Powershift transmissions, type EcoLife, for buses and trucks

List of lubricants TE-ML 20

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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

<table>
<thead>
<tr>
<th>Product groups</th>
<th>Vehicle classification acc. to owner's manual</th>
<th>Lubricant classes for service fill (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EcoLife for buses</td>
<td>TE-ML 20.100</td>
<td>20B / 20C / 20F / 20G</td>
</tr>
<tr>
<td>6AP1000B, 6AP1000BS, 6AP1020B, 6AP1200B, 6AP1200BS, 6AP1220B, 6AP1400B, 6AP1400BS, 6AP1420B, 6AP1600BS, 6AP1620B, 6AP1700B, 6AP1720B, 6AP2000B, 6AP2020B, 6AP2300BC and accessory bevel-gear variants</td>
<td>TE-ML 20.105</td>
<td>20B / 20C / 20F / 20G</td>
</tr>
<tr>
<td>EcoLife for trucks</td>
<td>TE-ML 20.110</td>
<td>20F / 20G</td>
</tr>
<tr>
<td>All ZF-EcoLife variants with the final letters T, TK, TP, TKP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Refer to the following pages for approved commercial products and oil change intervals.

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.

The list of lubricants TE-ML 20, edition 01.04.2020 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.
3. Oil and filter change intervals

3.1 Oil and filter change intervals for buses as well as trucks used in long-haul and delivery traffic (ZF-EcoLife variants with the final letters T, TK, TP, TKP) (3):

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

<table>
<thead>
<tr>
<th>Lubricant class (1)</th>
<th>Oil and pressure filter change interval [km/year] (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20B</td>
<td>60,000 km 1 x year</td>
</tr>
<tr>
<td>20C</td>
<td>120,000 km 1 x every 2 years</td>
</tr>
<tr>
<td>20F / 20G</td>
<td>240,000 km 1 x every 4 years</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Lubricant class (1)</th>
<th>Oil and pressure filter change interval [km/year] (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20B</td>
<td>60,000 km 1 x year</td>
</tr>
<tr>
<td>20C</td>
<td>120,000 km 1 x every 2 years</td>
</tr>
<tr>
<td>20F / 20G</td>
<td>180,000 km 1 x every 3 years</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Lubricant class (1)</th>
<th>Oil and pressure filter change interval [km/year] (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20F / 20G</td>
<td>120,000 km 1 x every 3 years</td>
</tr>
</tbody>
</table>

(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.

(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.
3.2 Oil and filter change intervals for coaches (6AP2300BC) (3):

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

<table>
<thead>
<tr>
<th>Lubricant class (1)</th>
<th>Oil and pressure filter change interval [km/year] (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20B</td>
<td>120,000 km / 1 x year</td>
</tr>
<tr>
<td>20C</td>
<td>180,000 km / 1 x every 2 years</td>
</tr>
<tr>
<td>20F / 20G</td>
<td>300,000 km / 1 x every 4 years</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Lubricant class (1)</th>
<th>Oil and pressure filter change interval [km/year] (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20B</td>
<td>120,000 km / 1 x year</td>
</tr>
<tr>
<td>20C</td>
<td>180,000 km / 1 x every 2 years</td>
</tr>
<tr>
<td>20F / 20G</td>
<td>240,000 km / 1 x every 3 years</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Lubricant class (1)</th>
<th>Oil and pressure filter change interval [km/year] (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20F / 20G</td>
<td>180,000 km / 1 x every 3 years</td>
</tr>
</tbody>
</table>

(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.
(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. Lubricant classes and approved trade products

## Lubricant class 20B

<table>
<thead>
<tr>
<th>Manufacturer (20B)</th>
<th>Trade name (20B)</th>
<th>ZF approval number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTRIS SA, GIORNICO/CH</td>
<td>ASTRIS ATF GLOBAL</td>
<td>ZF002187</td>
</tr>
<tr>
<td>BARDAHL ASIA PACIFIC PTE LTD, SINGAPORE/SG</td>
<td>SYNMATRX TRAN-HD</td>
<td>ZF002246</td>
</tr>
<tr>
<td>BELGIN MADERI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR</td>
<td>LUBEX ATF-III KY5</td>
<td>ZF002255</td>
</tr>
<tr>
<td>BELGIN MADERI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR</td>
<td>LUBEX ATF-III KY5</td>
<td>ZF002293</td>
</tr>
<tr>
<td>CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES</td>
<td>CEPSA ATF 3000 S</td>
<td>ZF000386</td>
</tr>
<tr>
<td>CHEVRON LUBRICANTS, SAN RAMON, CA/US</td>
<td>DELO SYN ATF HD</td>
<td>ZF001164</td>
</tr>
<tr>
<td>CITOQ PETROLEUM CORPORATION, HOUSTON/US</td>
<td>CITGO QUATRAIN SYNTHETIC TRANSMISSION FLUID</td>
<td>ZF003690</td>
</tr>
<tr>
<td>COMERCIAL ROSHRANS, S.A. DE C.V., MEXICO, D.F./MX</td>
<td>ATF ALLPOWER MULTIVEHICULOS</td>
<td>ZF000385</td>
</tr>
<tr>
<td>ENI S.P.A., ROME/IT</td>
<td>ENI ROTA RAM II E</td>
<td>ZF000951</td>
</tr>
<tr>
<td>FUCHS PETROLUB SE, MANNHEIM/DE</td>
<td>TRANSWAY ATF EXTRA</td>
<td>ZF001332</td>
</tr>
<tr>
<td>GAZPROMNEFT-LUBRICATIONS, MOSCOW/RU</td>
<td>G-BOX ATF DX III</td>
<td>ZF001956</td>
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<tr>
<td>GAZPROMNEFT-LUBRICATIONS, MOSCOW/RU</td>
<td>G-BOX ATF DX III</td>
<td>ZF002221</td>
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<tr>
<td>INA MAZIVA LTD., ZAGREB/HR</td>
<td>INA ATF DX III</td>
<td>ZF002314</td>
</tr>
<tr>
<td>LUBRICATION ENGINEERS, INC., FORT WORTH, TEXAS/US</td>
<td>LE 1150</td>
<td>ZF001676</td>
</tr>
<tr>
<td>MOL-LUBE KFT, ALMASFUZITO/HU</td>
<td>MOL ATF SYNT 3H</td>
<td>ZF001895</td>
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<tr>
<td>OEL-BRACK AG, HUNZENSCHWIL/CH</td>
<td>MIDLAND OMNIMATIC</td>
<td>ZF003682</td>
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<tr>
<td>OOO &quot;LKK-INTERNATIONAL&quot;, MOSCOW/RU</td>
<td>LUKOIL ATF SYNTH MULTI</td>
<td>ZF001127</td>
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<tr>
<td>OOO &quot;LKK-INTERNATIONAL&quot;, MOSCOW/RU</td>
<td>LUKOIL ATF SYNTH MULTI</td>
<td>ZF001944</td>
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<tr>
<td>ORLEN OIL SP. Z.O.O., KRAKOW/PL</td>
<td>HIPOL ATF II E</td>
<td>ZF003623</td>
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<tr>
<td>PAKOAL OIL OIL, SAN BONIFACIO (VR)/IT</td>
<td>AUXON II E</td>
<td>ZF000048</td>
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<tr>
<td>PAKOAL OIL OIL, SAN BONIFACIO (VR)/IT</td>
<td>ATF XT III FLUID</td>
<td>ZF001177</td>
</tr>
<tr>
<td>PETROBRAS DISTRIBUTIDORA S.A., DUQUE DE CAXIAS/BR</td>
<td>LUBRAX ATF HD</td>
<td>ZF002120</td>
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<tr>
<td>PETROMIN CORPORATION, JEDDAH/SA</td>
<td>PETROMIN ATF Z20 ECO</td>
<td>ZF001974</td>
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<tr>
<td>PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY</td>
<td>PETRONAS TUTELA ATF 700 HD</td>
<td>ZF003627</td>
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<tr>
<td>PHI OIL GMBH, ST. GEORGEN/AT</td>
<td>ATF D3 GOLD</td>
<td>ZF003057</td>
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<td>RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE</td>
<td>RAVENOL DEXRON III H</td>
<td>ZF001609</td>
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<tr>
<td>REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES</td>
<td>REPSOL MATIC III</td>
<td>ZF000318</td>
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<tr>
<td>REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES</td>
<td>REPSOL MATIC LB ATF</td>
<td>ZF001751</td>
</tr>
<tr>
<td>ROWE MINERALOLWERK GMBH, WORMS/DE</td>
<td>ROWE HIGITEC ATF 9000</td>
<td>ZF001937</td>
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<tr>
<td>SINOPEC LUBRICANT CO., LTD., BEIJING/CHN</td>
<td>SINOPEC GREATA WALL ATF HD S</td>
<td>ZF003346</td>
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<td>SINOPEC LUBRICANT CO., LTD., BEIJING/CHN</td>
<td>SINOPEC GREATA WALL ATF HD</td>
<td>ZF003348</td>
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<tr>
<td>SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE</td>
<td>SRS VIOLIN ATF III MV</td>
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<tr>
<td>TONGYI PETROLEUM CHEMICAL CO., LTD., BEIJING/CHN</td>
<td>LINGXIAN 6+ AUTOMATIC TRANSMISSION FLUID</td>
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<td>TOTAL LUBRIFANTS S.A., NANTERRE/FR</td>
<td>TOTAL FLUIDE XLD FE</td>
<td>ZF003729</td>
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<tr>
<td>UNITED OIL COMPANY PTE LTD, SINGAPORE/SINGAPORE/SG</td>
<td>UNITED MV 99</td>
<td>ZF003132</td>
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<tr>
<td>VALVOLINE, LEXINGTONUS</td>
<td>SYN GARD™ ATF ES</td>
<td>ZF003710</td>
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## Lubricant class 20C

<table>
<thead>
<tr>
<th>Manufacturer (20C)</th>
<th>Trade name (20C)</th>
<th>ZF approval number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLEGHENY PETROLEUM, WILMERDING, PA/US</td>
<td>ALTRA SHL EXTENDED DRAIN ZF 20C</td>
<td>ZF001756</td>
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<tr>
<td>AMSOIL, INC., SUPERIOR, WI/US</td>
<td>TORQUE-DRIVE SYNTHETIC ATF</td>
<td>ZF001841</td>
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<tr>
<td>ARAL AG, BOCHUM/DE</td>
<td>ARAL GETRIEBÖL ATF LD</td>
<td>ZF000144</td>
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<tr>
<td>BASF SE, LUDWIGSHAFENFEDER</td>
<td>EMGARD 2805</td>
<td>ZF003370</td>
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<tr>
<td>BP PLC., LONDON/GB</td>
<td>BP AUTRAN LTF</td>
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<tr>
<td>BP PLC., LONDON/GB</td>
<td>BP AUTRAN SYN 295</td>
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<td>BUCHER AG, LANGENTHAL, LANGENTHAUDEN</td>
<td>ATF VZ</td>
<td>ZF000369</td>
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<td>CASTROL LTD, LONDON/GB</td>
<td>CASTROL TRANSMAX Z</td>
<td>ZF000221</td>
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<td>CASTROL LTD, LONDON/GB</td>
<td>CASTROL TRANSYD</td>
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<td>EXXONMOBIL CORPORATION, HOUSTON, TX/US</td>
<td>MOBIL DELVAC SYNTHETIC ATF</td>
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<td>MOBIL DELVAC 1 ATF</td>
<td>ZF001827</td>
</tr>
<tr>
<td>FUCHS PETROLUB SE, MANNHEIM/DE</td>
<td>TRANSWAY ATF ULTRA</td>
<td>ZF001330</td>
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<tr>
<td>H. SANTLEON GMBH / GESSELS. D. AVIA, ULM/DE</td>
<td>FUCHS TITAN ATF 5500</td>
<td>ZF001797</td>
</tr>
<tr>
<td>Hi-TEC OILS, SMITHFIELD/AU</td>
<td>AVIUS FLUID ATZ 295</td>
<td>ZF002289</td>
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<tr>
<td>KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL</td>
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<td>ZF001635</td>
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<tr>
<td>LUBRICATING SPECIALTIES COMPANY, PICO RIVERAUS</td>
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<td>MOL ATF 295</td>
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<td>MOTUL SA, AUBERVILLIERS/FR</td>
<td>MOTUL ATF HD</td>
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<td>ODO &quot;LK-INTERNATIONAL&quot;, MOSCOW/RU</td>
<td>LUKOL ATF SYNTH MN Z3</td>
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<td>OY TEOBL AB, HELSINKI/FI</td>
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<td>ATF XT III FLUID PLUS</td>
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<td>PETROGAL S.A., LISBOA/PT</td>
<td>DURADRIVE HD LONG DRAIN ATF</td>
<td>ZF004791</td>
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<tr>
<td>PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MI</td>
<td>GALP TRANSAMATIC Z</td>
<td>ZF001893</td>
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<tr>
<td>PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MI</td>
<td>PETRONAS TUTELA ATF 900 HD</td>
<td>ZF004738</td>
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<tr>
<td>REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES</td>
<td>REPSOL MATIC SINTETICO</td>
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<tr>
<td>S.R.L., NOLA / NAPOLI/IT</td>
<td>SIROL ATF MAXIMUM</td>
<td>ZF003709</td>
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<td>SACHEM ENERGY, JOHANNESBURG/ZA</td>
<td>SYN TRANSMISSION OIL V1</td>
<td>ZF001393</td>
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<tr>
<td>SINOPEC LUBRICANT CO., LTD., BEIJING/CH</td>
<td>SINOPEC GREATWALL FULLY SYNTHETIC ATF HD S</td>
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<td>SINOPEC LUBRICANT CO., LTD., BEIJING/CH</td>
<td>SINOPEC GREATWALL SYNTHETIC ATF HD</td>
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<td>SINOPEC LUBRICANT CO., LTD., BEIJING/CH</td>
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<td>ZF001512</td>
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<td>TEDEX S.A., WARSZAWA/POLAND</td>
<td>TEDEX ATF SYNTHETIC (S)</td>
<td>ZF002213</td>
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<tr>
<td>TONGYI PETROLEUM CHEMICAL CO., LTD., BEIJING/CH</td>
<td>LINGXIAN 10+ AUTOMATIC TRANSMISSION FLUID</td>
<td>ZF003378</td>
</tr>
<tr>
<td>VALVOLINE AUSTRALIA PTY LTD, WETHERILL PARK, NSW/AU</td>
<td>HEAVY DUTY ATF PRO ECO PLUS</td>
<td>ZF003488</td>
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<tr>
<td>VALVOLINE EUROPE, DORDRECHT/NL</td>
<td>VALVOLINE HEAVY DUTY ATF PRO ECO</td>
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### Lubricant class 20F

<table>
<thead>
<tr>
<th>Manufacturer (20F)</th>
<th>Trade name (20F)</th>
<th>ZF approval number</th>
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<tbody>
<tr>
<td>PETRONAS LUBRICANTS INTERNATIONAL SDN BHD, KUALA LUMPUR/MY</td>
<td>TUTELA TRANSMISSION ATF 120</td>
<td>ZF000053</td>
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<tr>
<td>SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB</td>
<td>SHELL SPIRAX S6 ATF ZM</td>
<td>ZF001483</td>
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<tr>
<td>ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE</td>
<td>ZF ECOFLUID A LIFE</td>
<td>ZF001671</td>
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### Lubricant class 20G

<table>
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<tr>
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<th>Trade name (20G)</th>
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<tbody>
<tr>
<td>ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE</td>
<td>ZF ECOFLUID LIFE PLUS</td>
<td>ZF001719</td>
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