



Car Powertrain Technology

**Manual transmissions, double-clutch transmissions
and automatic transmissions for cars**

List of lubricants TE-ML 11

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The list of lubricants TE-ML 11, **edition 01.10.2022** 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.

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1. Manual transmissions

Product groups	Approved lubricants for service fills
S5-31 S5-39	According to spare part number of vehicle manufacturer: - Castrol BOT 338 => BMW Oil No. 2300 7533 513 => Castrol Syntrans B 75W => Castrol Transmax Manual B 75W
S6-37	According to spare part number of vehicle manufacturer: - Esso Gear Oil 304 / BMW Oil No. 2300 1434 404 (clutch bell housing label MTF-LT1) no longer available => replaced by Castrol BOT 338 - Castrol BOT 338 => BMW Oil No. 2300 7533 513 (clutch bell housing label MTF-LT2) => Castrol Syntrans B 75W => Castrol Transmax Manual B 75W - Castrol BOT 207 => BMW Oil No. 2300 7533 818 (clutch bell housing label MTF-LT3) Warning: use of incorrect lubricant can cause transmission failure
S6-35 S6-45 S6-50	According to spare part number of vehicle manufacturer: - Fuchs Titan FFL-3 => ZF Oil No. 0671.090.534 (ZF LifeguardFluid 7.3 DCT) => BMW Oil No. 8322 2167 666 (MTF-LT-5) => Daimler Oil No. A 002 989 04 03 => JLR Oil No. GX73-M1R564-AA
S6-53	According to spare part number of vehicle manufacturer: - Esso Gear Oil 304 / BMW Oil No. 2300 1434 404 (clutch bell housing label MTF-LT1) no longer available => replaced by Castrol BOT 338 - Castrol BOT 338 => BMW Oil No. 2300 7533 513 (clutch bell housing label MTF-LT2) => VW Oil No. N 05279800 => Castrol Syntrans B 75W => Castrol Transmax Manual B 75W - Castrol BOT 207 => BMW Oil No. 2300 7533 818 (clutch bell housing label MTF-LT3) Warning: use of incorrect lubricant can cause transmission failure
6S530	According to spare part number of vehicle manufacturer: - Castrol BOT 338 => Nissan Oil No. 32001 1BY0A => Castrol Syntrans B 75W => Castrol Transmax Manual B 75W
S7-45HL, S7-45HLA S7-47HL S7-55HL, S7-55HLA	According to spare part number of vehicle manufacturer: - ExxonMobil Mobilube PTX 75W-90 => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00 or - ExxonMobil Mobilube PTX FE 75W-80 => Porsche Oil No. N 052554 B0
S7-48HL S7-57HL, S7-57HLA	According to spare part number of vehicle manufacturer: - ExxonMobil Mobilube PTX FE 75W-80 => Porsche Oil No. N 052554 B0

2. Double-clutch transmissions

Product groups	Approved lubricants for service fills
7DT45HL, 7DT45HLA, 7DT45FL 7DT46HL, 7DT46HLA, 7DT46FL 7DT47HL 7DT48HL 7DT49HL 7DT50HL 7DT51HL 7DT55HL, 7DT55HLA, 7DT55FL 7DT70HLA 7DT71HLA 7DT72HLA 7DT78HL	According to spare part number of vehicle manufacturer: 1. Clutch section Fuchs Titan FFL-3 => ZF Oil No. 0671.090.534 (ZF LifeguardFluid 7.3 DCT) => Porsche Oil No. 999.917.080.00 2. Transmission section ExxonMobil Mobilube PTX 75W-90 => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00
7DT71HLA	According to spare part number of vehicle manufacturer: 1. Clutch section => Porsche Oil No. 999.917.080.01 2. Transmission section ExxonMobil Mobilube PTX 75W-90 => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00
7DT75, 7DT75A 7DT76, 7DT76A	According to spare part number of vehicle manufacturer: Fuchs Titan FFL-3 => ZF Oil No. 0671.090.534 (ZF LifeguardFluid 7.3 DCT) => Porsche Oil No. 999.917.080.00
8DT80, 8DT80A, 8DT80APH 8DT90, 8DT90A, 8DT90APH	According to spare part number of vehicle manufacturer: - Fuchs Titan FFL-8 => Porsche Oil No. 000.043.201.44 => Bentley Oil No. G 052524 B2
8DT55HL, 8DT55HLA 8DT80HLA	According to spare part number of vehicle manufacturer: 1. Clutch section Fuchs Titan FFL-8 => Porsche Oil No. 000.043.201.44 2. Transmission section ExxonMobil Mobilube PTX FE 75W-80 => Porsche Oil No. N 052554 B0

3. Automatic transmissions

Product groups	Approved lubricants for service fills
3HP22, 3HP22Q, 4HP14Q, 4HP18FL ⁽¹⁾ , 4HP18FLA ⁽²⁾ , 4HP18FLE ⁽¹⁾ , 4HP18Q, 4HP18QE, 4HP22, 4HP22EH, 4HP22HL ⁽³⁾ , 4HP24, 4HP24A ⁽²⁾	Automatic Transmission Fluid (ATF) according to lubricant classes 11A / 11B => Refer to the following pages for approved commercial products or Automatic Transmission Fluid (ATF) based on mineral base fluids according to former Dexron-II / Dexron-III specification by General Motors. => without listing
5HP18	According to marking: - Transmissions with black type plate Automatic Transmission Fluid (ATF) according to lubricant class 11B => Refer to the following pages for approved commercial products - Transmissions with green type plate or with green label on the oil pan. ZF LifeguardFluid 5 (ZF No. S671 090 170) => BMW Oil No. 8322 9407807 ATF according to lubricant class 11B are not permitted (exception: ZF LifeguardFluid 5) Warning: use of incorrect lubricant can cause transmission failure
5HP30	According to spare part number of vehicle manufacturer: - Shell ATF LA-2634 / BMW Oil No. 8322 9407765 (Marking of filling port of oil pan) no longer available => replaced by ZF LifeguardFluid 5 - ZF LifeguardFluid 5 (ZF No. S671 090 170) => BMW Oil No. 8322 9407807 (Marking of filling port of oil pan) => Rolls Royce Oil No. PL 31493PA
4HP20, 5HP19, 5HP19FL ⁽¹⁾ , 5HP19FLA ⁽²⁾ , 5HP19HL ⁽¹⁾ , 5HP19HLA ⁽²⁾ , 5HP24, 5HP24A ⁽²⁾	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 5 (ZF No. S671 090 170) => Audi / VW Oil No. G 052162 A1 / A2 / A6 => BMW Oil No. 8322 9407807 => Citroen Oil No. Z 000169756 => Jaguar Oil No. JLM 20238 => Mercedes Benz Oil No. A 0019892203 => Peugeot Oil No. Z 000169756 => Porsche Oil No. 999.917.547.00
6HP19, 6HP19A ⁽²⁾ - MPL-dependent (main parts list) 6HP19X - not for Audi Q7, 6HP21, 6HP21X, 6HP26, 6HP26X, 6HP26A61 - not for vehicles equipped with Audi W12-engine ⁽²⁾ , 6HP28, 6HP28X, 6HP28A61, 6HP32, 6HP32A ⁽²⁾ , 6HP32X	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 6 (ZF No. S671 090 255) => AML Oil No. 4G4319A509/AA/S => Audi / VW Oil No. G 055005 A1 / A2 / A6 => Bentley Oil No. PY112995PA => BMW Oil No. 8322 0142516 => Hyundai Oil No. 040000C90SG => Jaguar Oil No. Jaguar Fluid 8432 => Land Rover Oil No. TYK500050 => Maserati Oil No. 231603
6HP19A ⁽²⁾ - MPL-dependent (main parts list) 6HP19X - for Audi Q7, 6HP26A61 - for vehicles equipped with Audi W12-engine ⁽²⁾ 6HP28AF ⁽²⁾ 8HP45, 8HP45X, 8HP45HIS, 8HP45XHIS 8HP50, 8HP50HIS, 8HP50X, 8HP50XHIS; 8HP55A ⁽²⁾ , 8HP55AHIS ⁽²⁾ , 8HP55FL, 8HP55FLHIS, 8P55AH ⁽²⁾ , 8P55FLH, 8HP65A ⁽⁴⁾ , 8HP65AX ⁽⁵⁾ , 8HP70, 8HP70HIS, 8HP70XHIS, 8HP70L, 8HP70X, 8HP75, 8HP75X, 8HP75XHIS, 8HP90, 8HP90A ⁽²⁾ , 8HP90X, 8HP90AHIS ⁽²⁾ , 8HP90A74 ⁽²⁾ 8HP95A ⁽⁶⁾ , 8HP95AX ⁽⁵⁾	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 8 (ZF No. S671 090 312) => Audi / VW Oil No. G 060162 A1 / A2 / A6 ATF => BMW ATF 3+, Oil No. 83 22 2 289 720 => Jaguar Oil No. 02JDE 26444 => Land Rover Oil No. LR023288 => Chrysler Oil No. 68157995AA => Petronas Tutela Transmission AS8

Product groups (continuation)	Approved lubricants for service fills
8HP65APH, 8P75PH, 8P75XPH, 9HP48QXR, 9HP48QXO, 9HP48QX, 9HP48Q, 9HP50	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 9 (ZF No. AA01.500.001) ZF Lifeguard Hybrid 1 (ZF No. AA02.836.455) => BMW ATF 3+, Oil No. 83 22 2 289 720 => Honda ATF-Type 3.1.: 08263-999-01HE (EU), 08200-9017 (USA) => Jaguar Oil No. 02JDE 26444 ⁽⁷⁾ => Land Rover Oil No. LR023288 ⁽⁷⁾
8HP60, 8HP60MH, 8HP60X, 8HP60XMH, 8HP80, 8HP80MH, 8HP80X, 8HP80XMH, 8HP80XMH2, 8HP80XPH, 8P100XPH, 8P80PH, 8P80XPH	According to spare part number of vehicle manufacturer: ZF Lifeguard Hybrid 2 (ZF No. 0671.090.548) => BMW ATF 8, Oil No. 883 22 5 A28 F03

4. Explanation of footnotes and comments

Footnotes

- (1) Filling differential with transmission oil Castrol SAF-AG4 => Audi / VW Oil No. N 052145000, Porsche Oil No. 999.917.545.00.
- (2) Split oil supply front / rear axle differential:
 - Filling front axle differential with transmission oil Castrol SAF-AG4
=> Audi / VW Oil No. N 052145000, Porsche Oil No. 999.917.545.00
 - Filling rear axle differential with transmission oil Castrol SAF-AG4 + 4% Sturaco FM 1992 KS
=> Audi / VW Oil No. G 055145 A2
 Common oil supply front /rear axle differential:
 - Filling with transmission oil Castrol SAF-AG4 + 4% Sturaco FM 1992 KS
=> Audi / VW Oil No. G 055145 A2
- (3) Filling differential with transmission oil API GL-5, MIL-L-2105D, MIL-PRF-2105E, SAE J 3260, viscosity class SAE 75W-90 or SAE 90.
- (4) 8HP65A Status: April 2017

Application	front-axle differential	rear-axle center differential
Q5 B9 (A4/A5) TDI 260kW C8 (A6/A7) TDI D5 (A8) R4 + V6 Q8 R4 + V6 TDI Touareg R4 + V6 TDI	Castrol BOT851L Audi / VW / Porsche Oil No. N.052.190.D0, G.065.190.A2	Castrol SAF-AG4 + 4% Sturaco FM1992 KS
B9 (A4/A5) except for TDI 260kW C8 (A6/A7) TFSI D5 (A8) V8 Q7 Q8 V6 TFSI Touareg V6 TFSI	Castrol SAF-AG4 Audi / VW Oil No. N.052.145.00, G.052.145.A2	Audi / VW Oil No. N.052.145.Z0, G.055.145.S2

- (5) Fill front-axle differential and all-wheel distributor transmission with Castrol BOT851L transmission oil
=> Audi / VW / Porsche Oil No. N.052.190.D0, G.065.190.A2
- (6) Fill front-axle differential and rear-axle center differential with Castrol SAF-AG4 + 4% Sturaco FM1992 KS transmission oil
=> Audi / VW Oil No. N.052.145.Z0, G.055.145.S2
- (7) Only valid for service and ZF remanufactured transmissions.

Comments

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. Maintenance recommendations ZF automatic transmissions

<p>3/4-speed automatic transmissions: ZF 3 and 4-speed automatic transmissions must be filled with approved ATF oils according to ZF list of lubricants TE-ML 11, lubricant class 11A / 11B or with mineral ATF oils according to the former Specification Dexron II / Dexron III by General Motors. For oil-change intervals consult the vehicle manufacturer's specifications.</p>
<p>5-, 6-, 8- and 9-speed as well as 4HP20 automatic transmissions: ZF 5-, 6-, 8- and 9-speed as well as the ZF 4HP20 automatic transmissions are filled maintenance-free with specially developed semi-synthetic ATF oils. However, due to the many factors influencing the service life of transmissions in individual operation, ZF recommends an oil change after 150,000 km for its transmissions. In operating conditions with high temperatures and loads, or with unknown vehicle use in the past, it can make sense to change the transmission oil at shorter intervals.</p> <p>In each case, only released ATF oil may be used for oil changes. And oil changes must be performed in accordance with the relevant specifications. The exception is the ZF 5HP18 automatic transmission which must be filled differently depending on the version.</p>
<p>The released ATF oils in each case are specified in the ZF Lubricants List TE-ML 11. Please consider also the service specification of the vehicle manufacturer.</p>

6. Lubricant classes and approved trade products

Lubricant class 11A

Automatic Transmission Fluid (ATF)

Manufacturer (11A)

ALEXANDRIA MINERAL OILS COMPANY, ALEXANDRIA/EG
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 ELLIS ENTERPRISES EAST D.O.O. KRUSEVAC, KRUŠEVAC/RS
 ELLIS ENTERPRISES EAST D.O.O. KRUSEVAC, KRUŠEVAC/RS
 ENI S.P.A., ROME/IT
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 INA MAZIVA LTD., ZAGREB/HR
 KOCAK PETROL URUNLERI SAN.VE TIC.LTD.STI, KOCAELI/TR
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 LIEBHERR HYDRAULIKBAGGER GMBH, KIRCHDORF/DE
 LIQUI MOLY GMBH, ULM/DE
 MEGUIN GMBH & CO. KG, SAARLOUIS/DE
 MOTUL SA, AUBERVILLIERS/FR
 ORLEN OIL SP. Z O.O., KRAKOW/PL
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY
 PRISTA OIL HOLDING EAD, RUSE/BG
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 UNIL OPAL, SAUMUR/FR

Trade name (11A)

AMOC POWER
 CASTROL ATF DEX II MULTIVEHICLE
 CASTROL TRANSMAX ATF DX II MULTIVEHICLE
 TEXAMATIC 4291
 ATF DII
 VALVOLINE HEAVY DUTY ATF D-II
 ENI ROTRA ATF II D
 MOBIL ATF 220
 MOBIL ATF 220
 INA ATF SUPER
 SPEEDOL ATF DEXRON II
 Q8 AUTO Z3D
 LIEBHERR HYDRAULIC-GEAR ATF
 LIQUI MOLY ATF DEXRON IID
 MEGOL HYDRAULIKOEL ATF DEXRON II D
 MOTUL DEXRON II D
 HIPOL ATF II D
 TUTELA TRANSMISSION STARFLUID HD-ED
 PRISTA ATF
 SHELL SPIRAX S2 ATF AX
 MATIC D

ZF approval number

ZF001702
 ZF000223
 ZF003358
 ZF001574
 ZF001187
 ZF008168
 ZF007174
 ZF000033
 ZF006029
 ZF000248
 ZF000979
 ZF003726
 ZF002119
 ZF002052
 ZF001992
 ZF001104
 ZF000081
 ZF000992
 ZF000355
 ZF005982
 ZF001071

Lubricant class 11B

Automatic Transmission Fluid (ATF)

Manufacturer (11B)

CASTROL LTD, LONDON/GB
CASTROL LTD, LONDON/GB
EXXONMOBIL CORPORATION, HOUSTON, TX/US
EXXONMOBIL CORPORATION, HOUSTON, TX/US
FUCHS PETROLUB SE, MANNHEIM/DE
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

Trade name (11B)

CASTROL TRANSMAX Z
CASTROL TRANSMAX ATF Z
MOBIL ATF D 21065
MOBIL ATF LT 71141
FUCHS TITAN ATF 1
Q8 AUTO 15
ZF LIFEGUARDFLUID 5

ZF approval number

ZF000221
ZF002158
ZF000038
ZF000044
ZF003602
ZF002269
ZF001363