



**Powershift transmissions type PowerLine (US production)**

**List of lubricants TE-ML 31**

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**1. Approved lubricant classes for PowerLine transmissions (US production)**

<b>Product groups</b>	<b>Lubricant classes for service fill <sup>(2)</sup></b>
8 AP 560 TN, 8 AP 660 TN, 8 AP 760 TN, 8 AP 860 TN, 8 AP 1000 TN <sup>(1)</sup>	31D

The list of lubricants TE-ML 31, **edition 01.07.2024** 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](http://www.aftermarket.zf.com/lubricants).

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## 2. Oil change intervals

Application	Oil change interval [mls/ year] <sup>(3)</sup> at a maximum permissible oil temperature of		
	85°C <sup>(4)</sup>	95°C	105°C
<b>Special applications</b>  <b>Average vehicle speed &lt; 20 mph,</b> <b>e.g. municipal vehicles, construction site</b> <b>operation <sup>(5)</sup></b>	110.000 mls 1 x every 3 years	75.000 mls 1 x every 3 years	40.000 mls 1 x every 3 years
<b>Standard</b>  <b>Urban and regional distribution traffic</b>	220.000 mls 1 x every 3 years	150.000 mls 1 x every 3 years	80.000 mls 1 x every 3 years
<b>Long-distance transport</b>  <b>Average vehicle speed &gt; 40 mph</b>	330.000 mls 1 x every 3 years	225.000 mls 1 x every 3 years	120.000 mls 1 x every 3 years

## 3. Explanation of footnotes and comments

### Footnotes

- (1) Approved lubricants for 8 AP xxxx TN. For transmissions from EU production until 08/2023, see ZF List of Lubricants TE-ML 26. The List of Lubricants valid for the respective transmission is printed on the type plate.
- (2) Refer to the following pages for approved commercial products and oil change intervals.
- (3) Oil change required, depending on what occurs first. The maximum oil sump temperature may be exceeded for a maximum of 5% of the time. As of > 5%, the next higher class is to be applied.
- (4) For this temperature class, it is mandatory to provide a hose breather in a dry area.
- (5) For 8AP transmissions in Off road or military applications please refer to the List of Lubricants TE-ML 25.

### Comments

1. Instructions for transmission ventilation in accordance with Installation Guideline 1390 765 101 must be followed.
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 31D

**Manufacturer (31D)**

ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

**Trade name (31D)**

ZF LIFE GUARD HYBRID 2

**ZF approval number**

ZF008240