



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)

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

The list of lubricants TE-ML 31, **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.

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2. Oil change intervals

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

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