



**Axles for construction machinery**

**List of lubricants TE-ML 05**

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The list of lubricants TE-ML 05, **edition 10.10.2024** 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).

**ZF Friedrichshafen AG**  
D-88038 Friedrichshafen  
[www.zf.com/contact](http://www.zf.com/contact)

## 1. Current products

Product groups	Series	Lubricant classes for service fills <sup>(1)</sup>
<b>Compactor</b>	MT-C 3035, MT-C 3065, MT-C 3075	<a href="#">ZF PowerFluid Gear LS</a> 05C / 05N
<b>Motor grader</b>	MT-G 3070, MT-G 3075, MT-G 3080, MT-G 3085, MT-G 3090, WH-L3065, WH-L3075	<a href="#">ZF PowerFluid Plus</a> 05E / 05F / 05G
<b>Dumper</b>	Axle/Wheel head: MT-D 3105	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05C / 05E / 05F / 05G / 05N
	Brake: MT-D 3105, WH-D 3105	<a href="#">ZF PowerFluid Plus</a> 05E / 05F / 05G
	Axle inserts	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05C / 05E / 05F / 05G / 05N
	MT-D 3085 II, MT-D 3095 II	<a href="#">ZF PowerFluid Plus</a> 05E / 05F / 05G
<b>Wheel loader</b>	MT-L 3065, MT-L 3075, MT-L 3085, MT-L 3095, MT-L 3105, MT-L 3110, MT-L 3115, MT-L 3125, MT-L 3135 AP-410, AP-412, AP-L 3085, AP-L 3095	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05C / 05E / 05F / 05G / 05N
<b>Backhoe loader</b>	Rear axle: MT-B 3065, MT-B 3070, MT-2075, MT-2085	<a href="#">ZF PowerFluid Plus</a> 05E / 05F / 05G
	Front axle: MS-B 3025, MS-2045, MS-B 3035	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05C / 05E / 05F / 05G / 05N
<b>Telescopic handler</b>	MS-T 3045, MS-T 3055, MS-T 3060	<a href="#">ZF PowerFluid Plus</a> 05E / 05F / 05G
<b>Compact loader</b>	AV230	<a href="#">ZF PowerFluid Gear LS</a> 05A / 05C / 05N
	MT-L 3010, MT-L 3015, MT-L 3020, MT-L 3025, MT-L 3045, MT-L 3055 MS-L 3015	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05C / 05E / 05F / 05G / 05N
	MT-L 3010, MT-L 3015, MT-L 3020, MT-L 3025, MT-L 3045, MT-L 3055	<a href="#">ZF PowerFluid Plus</a> 05E / 05F / 05G
<b>Compact loader with electric drive</b>	MT-L 3010, MT-L 3015, MT-L 3020, MT-L 3025, MT-L 3045, MT-L 3055	<a href="#">ZF PowerFluid Plus</a> 05E / 05F / 05G
<b>Mobile excavator</b>	MS-E 3050, MT-E 3050, MS-E 3060, MT-E 3060, MS-E 3070, MT-E 3070	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05C / 05E / 05F / 05G / 05N The TE-ML 07 must be observed for directly fitted HL transmissions.

**2. Products not listed in detail**

Product groups	Lubricant classes for service fills <sup>(1)</sup>	
	without	with
	wet multi-disc brakes and / or multi-disc limited-slip differentials	
Axles Differentials Axle inserts Wheel hubs	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05A / 05C / 05N 05E / 05F / 05G	<a href="#">ZF PowerFluid Gear LS</a> <a href="#">ZF PowerFluid Plus</a> 05C / 05E / 05F / 05G / 05N
Axles, differentials and axle inserts with hypoid drive	<a href="#">ZF PowerFluid Gear LS</a> 05A / 05C / 05N	<a href="#">ZF PowerFluid Gear LS</a> 05C / 05N

**Note:** APL 9000 see TE-ML 12

**3. Hydraulic fluids**

Product group	Lubricant classes for service fills <sup>(1)</sup>	Use at outside temperatures
Brake hydraulics, hydraulic differential lock (DHL) and steering	05L	- 40°C
	lubricants in accordance with JDM J20D	- 40°C
	05E / 05F (only lubricants in accordance with JDM J20C), 05G	- 30°C
	05K	- 30°C
	05M (ISO VG 32)	- 40°C
	05M (ISO VG 46)	- 10°C
	05M (ISO VG 68)	- 5°C

**4. Greasing points**

Product groups	Lubricating grease
Swivel bearing axles, motor grader: MT-G 3070, MT-G 3075, MT-G 3080, MT-G 3085, MT-G 3090	Total Aerogrease N 31089 Shell Aeroshell Grease 22 Lubricating interval acc. to corresponding lubricating and maintenance specifications
Other	Lithium saponified multipurpose grease of NLGI class 2 which is mixable with mineral oil (grease code KP2K-30 in acc. with DIN 51825 or ISO-L-XCCHB2 in accordance with ISO 6743-9). Lubricating interval acc. to corresponding lubricating and maintenance specifications.

**5. Oil change intervals**

**5.1 Initial oil change intervals**

Lubricant class	ZF filling ex works
Load class	Oil change intervals
1	2000 h <sup>(2)</sup>
2	1500 h <sup>(2)</sup>
3	1000 h <sup>(2)</sup>

**Note:** The original ZF factory fill is to remain in the axle for at least the first 500 operating hours; it is not recommended to change the oil earlier.

**5.2 Subsequent oil change intervals**

Lubricant class	05A	ZF PowerFluid Gear LS 05C / 05F / 05N	ZF PowerFluid Plus 05E / 05G
<b>Load class</b>	<b>Oil change intervals</b>		
<b>1</b>	1500 h	2000 h	4000 h
<b>2</b>	1000 h	1500 h	3000 h
<b>3</b>	500 h	1000 h	2000 h

**6. Load classes**

Load class	Examples of applications
<b>1</b>	- Mobile excavator with low driving-mode share (<25%) and equipment in material handling - Wheel loader and Dumper with low share of service brake use - Other axles without wet brakes
<b>2</b>	- Mobile excavator with increased driving-mode share (>25%) and equipment in timber handling - Wheel loader, grader, telescopic handler, Dumper - Backhoe loader under normal operating conditions - Compactors
<b>3</b>	- Wheel loader and Dumper operated under extreme braking conditions - Backhoe loader under extreme operating conditions - Generally all vehicles operated in outdoor temperatures > 40°C

**7. Explanation of footnotes and comments**

**Footnotes**

- (1) Refer to the following pages for approved commercial products.  
For information on oil change intervals, refer to Section 5.
- (2) The original ZF factory fill is to remain in the axle for at least the first 500 operating hours; it is not recommended to change the oil earlier.

**Comments**

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.

## 8. Lubricant classes and approved trade products

### Lubricant class 05A

Transmission oil

Viscosity grades: SAE 75W-90 / 75W-110 / 75W-140 / 80W-90 / 85W-90 / 90

#### Manufacturer (05A)

ADDINOL LUBE OIL GMBH, LEUNA/DE  
 ADDINOL LUBE OIL GMBH, LEUNA/DE  
 ADDINOL LUBE OIL GMBH, LEUNA/DE  
 ADDINOL LUBE OIL GMBH, LEUNA/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 BAHRAIN PETROLEUM COMPANY, AWALI/BH  
 BAHRAIN PETROLEUM COMPANY, AWALI/BH  
 BAHRAIN PETROLEUM COMPANY, AWALI/BH  
 BASF SE, LUDWIGSHAFEN/DE  
 BAYWA AG MÜNCHEN, MÜNCHEN/DE  
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR  
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR  
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR  
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR  
 BLASER SWISSSLUBE AG, HASLE-RÜEGSAU/CH  
 BLASER SWISSSLUBE AG, HASLE-RÜEGSAU/CH  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES  
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES  
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES  
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES  
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES  
 CHAMPION CHEMICALS N.V., HEMIKSEM/BE  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CLASS KGAA MBH, HARSEWINKEL/DE  
 CLASS KGAA MBH, HARSEWINKEL/DE  
 CONDAT LUBRIFIANTS, CHASSE SUR RHONE/FR  
 CYCLON HELLAS SA, ATHENS/GR  
 DE OLIEBRON BV, ZWIJNDRECHT/NL  
 DEUTSCHE ÖLWERKE LUBMIN, LUBMIN/DE  
 EKO ABEE, ATHENS/GR  
 ELLIS ENTERPRISES EAST D.O.O. KRUSEVAC, KRUŠEVAC/RS  
 ELLIS ENTERPRISES EAST D.O.O. KRUSEVAC, KRUŠEVAC/RS  
 ELLIS ENTERPRISES EAST D.O.O. KRUSEVAC, KRUŠEVAC/RS  
 ENI SUSTAINABLE MOBILITY S.P.A., ROME/IT  
 ENI SUSTAINABLE MOBILITY S.P.A., ROME/IT  
 ENI SUSTAINABLE MOBILITY S.P.A., ROME/IT  
 ENI SUSTAINABLE MOBILITY S.P.A., ROME/IT  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
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 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 FINKE MINERALÖLWERK GMBH, 27374 VISSELHÖVEDE/DE  
 FINKE MINERALÖLWERK GMBH, 27374 VISSELHÖVEDE/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
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 FUCHS PETROLUB SE, MANNHEIM/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 GEARWAY S5 75W-90  
 GEARWAY G5 80W-90  
 PENTOSIN GETRIEBEÖL O-226 80W-90  
 FUCHS TITAN CYTRAC TD SAE 75W-90  
 FUCHS AGRIFARM GEAR SAE 80W-90  
 PENTOSIN GEAR SAE 80W-90

#### Trade name (05A)

ADDINOL GETRIEBEÖL GX 80W-90 ML  
 ADDINOL GETRIEBEÖL GH 75 W 90 SL  
 ADDINOL GETRIEBEÖL GH 85 W 140  
 ADDINOL GETRIEBEÖL GX 80 W 90  
 AVISTA PEER EVO GL4/GL5 SAE 80W-90  
 AVISTA PEER EVO PRIME GL4/GL5 SAE 80W-90  
 SPAREX EP 90 GL-5  
 SPAREX EP 80W-90 GL-5  
 SPAREX EP 85W-140 GL-5  
 EMGARD HP 75W-90  
 TECTROL MULTIGEAR PLUS 8090  
 BELGIN LUBEX MITRAS AX SYN ULTRA 75W-90  
 BELGIN LUBEX MITRAS AX EP MD 80W-90  
 BELGIN LUBEX MITRAS AX EP PLUS 80W-90  
 BELGIN LUBEX MITRAS AX EP EXTRA 80W-90  
 EVOLCA SGP 75W90  
 EVOLCA BGP 80W90  
 CASTROL AXLE EPX 85W-140  
 CASTROL AXLE EPX 80W-90  
 CASTROL AXLE EPX 80W-90  
 CASTROL TRANSMAX AXLE LONG LIFE 75W-90  
 CASTROL TRANSMAX UNIVERSAL LL 80W-90  
 CASTROL TRANSMAX UNIVERSAL LL 75W-90  
 CASTROL TRANSMAX AXLE EPX 80W-90  
 CASTROL AXLE EPX 80W-90  
 CASTROL TRANSMAX AXLE LONG DRAIN 80W-90  
 CASTROL SAF-XO 75W-90  
 CEPSA TRANSMISIONES EP 80W-90  
 CEPSA TRANSMISIONES EP 85W-140  
 CEPSA TRANSMISIONES EP FE+LD 75W-90  
 MAN SUPER AXLE 3343 75W-90  
 MAN SUPER AXLE 342-M2  
 CHAMPION OEM SPECIFIC 75W90 GL 5  
 MULTIGEAR PREMIUM EP SAE 85W-140  
 MULTIGEAR EP-5 SAE 80W-90  
 DELO GEAR EP-5 SAE 85W-140  
 DELO GEAR TDL 80W-90  
 DELO SYN-GEAR XS 75W-140  
 DELO SYN-TDL 75W-90  
 DELO GEAR CGA SAE 80W-90  
 DELO GEAR EP-5 SAE 80W-90  
 AGRISHIFT MT 80W-90  
 AGRISHIFT MT 80W-90  
 GEAR TXS 75W90  
 GEAR EP GL-5 80W-90  
 TOR UNI GEAR LD 75W90  
 AVENO TDL ULTIMATE 75W-90  
 EKO GEAROL-5 80W-90  
 MULTIHIPO 75W-90 SINT  
 MULTIHIPO 80W-90 F PLUS  
 MULTIHIPO 80W-140 F PLUS  
 ENI ROTRA MP 80W-90  
 ENI ROTRA MP 85W-140  
 ENI ROTRA LSX 75W-90  
 ENI ROTRA MP 75W-90  
 MOBILUBE 1 SHC 75W-90  
 MOBILUBE HD-A PLUS 80W-90  
 MOBILUBE S 80W-90  
 MOBIL DELVAC 1 GEAR OIL 75W-90  
 MOBIL DELVAC 1 GEAR OIL 80W-140  
 MOBIL DELVAC ULTRA TOTAL DRIVELINE 75W-90  
 MOBIL DELVAC MODERN AXLE OIL 80W-90 V1  
 MOBIL DELVAC MODERN AXLE OIL 85W-140 V1  
 MOBIL DELVAC MODERN AXLE OIL 85W-140 V1  
 MOBIL DELVAC MODERN AXLE OIL 85W-140 V1  
 MOBIL DELVAC MODERN AXLE OIL 80W-90 V1  
 MOBIL DELVAC MODERN AXLE OIL 80W-90 HDA  
 AVIATICON FINKOGEAR PREMIUM 75W-90  
 AVIATICON FINKOGEAR SUPER 80W-90  
 FUCHS TITAN CYTRAC HSY SAE 75W-90  
 FUCHS TITAN GEAR HYP LD SAE 80W-90  
 FUCHS TITAN SUPERGEAR SAE 80W-90  
 FUCHS TITAN SUPERGEAR SAE 85W-140  
 FUCHS TITAN SUPERGEAR MC SAE 80W-90  
 FUCHS TITAN CYTRAC RR SAE 75W-90  
 GEARWAY S5 75W-90  
 GEARWAY G5 80W-90  
 PENTOSIN GETRIEBEÖL O-226 80W-90  
 FUCHS TITAN CYTRAC TD SAE 75W-90  
 FUCHS AGRIFARM GEAR SAE 80W-90  
 PENTOSIN GEAR SAE 80W-90

#### ZF approval number

ZF000672  
 ZF002260  
 ZF003561  
 ZF003620  
 ZF004780  
 ZF004797  
 ZF002316  
 ZF002317  
 ZF002318  
 ZF001716  
 ZF001160  
 ZF005978  
 ZF006035  
 ZF011935  
 ZF011981  
 ZF004734  
 ZF004735  
 ZF000910  
 ZF001320  
 ZF001754  
 ZF002142  
 ZF002143  
 ZF002144  
 ZF002163  
 ZF004752  
 ZF004885  
 ZF006097  
 ZF000084  
 ZF000085  
 ZF000086  
 ZF000965  
 ZF000966  
 ZF003554  
 ZF001196  
 ZF002137  
 ZF002254  
 ZF002273  
 ZF002274  
 ZF003353  
 ZF003442  
 ZF002270  
 ZF008203  
 ZF008233  
 ZF000829  
 ZF001604  
 ZF000964  
 ZF010792  
 ZF003351  
 ZF000653  
 ZF001456  
 ZF001749  
 ZF000855  
 ZF000856  
 ZF000860  
 ZF003364  
 ZF000041  
 ZF000042  
 ZF000776  
 ZF001681  
 ZF001682  
 ZF003699  
 ZF008180  
 ZF008179  
 ZF008309  
 ZF008310  
 ZF008311  
 ZF009835  
 ZF002249  
 ZF002299  
 ZF000642  
 ZF000645  
 ZF000647  
 ZF000650  
 ZF000722  
 ZF000732  
 ZF001030  
 ZF001036  
 ZF001195  
 ZF003341  
 ZF003624  
 ZF004809





**Manufacturer (05A)**

ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

**Trade name (05A)**

ZF ECOFLUID X SAE 80W-90

**ZF approval number**

ZF001266



**Lubricant class 05C**

Transmission oil with limited-slip-additives

Viscosity grades: SAE 75W-90 / 75W-110 / 75W-140 / 80W-90 / 85W-90 / 90

**Manufacturer (05C)**

ADDINOL LUBE OIL GMBH, LEUNA/DE  
 ADDINOL LUBE OIL GMBH, LEUNA/DE  
 AVIA AG, MÜNCHEN/DE  
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE  
 BAYWA AG MÜNCHEN, MÜNCHEN/DE  
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR  
 BLASER SWISSLUBE AG, HASLE-RÜEGSAU/CH  
 CASTROL LTD, LONDON/GB  
 CASTROL LTD, LONDON/GB  
 CEPESA COMERCIAL PETRÓLEO S.A.U., MADRID/ES  
 CHAMPION CHEMICALS N.V., HEMIKSEM/BE  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CHEVRON LUBRICANTS, SAN RAMON, CA/US  
 CLASS KGAA MBH, HARSEWINKEL/DE  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 FINKE MINERALÖLWERK GMBH, 27374 VISSELHÖVEDE/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 GEORG OEST MINERALÖLWERK GMBH & CO.KG, FREUDENSTADT/DE  
 GS CALTEX CORPORATION, SEOUL/KR  
 GULF OIL INTERNATIONAL, MUMBAI/IN  
 HINDUSTAN PETROLEUM CORPORATION LTD., MUMBAI/IN  
 HITACHI CONSTRUCTION MACHINERY EUROPE NV, AMSTERDAM/NL  
 HUILES BERLIET S.A., SAINT-PRIEST/FR  
 INA MAZIVA LTD., ZAGREB/HR  
 JOHN DEERE, MOLINE, ILLINOIS/US  
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL  
 LIEBHERR HYDRAULIKBAGGER GMBH, KIRCHDORF/DE  
 LIQUI MOLY GMBH, ULM/DE  
 MEGUIN GMBH & CO. KG, SAARLOUIS/DE  
 MOL-LUB KFT, ALMASFUZITO/HU  
 MORRIS LUBRICANTS, SHREWSBURY/GB  
 MOTOREX AG, LANGENTHAL/CH  
 MOTOREX AG, LANGENTHAL/CH  
 NILS SPA, BURGSTALL/IT  
 NORTHLAND PRODUCTS COMPANY, WATERLOO, IOWA/US  
 OILFINO MINERALÖL GMBH, PRISDORF/DE  
 ORLEN OIL SP. Z O.O., KRAKOW/PL  
 ORLEN OIL SP. Z O.O., KRAKOW/PL  
 ORLEN OIL SP. Z O.O., KRAKOW/PL  
 ORLEN S.A., GDANSK/PL  
 OY TEBOIL AB, HELSINKI/FI  
 PAKELO MOTOR OIL S.P.A. A S.U., SAN BONIFACIO (VR)/IT  
 PETROGAL S.A., LISBOA/PT  
 PETROL OFISI A.S., ISTANBUL/TR  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PHI OIL GMBH, ST. GEORGEN/AT  
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES  
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES  
 ROLF LUBRICANTS GMBH, LEVERKUSEN/DE  
 SASOL ENERGY, JOHANNESBURG/ZA  
 SAVITA OIL TECHNOLOGIES LIMITED, MUMBAI/IN  
 SENNEBOGEN MASCHINENFABRIK GMBH, STEINACH/DE  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN  
 SK ENMOVE CO.,LTD., SEOUL/KR  
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE  
 TALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TALENERGIES LUBRIFIANTS, NANTERRE/FR  
 UNIL OPAL, SAUMUR/FR  
 VALVOLINE EUROPE, DORDRECHT/NL  
 VALVOLINE EUROPE, DORDRECHT/NL  
 WILHELM HOYER B.V. & CO. KG, VISSSELHÖVEDE/DE  
 WOLF OIL CORPORATION N.V., HEMIKSEM/BE  
 ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

**Trade name (05C)**

ADDINOL GETRIEBEÖL GH 85W-90 LS  
 ADDINOL GETRIEBEÖL GH 80W-90 LS  
 AVIA HYPOID 90 LS  
 AVISTA PEER EVO GL5 LS SAE 90  
 TECTROL MULTIGEAR LS 90  
 BELGEAR LS 85W90  
 EVOLCA BGX 85W90  
 CASTROL TRANSMAX LIMITED SLIP LL 75W-140  
 CASTROL TRANSMAX LIMITED SLIP Z 85W-90  
 CEPESA AURIGA LS PLUS 80W-90  
 CHAMPION OEM SPECIFIC 80W90 LS GL 5  
 GEAR OIL ZF SAE 80W-90  
 GEARTEX LS 80W-90  
 GEARTEX LS 85W-90  
 CLAAS AGRISHIFT BLS 90  
 MOBILUBE LS 85W-90  
 MOBILUBE LS 85W-90  
 AVIATICON HYPOID LS 90  
 FUCHS TITAN GEAR LS SAE 90  
 OEST GETRIEBEÖL HYPOID LS 90  
 DOOSAN LS GEAR OIL 80W90  
 GULF GEAR LS 90  
 HP GEAR OIL ZFL 80W 90 LS  
 HITACHI GENUINE AXLE OIL ZX-W LS 80W-90  
 EP 90 GL  
 INA HIPENOL GTL LS 90  
 JOHN DEERE GL-5 GEAR LUBRICANT W/LS ADD 80W-90  
 Q8 T 45 LS SAE 90  
 LIEBHERR GEAR BASIC 90 LS  
 LIQUI MOLY HYPOID-GETRIEBEÖL PLUS GL 5 LS 85W-90  
 MEGOL HYPOID-GETRIEBEOEL AXLE LS SAE 85W-90  
 MOL HYKOMOL LS 85W90  
 TERRAIN LS 80W-90  
 MOTOREX YORK LS UNIVERSAL SAE 90  
 YORK 699 LS SAE 90  
 ALGOL HYPOID LS 90  
 POSI-GRIP JDZF 80W90  
 OILFINO VARIUS G 400LS 85W-90  
 PLATINUM GEAR LS 80W-90  
 PLATINUM AGRO LS 80W-90  
 ORLEN OIL GEAR LS 80W-90  
 LOTOS TITANIS LS GL-5 80W-90  
 TEBOIL HYPOID LS 80W-90  
 UNIVERSAL GEAR EP LS SAE 85W/90  
 GALP TRANSOIL HP LS 90  
 MAXIGEAR EP-X 85W-90LS  
 AMBRA AXF 80W-90 (SAE 80W-90)  
 AKCELA AXLEPOWER (SAE 80W-90)  
 TUTELA TRANSMISSION W90/LS (SAE 80W-90)  
 ARBOR TTF (SAE 80W-90)  
 PETRONAS AXLE 300 LS 80W-90  
 SUPERGEAR BRONZE 85W90 LS  
 REPSOL CARTAGO EP AUTOBLOCANTE SAE 80W90  
 REPSOL NAVIGATOR LSD 80W-90  
 ROLF TRANSMISSION M5 A-LS 80W-90  
 SASOL DIFFERENTIAL OIL LIMITED SLIP 80W-90  
 SAVSOL AUTOGEAR 90 LIMITED SLIP GL-5  
 SENLUBE GEAR HYPOID LS  
 SHELL SPIRAX S3 ALS 80W-90  
 SHELL SPIRAX S3 ALS 85W- 90  
 SINOPEC GREATWALL ZLS GL-5 85W/90  
 SK ZIC G-5 LSD 80W-90  
 SRS WIOLIN RSH  
 ELF TRACTELF BLS 80W-90  
 DYNATRANS DA 80W-90  
 DYNATRANS LS 80W-90  
 CLASS AGRISHIFT BLS 80W-90  
 GEAR AB-EP 85W90  
 VALVOLINE HEAVY DUTY AXLE OIL PRO 80W-90 LS  
 NESTE AXLE LS 80W-90  
 HOYER GEAR M-LS 90  
 WOLF OFFICIALTECH 80W90 LS GL 5  
 ZF POWERFLUID GEAR LS

**ZF approval number**

ZF000629  
 ZF000703  
 ZF003689  
 ZF004776  
 ZF001167  
 ZF002257  
 ZF004736  
 ZF002141  
 ZF002178  
 ZF001050  
 ZF003555  
 ZF000787  
 ZF000809  
 ZF000810  
 ZF001287  
 ZF000031  
 ZF011090  
 ZF002301  
 ZF000651  
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 ZF001341  
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 ZF000845  
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 ZF003625  
 ZF000700  
 ZF001898  
 ZF008345  
 ZF001303  
 ZF004813  
 ZF000127  
 ZF003340  
 ZF000442  
 ZF006120  
 ZF006121  
 ZF006122  
 ZF006121  
 ZF008173  
 ZF000526  
 ZF001996  
 ZF004847  
 ZF011994  
 ZF003552  
 ZF008414

**Lubricant class 05E**

Universal axle and transmission oil

**Manufacturer (05E)**

CNH INDUSTRIAL AMERICA LLC, RACINE, WI/US  
VIBRA ENERGIA S.A., DUQUE DE CAXIAS/BR

**Trade name (05E)**

PREMIUM TRANSAXLE OIL 80W-140  
LUBRAX UNITRACTOR 10W-30

**ZF approval number**

ZF005941  
ZF010660



**Manufacturer (05F)**

PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY  
 PHI OIL GMBH, ST. GEORGEN/AT  
 RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE  
 RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE  
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES  
 SAME DEUTZ FAHR, TREVIGLIO/IT  
 SAME DEUTZ FAHR, TREVIGLIO/IT  
 SASOL ENERGY, JOHANNESBURG/ZA  
 SASOL ENERGY, JOHANNESBURG/ZA  
 SAVITA OIL TECHNOLOGIES LIMITED, MUMBAI/IN  
 SENNEBOGEN MASCHINENFABRIK GMBH, STEINACH/DE  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB  
 SINENG PETROCHEMICAL CO.,LTD., LIUZHOU, GUANGXI/CN  
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN  
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN  
 SK ENMOVE CO.,LTD., SEOUL/KR  
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE  
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR  
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR  
 UNIL OPAL, SAUMUR/FR  
 UNIL OPAL, SAUMUR/FR  
 VALVOLINE EUROPE, DORDRECHT/NL  
 VALVOLINE EUROPE, DORDRECHT/NL  
 VIBRA ENERGIA S.A., DUQUE DE CAXIAS/BR  
 WILHELM HOYER B.V. & CO. KG, VISSELHÖVEDE/DE  
 WOLF OIL CORPORATION N.V., HEMIKSEM/BE  
 ZELLER+GMELIN GMBH&CO.KG, EISLINGEN/DE

**Trade name (05F)**

ARBOR MTF (SAE 10W-30)  
 AKCELA TRANSAXLE FLUID 80W-140 (SAE 80W-140)  
 AKCELA TRANSAXLE FLUID 20W-40 (SAE 20W-40)  
 AMBRA MULTI G (SAE 10W-30)  
 PETRONAS AKCELA NEXPLORE (SAE 10W-30)  
 PETRONAS TUTELA TRANSAXLE FLUID 20W-40  
 PETRONAS TUTELA TRANSAXLE FLUID 80W140  
 PETRONAS TUTELA TRANSAXLE FLUID 80W  
 PETRONAS TUTELA TRANSAXLE FLUID 20W-40  
 PETRONAS TUTELA TRANSAXLE FLUID 80W  
 GEAR OIL UTTO SILVER 10W-30  
 RAVENOL GETRIEBEOEL UTTO  
 RAVENOL UTTO SYNTHETIC  
 REPSOL ORION UTTO  
 SDF UTTO  
 DF UTTO  
 UNIVERSAL TRANSMISSION OIL 68  
 SASOL UNIVERSAL TRANSMISSION OIL RS 68  
 SAVSOL 315 HAT  
 SENLUBE GEAR LONGLIFE  
 SHELL SPIRAX S4 TXM  
 SHELL SPIRAX S4 TXM  
 SHELL SPIRAX S4 TXM  
 SHELL SPIRAX S6 TXME  
 SHELL SPIRAX S4 TXM  
 SHELL SPIRAX S4 TXM  
 SHELL SPIRAX S4 TXM  
 SHELL SPIRAX S4 TXM  
 SHELL SPIRAX S4 TXM-I  
 SEANON DEDICATED TRANSMISSION OIL 10W-30  
 SINOPEC GREATWALL UTTO  
 SINOPEC UTTO  
 SK ZIC GL-4 ZF 80W  
 SRS HYDROFLUID A  
 TOTAL DYNATRANS MPV  
 ELF TRACTELF BF 16  
 TOTAL DYNATRANS LS 20W-40  
 TOTAL DYNATRANS MPWB  
 TOTAL DYNATRANS MPX  
 TRACTELF NG  
 UNIL OPAL FLUID MVZ  
 FLUID G2 VARIO  
 UNITRAC 80W  
 NESTE GEAR UTTO  
 LUBRAX UNITRACTOR SAE 10W-30  
 HOYER AGRI M-UP  
 WOLF TRACTOFLUID 170 BM  
 DIVINOL HGB CVT

**ZF approval number**

ZF002093  
 ZF002139  
 ZF002152  
 ZF003443  
 ZF004830  
 ZF009459  
 ZF009460  
 ZF010231  
 ZF010264  
 ZF010000  
 ZF000958  
 ZF001718  
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 ZF003445  
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 ZF002222  
 ZF008262  
 ZF003565  
 ZF009470  
 ZF002041  
 ZF003473  
 ZF001366  
 ZF011996  
 ZF005951  
 ZF011927

**Lubricant class 05G**

Premium universal axle and transmission oil

**Manufacturer (05G)**

SINOPEC LUBRICANT CO., LTD., BEIJING/CN  
ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE  
ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

**Trade name (05G)**

SINOPEC GREATWALL HD DRIVE AXLE OIL  
ZF POWERFLUID C-PLUS  
ZF POWERFLUID PLUS

**ZF approval number**

ZF002162  
ZF002087  
ZF005995

**Lubricant class 05K**

Engine oil

Viscosity grades: SAE 10W, 10W-30, 10W-40

in accordance with Specification

API CD/CE/CF-4/CF/CG-4/CH-4/CI-4/CI-4 Plus/CJ-4

or SF/SG/SH/SJ/SL/SM

or ACEA, categories A, B, E

**Note:**

All trade products which satisfy the above specifications may be used. There will be no product listing.

**Lubricant class 05L**

Automatic Transmission Fluid (ATF) based on mineral base fluids according to former Dexron IID, IIIF, IIIG or IIIH specification by General Motors.

**Note:**

All trade products which satisfy the above specifications may be used. There will be no product listing.

**Lubricant class 05M**

Mineral oil-based hydraulic oil HLP in accordance with DIN 51524-2 or mineral oil-based hydraulic oil HVLP in accordance with DIN 51524-3.

Viscosity grades: ISO VG 32 / 46 / 68

**Note:**

All trade products which satisfy the above specifications may be used. There will be no product listing.

**In addition**, the following trade products may be used:

**Manufacturer (05M)**

PANOLIN DISTRIBUTION AG, MADETSWIL/CH  
PANOLIN DISTRIBUTION AG, MADETSWIL/CH  
PANOLIN DISTRIBUTION AG, MADETSWIL/CH  
SAVITA OIL TECHNOLOGIES LIMITED, MUMBAI/IN

**Trade name (05M)**

PANOLIN HLP SYNTH 32  
PANOLIN HLP SYNTH 46  
PANOLIN HLP SYNTH 68  
TATA HITACHI SUPREME P

**ZF approval number**

ZF008238  
ZF000592  
ZF002019  
ZF001707



**Lubricant class 05N**

Transmission oil with limited-slip-additives

Viscosity grades: SAE 75W-90 / 75W-110 / 75W-140 / 80W-90 / 85W-90 / 90

**Manufacturer (05N)**

BAYWA AG MÜNCHEN, MÜNCHEN/DE  
 CHAMPION CHEMICALS N.V., HEMIKSEM/BE  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 EXXONMOBIL CORPORATION, HOUSTON, TX/US  
 FINKE MINERALÖLWERK GMBH, 27374 VISSLHÖVEDE/DE  
 FUCHS PETROLUB SE, MANNHEIM/DE  
 KROON-OIL B.V., ALMELO/NL  
 MOTOREX AG, LANGENTHAL/CH  
 PAKELO MOTOR OIL S.P.A. A S.U., SAN BONIFACIO (VR)/IT  
 ROCK OIL, WARRINGTON/GB  
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE  
 TOTALENERGIES LUBRIFIANTS, NANTERRE/FR  
 WILHELM HOYER B.V. & CO. KG, VISSLHÖVEDE/DE  
 WOLF OIL CORPORATION N.V., HEMIKSEM/BE  
 ZELLER+GMELIN GMBH&CO.KG, EISLINGEN/DE

**Trade name (05N)**

TECTROL MULTIGEAR LS 90 LV  
 CHAMPION OEM SPECIFIC 80W-90 LS GL 5 ZF-N  
 MOBIL DELVAC MODERN AXLE OIL 80W-90 LIMITED SLIP  
 MOBIL DELVAC MODERN AXLE OIL 80W-90 LIMITED SLIP  
 AVIATICON HYPOID LS PLUS 80W-90  
 TITAN SUPERGEAR LS SAE 80W-90  
 GEARLUBE LS 80W-90  
 MOTOREX YORK LS UNIVERSAL SAE 80W/90  
 UNIVERSAL GEAR EP LS SAE 80W-90  
 SD LS 80W-90  
 SRS VIOLIN RSH PLUS 80W-90  
 DYNATRANS DAX 80W-90  
 HOYER GEAR M-LS+ 80W-90  
 WOLF OFFICIALTECH 80W-90 LS GL 5 ZF-N  
 DIVINOL MULTI-AXLE LS 80W90

**ZF approval number**

ZF009443  
 ZF011947  
 ZF009436  
 ZF010924  
 ZF011976  
 ZF008289  
 ZF009458  
 ZF011905  
 ZF010992  
 ZF010297  
 ZF009472  
 ZF009422  
 ZF011995  
 ZF011930  
 ZF010462