 MV TYPE 20C ATF
 EMGARD 2805
 BELGIN LUBEX MITRAS ATF SYN ULTRA
 ATF OIL PAO PREMIUM EXTRA SAE 75W
 BP AUTRAN SYN 295
 CASTROL TRANSYND
 CASTROL TRANSMAX ATF Z
 TES-295 SYN TRANSMISSION FLUID
 CEPSA ATF 4000 S
 CHAMPION OEM SPECIFIC MULTI VEHICLE ATF HD-LD
 AUTOTRANS ELC
 MOBIL DELVAC 1 ATF
 TRANSWAY ATF ULTRA
 FUCHS TITAN ATF 5500
 SYN-TS® ZFV
 AVILUB FLUID ATZ 295
 MULTITRANS PLUS ATF
 HD SYNTHETIC TRANSMISSION FLUID
 Q8 AUTO 15 S
 LIQUI MOLY TOP TEC ATF 1700
 LUKOIL ATF SYNTH MN Z3
 MOL ATF 295
 YORK 886
 MOTOREX_YORK ATF VZ
 MOTUL ATF HD
 OTOKAR SPECTRA ATF Z
 TEBOIL FLUID ES-MAX
 ATF XT III FLUID PLUS
 DURADRIVE HD LONG DRAIN ATF
 GALP TRANSMATIC Z
 PETROMIN ATF Z20 LD
 TUTELA ATF 900 HD
 REPSOL Matic SINTETICO
 REPSOL AUTOMATOR ATF 14C
 SIROIL ATF MAXIMUM
 SYN TRANSMISSION OIL VI
 DURASHIFT ATF HDLD
 SINOPEC GREATWALL FULLY SYNTHETIC ATF HD S
 SINOPEC GREATWALL SYNTHETIC ATF HD
 TAMOIL ATF LONG LIFE HD
 TEDEX ATF SYNTHETIC (S)
 LINGXIAN 10+ AUTOMATIC TRANSMISSION FLUID
 HEAVY DUTY ATF PRO ECO PLUS
 WOLF OFFICIALTECH MULTI VEHICLE ATF HD-LD

ZF approval number

ZF004913
 ZF001756
 ZF002208
 ZF003370
 ZF008386
 ZF010429
 ZF000197
 ZF000226
 ZF002158
 ZF002298
 ZF006058
 ZF007147
 ZF001685
 ZF001827
 ZF001330
 ZF001797
 ZF004900
 ZF002288
 ZF001669
 ZF004851
 ZF001635
 ZF006000
 ZF009451
 ZF003361
 ZF004907
 ZF006107
 ZF003587
 ZF004737
 ZF001726
 ZF001748
 ZF004791
 ZF001893
 ZF002003
 ZF005936
 ZF003586
 ZF008282
 ZF003709
 ZF001091
 ZF004870
 ZF003345
 ZF003347
 ZF001672
 ZF002213
 ZF003378
 ZF003488
 ZF006128

Lubricant class 20F

Manufacturer (20F)

PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

Trade name (20F)

TUTELA TRANSMISSION ATF 120
SHELL SPIRAX S6 ATF ZM
ZF ECOFLUID A LIFE

ZF approval number

ZF000053
ZF006080
ZF001671

Lubricant class 20G

Manufacturer (20G)

VOLVO GROUP, GOTHENBURG/SE
ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

Trade name (20G)

VOLVO AUTOMATIC TRANSMISSION FLUID 97005
ZF ECOFLUID LIFE PLUS

ZF approval number

ZF008362
ZF001719