Delo Gear TDL

Proven performance Total Driveline Lubricant

Product description

Delo® Gear TDL are proven performance Total Driveline Lubricants designed for both API GL-4 and API GL-5 applications, and offer good thermal stability in higher temperature operations.

Delo Gear TDL lubricants are formulated with mineral base oils in combination with a high performance additive package and are available in SAE 80W-90 and SAE 80W-140 viscosity grades.

Customer benefits

- Suitable for use in synchronised manual transmissions and final drives, helping reduce product inventories
- Formulated to offer longer drain intervals than standard mineral gear oils
- High performance additives help provide dependable extreme pressure protection and system wear resistance
- Dependable oxidation stability characteristics designed to prevent oil thickening and harmful varnish and deposit formation

Applications

- Delo Gear TDL is designed for use in automotive manual transmissions and drive axles where a fluid meeting the requirements of API GL-4, API GL-5, API MT-1 or SAE J2360 (former MIL-PRF-2105E) is required.
- The thermal stability makes Delo Gear TDL suitable for use in applications with higher operating temperatures than is possible when using conventional mineral gear oils. It is also capable of longer service intervals, typically 75% longer than conventional mineral gear oils. (The precise service interval varies according to application and service severity – refer to the manufacturers' literature for further details)

Product highlights

- **For use in synchronised manual transmissions and final drives**
- **Formulated to offer longer drain intervals**
- **Helps provide extreme pressure and wear protection**
- **Designed to prevent oil thickening, varnish and deposit formation**

Selected specification standards include:

API	Bosch
DAF	MAN
Mercedes Benz	SAE
ZF	

- Delo Gear TDL is not recommended for use in ZF transmissions fitted with intarders (this includes some models from constructors such as DAF and MAN). For these exceptions, use an approved fluid such as Delo Syn-MTF XZ 75W-80.

Approvals, performance and suitable for use

Approvals

SAE Viscosity Grade		80W-90	80W-140
• MAN	341 Type Z2	X [12]	—
• MAN	342 Type M2	X [12]	—
• Volvo	97321	X [13]	X [14]
• ZF	TE-ML 02B	X [10]	—
• ZF	TE-ML 05A	X [10]	—
• ZF	TE-ML 12L	X [10]	—
• ZF	TE-ML 12M	X [10]	—
• ZF	TE-ML 16B	X [10]	—
• ZF	TE-ML 17H	X [10]	—
• ZF	TE-ML 19B	X [10]	—
• ZF	TE-ML 21A	X [10]	—

Performance

SAE Viscosity Grade		80W-90	80W-140
• API	GL-4	X	X
• API	GL-5	X	X
• API	MT-1	X	X
• Bosch	TE-ML 08	X [9]	X [9]
• DAF	Gearbox oil for Eaton gearboxes	X	—
• DAF	Gearbox oil for ZF Gearboxes	X[1]	
• DAF	Rear axle without hub reduction	X [3]	—
• DAF	Rear axle with hub reduction	X [4]	—
• MAN	3343 Type M	X [5]	—
• SAE	J2360	X	X
• ZF	TE-ML 05A	—	X
• ZF	TE-ML 07A	X [6]	X [6]
• ZF	TE-ML 12E	X [7]	—
• ZF	TE-ML 16D	—	X
• ZF	TE-ML 17B	X [8]	—
• ZF	TE-ML 21A	—	X

Suitable for use

SAE Viscosity Grade		80W-90	80W-140
• DAF	Driven front axle	—	X
• DAF	Front axle hubs	—	X [2]
• DAF	Rear axle without hub reduction	—	X [3]
• MAN	341 Type E2	X [11]	—
• Mercedes-Benz	MB 235.0	X	—

[1] ZF gearboxes without intarder, standard changing interval.
[2] Oil lubricated front hubs (some types require grease).
[3] Except for type 1355 low-deck (requires SAE 75W-90 fluid). Standard changing interval.
[4] Except for type 1356 (requires special product). Standard changing interval.
[5] Formerly approved. MAN 3343 Type M is now obsolete and was replaced by 341 Type E2 (now obsolete) and 341 Type Z2 (manual transmissions), and 342 M2 (axles and transfer cases).
[6] Products meeting the necessary performance requirements are approved for use by ZF, but there is no product listing.
[7] Formerly approved. ZF has moved this product from TE-ML 12E to a new class TE-ML 12M, which permits longer drain intervals.
[8] Formerly approved. In March 2017, ZF moved products of this type to a new class, TE-ML 17H.
[9] List formerly administered by ZF. Products meeting the necessary performance requirements are approved for use, but there is no product listing.
[10] ZF approval number: ZF002273.
[11] The product meets all of the requirements, but MAN made this specification obsolete at the end of 2016.
[12] MAN approval number: TUC 3418/97.
[13] Volvo approval number: 97321-016.
[14] Volvo approval number: 97321-017.

Typical test data

Test	Test Methods	Results	
Viscosity Grade		**SAE 80W-90**	**SAE 80W-140**
Shelf Life: 60 months from date of filling indicated on the product label°			
Viscosity, Kinematic, 100°C, mm^2/s	ASTM D445	14.0	25.7
Viscosity, Kinematic, 40°C, mm^2/s	ASTM D445	128	234
Viscosity, Brookfield, -26°C, mPa.s	ASTM D2983	60,000	93,000
Viscosity Index	ASTM D2270	108	141
Density, 15°C, kg/l	ASTM D4052	0.886	0.894
Flash Point COC, °C	ASTM D92	220	212
Pour Point, °C	ASTM D5950	-33	-41

°Typical Shelf Life: (a) if stored under normal conditions and (b) can be extended after re-testing

The typical test data set out above does not constitute a specification. It is indicative only and can be affected by allowable production tolerances. Chevron may modify this test data. Modified data will supersede all previous data, so please ensure you refer to the latest version of this Product Data Sheet (PDS).