



Commercial Vehicle and  
Special Driveline Technology

## ZF assemblies in special purpose vehicles

## List of lubricants TE-ML 13

Product groups	Service fill in acc. with Nato code <sup>(5)</sup>	Service fill in acc. with ZF list of lubricants TE-ML (1), (4)
<b>1. Assemblies for wheeled vehicles</b>		
<b>1.1 Powershift transmissions</b>		
- 3/4HP22 / 24; 4HP220 / 240 with and without VG	none	11A, 11B
- 6HP260	none	ZF Lifeguardfluid6, Petronas Tutela Transmissions VTL, refer to TE-ML 11
- PW45H1; 4PW95H1; 4PW200H2	O-1178	03A, 03E only at ambient temperatures below - 10°C: 03D, 03F
- HP500 / 502; HP600 / 602; HP900 / 902; HP1500; 4HP2000H1	O-1178	14
<b>1.2 Constant-mesh transmissions</b>	O-226, O-1178	ZF-Ecofluid M 02A, 02B, 02C, 02D, 02E, 02H, 02L
<b>1.3 Manual transmissions</b>		
- Ecolite 6S800WO, 6S1000WO	none	ZF-Ecofluid M 02A (2,7), 02B (2,7), 02D (2), 02E, 02L (2)
- Ecosplit without ZF-Intarder	(O-1178) (2)	ZF-Ecofluid M 02A, 02B, 02C, 02D, 02E, 02H, 02L
- Ecosplit with ZF-Intarder	(O-1178) (2)	ZF-Ecofluid M 02C, 02D, 02E, 02H, 02L
- Transmatic	(O-1178) (2)	02C
- Torque converter lock-up clutches (WSK) with <u>separate</u> oil circuit	O-1178	02C, 14
<b>1.4 Automatic transmissions</b>		
- AS Tronic mid	(O-1178) (2)	ZF-Ecofluid M 02A, 02B, 02D (2), 02E, 02L
- AS Tronic without ZF-Intarder	(O-1178) (2)	ZF-Ecofluid M 02A, 02B, 02D (2), 02E, 02H, 02L
- AS Tronic with ZF-Intarder	(O-1178) (2)	ZF-Ecofluid M 02D (2), 02E, 02H, 02L
- TC Tronic Transmission AS Tronic without ZF-Intarder	(O-1178) (2)	ZF-Ecofluid M 02A, 02B, 02D (2), 02E, 02H, 02L
Torque converter lock-up clutches (WSK) TC 2	O-1178	02C, 14

**Note continuation of the table on page 2!**

The list of lubricants TE-ML 13, **Edition 01.07.2009** 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](http://www.zf.com).

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Product groups	Service fill in acc. with Nato code <sup>(5)</sup>	Service fill in acc. with ZF list of lubricants TE-ML <sup>(1), (4)</sup>
<b>1.4 Automatic transmissions (continued)</b>		
- TC Tronic HD Transmission AS Tronic with ZF-Intarder	(O-1178) <sup>(2)</sup>	ZF-Ecofluid M 02D <sup>(2)</sup> , 02E, 02H, 02L
Torque converter lock-up clutches (WSK) TCHD	none	ZF-Ecofluid M, 02E
<b>1.5 Transfer case <u>installed</u></b>		
- A800	as main transmission	
- VG 1600	O-226 <sup>(8)</sup> , (O-1178) <sup>(9)</sup>	19B, 19C
<b>1.6 <u>Separate</u> installation of transfer case</b>		
- A800	O-1178	12
- VG 250	O-1178	14
1.7 Drive axles, differentials, axle heads, LKST	O-226	12
1.8 AAT3000	O-226	12
<b>2. Assemblies for tracked vehicles</b>		
<b>2.1 Powershift transmissions</b>		
- 3HP22	none	11A, 11B
- HP500 / 502; HP600 / 602; HP900 / 902	O-1178	14
- 4HP250; LSG 300 / 1500 / 2000 / 3000	O-1178	14
- LSG 1000	O-1178, O-236 <sup>(6)</sup> , O-1236 <sup>(6)</sup>	ZF-Ecofluid A PLUS (14E), 03A
- LSG 3000 IVECO (C1)	O-1178	
<b>2.2 Final drive</b>		
- P1700 / 11000	O-226, O-184	12
- P25000	O-226, O-184, OY1005	12 <sup>(3)</sup>
2.3 Steering gears LGG110	O-226	12
2.4 Spur gear drive ST200 / 300	O-1178	14
<b>3. Greasing points</b> Strictly adhere to grease grades listed in the maintenance manual.	G-353, G-395, G-421	
<b>4. Brake systems</b>	refer to TE-ML 15	15

- (1) Available from all After-Sales Service points and on the Internet under [www.zf.com](http://www.zf.com).
- (2) **Only permitted from first oil change. ZF-initial fill oil may not be changed before 3 years.**
- (3) The following lubricants may also be used:

Exxon Mobil Corporation, Fairfax, Virginia/USA	Mobil Gear SHC XMP 460
Klüber Lubrification, München/D	Klüber Synth EG 4-460
- (4) The oil change intervals stated in the List of Lubricants do not apply for these products. Special agreements to be discussed with ZF.
- (5) Low temperature limits:  
Pay due attention to the respectively valid vehicle-specific warm-up and reoil specifications.
- (6) Use only permissible for restricted temperature range ( $> -6^{\circ}\text{C}$ ). Release is granted by ZF.
- (7) In moderate climate zones, shift quality of non-automated transmissions is impaired when using the lubrication classes 02A / 02B.
- (8) Use from  $-20^{\circ}\text{C}$ , oil change intervals every 20,000km / 1 year (oil change required, depending on what occurs first).
- (9) Use only between  $-46^{\circ}\text{C}$  and  $-20^{\circ}\text{C}$ . Oil change intervals every 20,000km / 1 year (oil change required, depending on what occurs first).  
Before changing over to oil O-1178, new transmissions have to be operated for at least 10,000 km with axle drive oil acc. to lubricant class 19C.

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.