



# Delo<sup>®</sup> TorqForce

Proven performance heavy-duty transmission and drive train fluids

Product Data Sheet



## Product description

Delo TorqForce products are proven performance heavy-duty transmission and drive train fluids formulated for use in transmissions, final drives, and hydraulic systems in Allison, Caterpillar, Dana Powershift, Komatsu, Komatsu Dresser, Tremec/TTC, Vickers and ZF equipment.

Delo TorqForce products are formulated with premium base oils combined with detergent and dispersant additives, oxidation and corrosion inhibitors, anti-wear, extreme pressure and foam suppression agents.

## Customer benefits

- Proven additive package helps protect metal surfaces against scuffing and wear under severe high temperature, high load conditions
- Reliable frictional control helps prevent clutch slippage and offers quiet, efficient transmission and brake operation while reducing wear
- High quality base stock formulation is designed to provide robust oxidation protection at high operating temperatures and help extend oil service life
- Formulated to keep metal parts clean and free from varnish and sludge deposits that can cause premature breakdown

## Applications

Delo TorqForce products are proven performance lubricants designed for use in transmissions, final drives, and hydraulic systems requiring a fluid meeting Caterpillar TO-4 or Allison C-4 requirements. They are also recommended for transmission and hydraulic systems manufactured by Dana Powershift, Komatsu, Komatsu Dresser, Tremec/TTC, Vickers and ZF

Delo TorqForce products are designed for both newly developed and older model drive train components

They offer robust friction retention, wear control, seal compatibility, oxidation stability, and viscosity stability

The frictional characteristics of the fluid are designed to be retained over the life of the lubricant

Delo TorqForce products are formulated to help protect against wear, even in severe service conditions and under high loads. They offer improved protection to precision

## Product features:

- Designed to provide severe high temperature, high load protection
- Promotes friction and wear control for quieter operation
- High quality helps extend oil service life
- Formulated for keep-clean component protection

Selected specification standards include:

- Allison
- Caterpillar
- Dana Powershift
- Eaton
- Komatsu
- Komatsu Dresser
- Meritor (Rockwell)
- Tremec/TTC
- Vickers
- Volvo
- ZF



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parts against wear under high load conditions by helping control the formation of corrosion, varnish, and sludge

Delo TorqForce products are compatible with new and traditional seal and clutch materials

In order to meet Caterpillar specifications, Delo TorqForce products are not friction modified. Therefore, they are not recommended for equipment made by other OEMs who require friction modified fluids in order to assure smooth and quiet brake operation. For these applications, use 1000 THF or Super Universal Tractor Oil Extra 10W-30. (Note too that the reverse is also true - friction-modified fluids like these should not be used in Caterpillar TO-4 applications)

Delo TorqForce SAE 10W may also be used as a substitute for Cat HYDO 10W in hydraulic system applications

The choice of viscosity grade will depend on ambient temperature conditions and operating severity. Viscosity grade recommendations are shown below:

SAE GRADE	10W		30		50	
	Min	Max	Min	Max	Min	Max
Outside temperature range, °C						
Hydraulic systems	-20	+40	-10	+50	-	-
Hydrostatic transmissions	-20	+40	-	-	-	-
Powershift transmissions	-20	+10	0	+35	+10	+50
Final drive/Differential/ Gearboxes (except for off-highway trucks)	-30	0	-20	+25	0	+50
Final drive (off-highway trucks)	-30	-10	-20	+15	0	+50

Note: Caterpillar's primary recommendation for final drives and axles in off-road service is their newer lubricant performance specification FD-1 - Delo TorqForce FD meets this specification. TO-4 type lubricants are still acceptable, although with a shorter drain interval.



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## Approvals, performance and suitable for use

<b>Approvals</b>	<b>10W</b>	<b>30</b>	<b>50</b>
• ZF TE-ML 03C	X <sup>[2]</sup>	X <sup>[3]</sup>	–
• ZF TE-ML 07F	–	X <sup>[3]</sup>	–
<b>Performance</b>	<b>10W</b>	<b>30</b>	<b>50</b>
• Allison C-4 X <sup>[5]</sup>	X	X	–
• Caterpillar TO-4[1]	X	X	X
• Volvo 97305-90	–	–	X
<b>Recommendations</b>	<b>10W</b>	<b>30</b>	<b>50</b>
• Dana Powershift	X	–	–
• Eaton Fuller Roadranger manual transmissions	–	–	X <sup>[4]</sup>
• Komatsu KES 07.868.1	X	X	X
• Komatsu Dresser	X	X	X
• Meritor (Rockwell) Manual transmissions	–	–	X <sup>[4]</sup>
• Tremec/TTC	X	–	–
• Vickers 35VQ25	X	–	–

<sup>[1]</sup> Caterpillar does not operate a formal approval system - each supplier is responsible for the performance of their own product.

<sup>[2]</sup> ZF registration number: ZF001904.

<sup>[3]</sup> ZF registration number: ZF001903.

<sup>[4]</sup> Standard drain applications.

continued

## Typical test data

DELO® TORQFORCE	TEST METHOD	RESULTS		
<b>Shelf Life: 60 months from date of filling indicated on the product label</b>				
<b>Viscosity Grade</b>		<b>10W</b>	<b>30</b>	<b>50</b>
<b>Density, 15°C, kg/L</b>	ASTM D4053	0.868	0.883	0.895
<b>Pour Point, °C</b>	ASTM D5950	-42	-27	-27
<b>Flash Point COC, °C</b>	ASTM D92	232	≥225	≥225
<b>Viscosity, Kinematic</b>				
40°C, mm <sup>2</sup> /s	ASTM D445	42	88	199
100°C, mm <sup>2</sup> /s	ASTM D445	6.7	10.9	18.5
<b>Viscosity Index</b>	ASTM D2270	117	110	103

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

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Environment, Health and Safety Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit [www.caltexoils.com](http://www.caltexoils.com).

**For more information, go to [www.chevronlubricants.com](http://www.chevronlubricants.com)**

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