



Industrial Technology

Marine transmissions

List of lubricants TE-ML 04

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1. Approved lubricant classes

Product groups	Lubricant classes for service fills ⁽¹⁾
ZF 4 to ZF 115 with all derived variants M, A, IV, C, TS, ATS, IVTS	04D
ZF 220 to ZF 83700 with all derived variants A, V, IV, C, U, D, NR, NR2, NR2H, NR2B, TS, ATS, VTS, IVTS	04A / 04B / 04C
ZF 23560 to ZF 23860 with all derived variants NR, C, D	04B / 04C
ZF W220 to ZF W93100 with all derived variants C, NR, NC, DS, NR2H	04A / 04B / 04C
ZF W93300 and ZF W103100 with all derived variants	04E / 04F
BW 5 to BW 5300 with all derived variants	04A / 04B / 04C
BW 2356 to BW 2386	04B / 04C
HBW 35 to HBW 630 HSW 90 to HSW 110 HSW 125 to HSW 800 with all derived variants	04D
IRM 40 to IRM 50	04D
IRM 220 to IRM 350	04A / 04B / 04C
ZF SD 10, SD 12	04P
SeaRex 120s, 140s, 160s	Drive oil: 04A / 04B / 04C Hydraulic oil: 04K / 04R
ZF AT 400, 2000 to 8000 with all derived variants WM, RT, DM, SM ZF TT 400, 1000 to 8000 ZF SDT 2000 to 6000	Gearbox: 04H / 04M ⁽⁴⁾ Wet operating clutch: 04Q Power pack: 04K ⁽⁶⁾ / 04R ⁽⁷⁾ Planetary gearset ⁽⁵⁾ : 04H ^{(2), (3)}
ZF TT 4000 CP, 5000 CP	Gearbox and Power pack: 04H ^{(2), (3), (8)}
PPD, PPS	04G

The list of lubricants TE-ML 04, **edition 01.04.2019** 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.

ZF Friedrichshafen AG
D-88038 Friedrichshafen
www.zf.com/contact

2. Oil level check and change intervals

Please refer to ZF operating instructions for information on oil level check and oil filter change.
Please refer to ZF operating instructions and / or transmission type plate for information on oil change intervals.

3. Explanation of footnotes and comments

- (1) **Refer to the following pages for approved commercial products.**
- (2) For further information (approved greases, oil volumes) see "Lubricants equivalents list P0166 ZF Krimpen".
- (3) Oil condition monitoring
 - Oil condition must be checked on regular intervals by specialized laboratories. Intervals described in maintenance schedules.
 - When water contamination in the oil is reported to be above 0,5% it is recommended to change the oil as soon as possible, at latest within 2 months, and check the water contamination increase on a weekly basis.
 - When water contamination in the oil is reported to be above 3%, the oil must be changed immediately. It is highly advised to stop operation of the unit immediately, and contact service organization for remediate action.
 - The advice / report of the laboratory on both water as other contamination is leading!
 - ZF Marine Krimpen BV is in any case not responsible for damages caused by incorrect follow up of the interval checks and advices regarding water in oil or other contamination.
- (4) Oil change from standard oil to biodegradable oil
The following points must be taken into account:
 - Biodegradable oils are miscible with standard oils. Advice for applying biodegradable oils is that the system should be drained and flushed to ensure that the remaining standard oil content of the refilled system is less than 5 %. Mixture less than 5 % has to be confirmed by laboratory oil analysis.
 - All seals, especially propeller and steering pipe seals, in the thruster unit need to be replaced by new ones.
 - Replace lubricant filter.
 - Recommendation: install water separators on the thruster unit.
 - Take oil samples after 50 up to 100 running hours with the new oil.
- (5) Planetary gearsets valid for ambient temperatures of +5°C to +40°C when not connected to the main lubrication oil system.
- (6) Power pack - for units placed in machinery room or on deck running at standard ambient temperatures use lubricants according to lubricant class 04K.
- (7) Power pack - for units placed on deck running at ice-cold ambient temperatures use lubricants according to lubricant class 04R.
- (8) For CP tunnel thrusters the power pack, lower gearbox and header tank is one oil compartment, this means that the total system is working with ISO VG 100 lubricating oil.
Use of biodegradable oil in CP tunnel thrusters will be only possible if the power pack is specially prepared to be suitable for using biodegradable oil.

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. Greasing points

Multi-purpose grease according to the specification / requirement:

- DIN 51825 classification at least KP2K-20
and / or ISO 6743-9 classification at least ISO-L-XBCHB2
- Consistency class: NLGI 2
- Base oil: API Group 1 / 2 / 3 / 4
- Thickener type: lithium, lithium complex
- EP additives
- Temperature operation limits: min. -20°C to +120°C

5. Lubricant classes and approved trade products

Lubricant class 04A

Engine oil according to the specification / requirement:

- API CD/CE/CF-4/CF/CG-4/CH-4/CI-4/CI-4 Plus/CJ-4
and / or API SF/SG/SH/SJ/SL/SM
and / or ACEA categories A/B/E
- Viscosity grade: SAE 30 (also SAE 40 in hot-weather countries or at oil sump temperatures over +80°C)
- Base oil API Group 1 / 2 / 3 / 4

Note:

1. All trade products which satisfy the above specifications may be used. There will be no product listing.
2. For transmissions which are classified according to DNV, fluids of the class 04A may not be used. Instead of this fluids according to classes 04B or 04C may be used.

Lubricant class 04B

Engine oil

Viscosity grade: SAE 30 (also SAE 40 in hot-weather countries or at oil sump temperatures over +80°C)

Manufacturer (04B)

ADDINOL LUBE OIL GMBH, LEUNA/DE
 ADDINOL LUBE OIL GMBH, LEUNA/DE
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 GULF OIL INTERNATIONAL, MUMBAI/IN
 INA MAZIVA LTD., ZAGREB/HR
 INA MAZIVA LTD., ZAGREB/HR
 IPIRANGA PRODUTOS DE PETRÓLEO SA, RIO DE JANEIRO/BR
 IPIRANGA PRODUTOS DE PETRÓLEO SA, RIO DE JANEIRO/BR
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 OOO "PROIZVODSTVO ZAVOD IMENI SHAUMYANA", SAINT-PETERSBURG/RU
 PANOLIN AG, MADETSWIL/CH
 PETROBRAS DISTRIBUIDORA S.A., DUQUE DE CAXIAS/BR
 PETROBRAS DISTRIBUIDORA S.A., DUQUE DE CAXIAS/BR
 PETROBRAS DISTRIBUIDORA S.A., DUQUE DE CAXIAS/BR
 PETROBRAS DISTRIBUIDORA S.A., DUQUE DE CAXIAS/BR
 PETROBRAS DISTRIBUIDORA S.A., DUQUE DE CAXIAS/BR
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR

Trade name (04B)

ADDINOL TURBO DIESEL MD 305 SAE 30
 ADDINOL TURBO DIESEL MD 405 SAE 40
 URSA TRANS SAE 40
 MOBIL DELVAC 1630 SAE30
 MOBIL DELVAC 1640 SAE40
 FUCHS TITAN UNIVERSAL HD SAE 30 ZF
 FUCHS TITAN UNIVERSAL HD SAE 30
 FUCHS TITAN UNIVERSAL HD SAE 40
 GULF SUPER DUTY LE 30
 INA GORGONELA S 30
 INA SUPER 3 30
 IPIRANGA ULTRAGEAR 40
 IPIRANGA ULTRAGEAR ZF 40
 Q8 MOZART DP SAE 30
 Q8 MOZART DP SAE 40
 M-14D2CE (SAE 40)
 PANOLIN EXTRA DIESEL 30
 LUBRAX TURBO SAE 30
 LUBRAX TURBO SAE 40
 LUBRAX TRM 5 HD SAE 30
 LUBRAX TRM 5 HD SAE 40
 LUBRAX TRM 40
 SHELL RIMULA R3+ 30
 SHELL GADINIA S3 40
 SHELL GADINIA S3 30
 TOTAL CAPRANO TD 30
 TOTAL CAPRANO TD 40

ZF approval number

ZF000624
 ZF000625
 ZF000821
 ZF000036
 ZF000037
 ZF000719
 ZF001189
 ZF001190
 ZF001147
 ZF001173
 ZF001468
 ZF001340
 ZF002264
 ZF000095
 ZF000096
 ZF001095
 ZF000393
 ZF000581
 ZF000582
 ZF001174
 ZF001175
 ZF001742
 ZF001618
 ZF002201
 ZF002202
 ZF000533
 ZF000534

Lubricant class 04C

Engine oil

Viscosity grades: SAE 5W-40 / 10W-40 / 15W-40

Manufacturer (04C)

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
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 MTU FRIEDRICHSHAFEN GMBH, FRIEDRICHSHAFEN/DE
 OOO "LLK-INTERNATIONAL", MOSCOW/RU
 OOO "LLK-INTERNATIONAL", MOSCOW/RU
 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
 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
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR

Trade name (04C)

DELO 400 LE SAE 15W-40
 DELO 400 XLE SYNBLEND SAE 15W-40
 DELO 400 MGX SAE 15W-40
 DELO 400 MGX SAE 15W-40
 URSA ULTRA LE SAE 15W-40
 DELO 400 MGX SAE 15W-40
 MOBIL DELVAC XHP EXTRA 10W-40
 MOBIL DELVAC MX F2 15W-40
 MOBIL DELVAC MX F2 15W-40
 MOBIL DELVAC XHP LE 10W-40
 DIESEL ENGINE OIL SAE 15W-40
 LUKOIL AVANTGARDE PROFESSIONAL LS 10W-40
 LUKOIL AVANTGARDE PROFESSIONAL LS SAE 10W-40
 SHELL SIRIUS 15W-40
 SHELL RIMULA R3X 15W-40
 SHELL RIMULA R4 X 15W-40 (CI-4/E7/DH-1)
 SHELL SIRIUS 15W-40
 SHELL RIMULA R6 M 10W-40
 SHELL RIMULA R6 M 10W-40
 SHELL RIMULA R4 L 15W- 40
 SHELL ROTELLA T3 15W-40
 SHELL RIMULA R4 L 15W- 40
 ROTELLA T3 FLEET 15W- 40
 ROTELLA T4 TRIPLE PROTECTION 15W- 40 (CK-4)
 TOTAL CAPRANO TDI 15W-40
 TOTAL CAPRANO TDH 15W-40
 TOTAL CAPRANO TDI 15W-40

ZF approval number

ZF001847
 ZF002023
 ZF002252
 ZF002253
 ZF003349
 ZF003355
 ZF000770
 ZF003359
 ZF003360
 ZF003628
 ZF002002
 ZF001968
 ZF002114
 ZF000436
 ZF000437
 ZF001482
 ZF001484
 ZF001796
 ZF001799
 ZF002250
 ZF002251
 ZF002262
 ZF002266
 ZF003486
 ZF001256
 ZF001535
 ZF001791

Lubricant class 04D**Automatic Transmission Fluid (ATF)****Manufacturer (04D)**

ADDINOL LUBE OIL GMBH, LEUNA/DE
 ADDINOL LUBE OIL GMBH, LEUNA/DE
 ADDINOL LUBE OIL GMBH, LEUNA/DE
 ALEXANDRIA MINERAL OILS COMPANY, ALEXANDRIA/EG
 ALEXANDRIA MINERAL OILS COMPANY, ALEXANDRIA/EG
 ALLEGHENY PETROLEUM, WILMERDING, PA/US
 AMALIE PETROQUIMICA, MADRID/ES
 AMSOIL, INC., SUPERIOR, WI/US
 ARAL AG, BOCHUM/DE
 ARAL AG, BOCHUM/DE
 ARAL AG, BOCHUM/DE
 ASTRIS SA, GIORNICO/CH
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE
 BARDAHL ASIA PACIFIC PTE LTD, SINGAPORE/SG
 BASF SE, LUDWIGSHAFEN/DE
 BAYWA AG MÜNCHEN, MÜNCHEN/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
 BP PLC., LONDON/GB
 BP PLC., LONDON/GB
 BP PLC., LONDON/GB
 BP PLC., LONDON/GB
 BUCHER AG LANGENTHAL, LANGENTHAL/CH
 BUCHER AG LANGENTHAL, LANGENTHAL/CH
 BUCHER AG LANGENTHAL, LANGENTHAL/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
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES
 CEPSA COMERCIAL PETRÓLEO S.A.U., MADRID/ES
 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
 COMERCIAL ROSHFRANS, S.A. DE C.V., MEXICO, D.F./MX
 ENI S.P.A., ROME/IT
 ENI S.P.A., ROME/IT
 ENI S.P.A., ROME/IT
 EUROL B.V., NJIVERDAL/NL
 EXOL LUBRICANTS LTD, WEDNESBURY/GB
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FABRIKA MAZIVA FAM AD, KRŠEVAC/RS
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GRUPA LOTOS S.A., GDANSK/PL
 GRUPA LOTOS S.A., GDANSK/PL
 GRUPA LOTOS S.A., GDANSK/PL
 GRUPA LOTOS S.A., GDANSK/PL
 GULF OIL INTERNATIONAL, MUMBAI/IN
 GULF OIL INTERNATIONAL, MUMBAI/IN
 GULF OIL INTERNATIONAL, MUMBAI/IN
 H. BANTLEON GMBH / GESELLS. D. AVIA, ULM/DE
 HI-TEC OILS, SMITHFIELD/AU
 HILL CORPORATION, SHYMKENT/KZ

Trade name (04D)

ADDINOL ATF D II E
 ADDINOL ATF D II D
 ADDINOL ATF D III
 AMOC POWER
 AMOC POWER PLUS
 ALTRA SHL EXTENDED DRAIN ZF 20C
 ATF DEXRON II
 TORQUE-DRIVE SYNTHETIC ATF
 ARAL GETRIEBEÖL ATF LD
 ARAL GETRIEBEÖL ATF 55
 ARAL GETRIEBEÖL ATF 22
 ASTRIS ATF GLOBAL
 AVISTA SUPER FLUID TYP P/CN
 AVISTA SUPER FLUID ATF 3000
 PENNASOL SUPER FLUID ATF 3000
 PENNASOL SUPER FLUID TYP P/CN
 MOTOR GOLD FLUIDTEC TYP P/CN
 MOTOR GOLD FLUIDTEC ATF 3000
 SYNMAXTRAN-HD
 EMGARD 2805
 TECTROL ATF 4000
 TECTROL ATF 3000
 LUBEX ATF-II
 LUBEX ATF-III KYS
 LUBEX ATF-III KYS
 BP AUTRAN DX III
 BP AUTRAN LTF
 BP AUTRAN MBX
 BP AUTRAN SYN 295
 ATF SUPER
 ATF VZ
 ATF TP
 CASTROL TRANSMAX DEX III MULTIVEHICLE
 CASTROL TRANSMAX Z
 CASTROL ATF DEX II MULTIVEHICLE
 CASTROL TRANSYND
 CASTROL TRANSMAX ATF Z
 TES-295 SYN TRANSMISSION FLUID
 CASTROL TRANSMAX ATF DX II MULTIVEHICLE
 CASTROL TRANSMAX ATF DX III MULTIVEHICLE
 CEPSA ATF 3000 S
 CEPSA ATF 70
 CEPSA ATF 2000S
 HAVOLINE ATF MERCON V
 TEXAMATIC B
 SYNTHETIC AUTOMATIC TRANSMISSION FLUID HEAVY DUTY
 TEXAMATIC 4291
 DELO SYN ATF HD
 HAVOLINE MULTI-VEHICLE ATF
 ATF ALLPOWER MULTIVEHICULOS
 AGIP ATF II D
 ENI ROTRA ATF II E
 ENI ROTRA ATF MULTI
 EUROL ATF IIIF
 AUTOTRANS ELC
 MOBIL ATF 220
 MOBIL ATF D 21065
 MOBIL ATF SHC
 MOBIL ATF 320
 MOBIL ATF LT 71141
 MOBIL DELVAC SYNTHETIC ATF
 MOBIL DELVAC 1 ATF
 ATF DII
 STATOIL TRANSWAY PS DX III
 FUCHS TITAN ATF 5005
 FUCHS TITAN ATF 3000
 FUCHS TITAN ATF 4000
 PENTOSIN ATF 1
 PENTOSIN ATF IIIF
 TRANSWAY ATF ULTRA
 TRANSWAY ATF EXTRA
 FUCHS TITAN ATF 5500
 G-BOX ATF DXII
 G-BOX ATF DX III
 G-BOX ATF DX III
 LOTOS ATF II D
 LOTOS ATF SUPER III G
 LOTOS ATF II D
 LOTOS ATF IIIG
 GULF ATF DX III H
 GULF ATF DX II
 GULF ATF PC
 AVILUB FLUID ATZ 295
 MULTITRANS PLUS ATF
 FASTROIL ATF 3

ZF approval number

ZF000697
 ZF000698
 ZF000699
 ZF001702
 ZF001703
 ZF001756
 ZF001128
 ZF001841
 ZF000144
 ZF000146
 ZF000147
 ZF002187
 ZF002128
 ZF002129
 ZF002296
 ZF002297
 ZF002311
 ZF002312
 ZF002246
 ZF003370
 ZF001907
 ZF001908
 ZF001031
 ZF002255
 ZF002293
 ZF000194
 ZF000195
 ZF000196
 ZF000197
 ZF000593
 ZF003369
 ZF003609
 ZF000220
 ZF000221
 ZF000223
 ZF000226
 ZF002158
 ZF002298
 ZF003358
 ZF003368
 ZF000386
 ZF001939
 ZF002040
 ZF000101
 ZF001202
 ZF001219
 ZF001574
 ZF001664
 ZF001714
 ZF000385
 ZF000925
 ZF000951
 ZF003452
 ZF000387
 ZF001685
 ZF000033
 ZF000038
 ZF000039
 ZF000043
 ZF000044
 ZF001234
 ZF001827
 ZF001187
 ZF000487
 ZF000717
 ZF000720
 ZF000728
 ZF000734
 ZF000783
 ZF001330
 ZF001332
 ZF001797
 ZF001955
 ZF001956
 ZF002221
 ZF000362
 ZF000620
 ZF001043
 ZF001093
 ZF000078
 ZF001099
 ZF001349
 ZF002288
 ZF001669
 ZF003429

ZF approval number

HUILES BERLIET S.A., SAINT-PRIEST/FR	RTO STARMATIC 3	ZF001259
HUILES BERLIET S.A., SAINT-PRIEST/FR	RTO STARMATIC S3	ZF001579
IGOL FRANCE, AMIENS/FR	ATF 700	ZF001833
IGOL FRANCE, AMIENS/FR	IGOL ATF 430	ZF002315
INA MAZIVA LTD., ZAGREB/HR	INA ATF SUPER	ZF000248
INA MAZIVA LTD., ZAGREB/HR	INA ATF DX III	ZF000390
INA MAZIVA LTD., ZAGREB/HR	INA ATF DX IID	ZF000392
INA MAZIVA LTD., ZAGREB/HR	INA ATF EKSTRA	ZF000410
INA MAZIVA LTD., ZAGREB/HR	INA ATF DX IIH	ZF002314
INGRAX INDUSTRIA E COMERCIO DE GRAXA S/A, DUQUE DE CAXIAS/BR	UNIMATIC D-II PLUS	ZF000079
IPIRANGA PRODUTOS DE PETRÓLEO SA, RIO DE JANEIRO/BR	ISAMATIC V	ZF000896
KOCAK PETROL URUNLERI SAN.VE TIC.LTD.STI, KOCAELI/TR	SPEEDOL ATF DEXRON II	ZF000979
KOCAK PETROL URUNLERI SAN.VE TIC.LTD.STI, KOCAELI/TR	SPEEDOL ATF DEXRON S III	ZF001388
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL	Q8 AUTO 20	ZF000083
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL	Q8 AUTO 14	ZF000176
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL	Q8 AUTO 14	ZF001991
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL	Q8 AUTO 15 ED	ZF002121
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL	Q8 AUTO 15	ZF002269
LIEBHERR HYDRAULIKBAGGER GMBH, KIRCHDORF/DE	LIEBHERR HYDRAULIC-GEAR ATF	ZF002119
LIQUI MOLY GMBH, ULM/DE	LIQUI MOLY ATF DEXRON IID	ZF002052
LUBRICATING SPECIALTIES COMPANY, PICO RIVERA/US	MV TYPE 20C ATF	ZF002208
LUBRICATION ENGINEERS, INC., FORT WORTH, TEXAS/US	LE 1150	ZF001676
MEGUIN GMBH & CO. KG, SAARLOUIS/DE	MEGOL HYDRAULIKOEL ATF DEXRON II D	ZF001992
MOL-LUB KFT, ALMASFUZITO/HU	MOL ATF SYNT	ZF001155
MOL-LUB KFT, ALMASFUZITO/HU	MOL ATF 3G	ZF001179
MOL-LUB KFT, ALMASFUZITO/HU	MOL ATF	ZF001251
MOL-LUB KFT, ALMASFUZITO/HU	MOL ATF SYNT 3H	ZF001895
MORRIS LUBRICANTS, SHREWSBURY/GB	MULTITRANS ACV	ZF002268
MOTUL SA, AUBERVILLIERS/FR	MOTUL DEXRON III	ZF001008
MOTUL SA, AUBERVILLIERS/FR	MOTUL DEXRON II D	ZF001104
MOTUL SA, AUBERVILLIERS/FR	MOTUL ATF HD	ZF003587
OEL-BRACK AG, HUNZENSCHWIL/CH	MIDLAND OMNIMATIC	ZF003682
OILFINO MINERALÖL GMBH, PRISDORF/DE	OILFINO SPONTE ATF II	ZF000736
OILFINO MINERALÖL GMBH, PRISDORF/DE	OILFINO SPONTE ATF III	ZF000737
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF SYNTH HD	ZF001125
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF SYNTH MULTI	ZF001127
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF	ZF001146
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF SYNTH MN Z3	ZF001302
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF IID	ZF001759
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF III	ZF001760
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF SYNTH MULTI	ZF001944
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF SYNTH	ZF003407
OOO "LLK-INTERNATIONAL", MOSCOW/RU	LUKOIL ATF IIIG	ZF003430
ORLEN OIL SP. Z O.O., KRAKOW/PL	HIPOL ATF II D	ZF000081
ORLEN OIL SP. Z O.O., KRAKOW/PL	HIPOL ATF II E	ZF000501
OY TEBOIL AB, HELSINKI/FI	TEBOIL FLUID ES-MAX	ZF001726
OY TEBOIL AB, HELSINKI/FI	TEBOIL FLUID E	ZF003321
PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT	AUXON II E	ZF000048
PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT	DX FLUID II TS	ZF000376
PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT	ATF XT III FLUID	ZF001177
PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT	AUXON III PLUS	ZF001466
PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT	ATF XT III FLUID PLUS	ZF001748
PANOLIN AG, MADETSWIL/CH	PANOLIN ATF SUPER VTX	ZF001218
PETRO-CANADA LUBRICANTS INC., MISSISSAUGA, ONTARIO/CA	HEAVY DUTY SYNTHETIC BLEND ATF	ZF001236
PETROBRAS DISTRIBUIDORA S.A., DUQUE DE CAXIAS/BR	LUBRAX ATF HD	ZF002120
PETROGAL S.A., LISBOA/PT	GALP TRANSMATIC D II	ZF000331
PETROGAL S.A., LISBOA/PT	GALP TRANSMATIC D III	ZF001425
PETROGAL S.A., LISBOA/PT	GALP TRANSMATIC Z	ZF001893
PETROL OFISI A.S., ISTANBUL/TR	ATF DX-3	ZF001667
PETROMIN CORPORATION, JEDDAH/SA	PETROMIN ATF Z20 ECO	ZF001974
PETROMIN CORPORATION, JEDDAH/SA	PETROMIN ATF Z20 LD	ZF002003
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	TUTELA TRANSMISSION ATF 120	ZF000053
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	TUTELA TRANSMISSION GI/A	ZF000308
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	TUTELA TRANSMISSION STARFLUID	ZF000309
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	TUTELA TRANSMISSION GI/E	ZF000481
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	AKROS MATIC	ZF000485
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	ARBOR MTA	ZF000486
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	TUTELA TRANSMISSION STARFLUID HD-ED	ZF000992
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	TUTELA TRANSMISSION STARFLUID PS	ZF000993
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	TUTELA TRANSMISSION ATF 90	ZF001599
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	PETRONAS TUTELA ATF 700 HD	ZF003627
PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY	PETRONAS TUTELA ATF 500 HD	ZF003635
PHI OIL GMBH, ST. GEORGEN/AT	ATF D3 SILVER	ZF001003
PHI OIL GMBH, ST. GEORGEN/AT	ATF D3 GOLD	ZF003507
PRISTA OIL HOLDING EAD, RUSE/BG	PRISTA ATF	ZF000355
RALOY LUBRICANTES, S.A. DE C.V., SANTIAGO TIANGUISTEN/MX	TRANSFLUID SYNTHETIC M-5	ZF001025
RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE	RAVENOL DEXRON III H	ZF001609
REPSOL LUBRICANTES Y ESPECIALIDADES, S.A. MADRID/ES	REPSOL MATIC ATF	ZF000022
REPSOL LUBRICANTES Y ESPECIALIDADES, S.A. MADRID/ES	REPSOL MATIC ATF	ZF000222
REPSOL LUBRICANTES Y ESPECIALIDADES, S.A. MADRID/ES	REPSOL MATIC ATF	ZF000224
REPSOL LUBRICANTES Y ESPECIALIDADES, S.A. MADRID/ES	REPSOL MATIC III	ZF000318
REPSOL LUBRICANTES Y ESPECIALIDADES, S.A. MADRID/ES	REPSOL MATIC LD ATF	ZF001751
REPSOL LUBRICANTES Y ESPECIALIDADES, S.A. MADRID/ES	REPSOL MATIC SINTETICO	ZF003586
RN-LUBRICANTS, LLC, MOSCOW/RU	ROSNEFT KINETIC ATF IID	ZF003440
RN-LUBRICANTS, LLC, MOSCOW/RU	ROSNEFT KINETIC ATF III	ZF003671
ROLF LUBRICANTS GMBH, LEVERKUSEN/DE	ROLF ATF IID	ZF003371
ROLF LUBRICANTS GMBH, LEVERKUSEN/DE	ROLF ATF IIIG	ZF003372
ROWE MINERALÖLWERK GMBH, WORMS/DE	ROWE HIGHTEC ATF 9000	ZF001937
ROWE MINERALÖLWERK GMBH, WORMS/DE	ROWE HIGHTEC ATF 8000	ZF001938
SASOL OIL. RANDBURG/ZA	SYN TRANSMISSION OIL VI	ZF001091

Manufacturer (04D)

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
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SPECOL SP. Z O.O., CHORZOW/PL
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 TEDEX S.A., WARSZAWA/PL
 TEDEX S.A., WARSZAWA/PL
 TEDEX S.A., WARSZAWA/PL
 TEDEX S.A., WARSZAWA/PL
 TEXSA DO BRASIL LTDA, UMUARAMA/PR/BR
 TEXSA DO BRASIL LTDA, UMUARAMA/PR/BR
 TONGYI PETROLEUM CHEMICAL CO., LTD., BEIJING/CN
 TONGYI PETROLEUM CHEMICAL CO., LTD., BEIJING/CN
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 UNIL OPAL, SAUMUR/FR
 UNIL OPAL, SAUMUR/FR
 UNITED OIL COMPANY PTE LTD, SINGAPORE/SG
 UNIX AUTO, BUDAPEST/HU
 VALVOLINE AUSTRALIA PTY LTD, WETHERILL PARK, NSW/AU
 VALVOLINE EUROPE, DORDRECHT/NL
 VALVOLINE EUROPE, DORDRECHT/NL
 VALVOLINE EUROPE, DORDRECHT/NL
 YORK LUBRICANTS - GINOUVES SAS, LA GARDE/FR
 ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE
 ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

Trade name (04D)

SHELL SPIRAX S2 ATF AX
 SHELL SPIRAX S6 ATF VM PLUS
 SHELL SPIRAX S6 ATF VM
 SHELL SPIRAX S6 ATF ZM
 SPIRAX S4 ATF HDX
 SINOPEC GREATWALL ATF III LD
 SINOPEC GREATWALL FULLY SYNTHETIC ATF HD S
 SINOPEC GREATWALL ATF HD S
 SINOPEC GREATWALL SYNTHETIC ATF HD
 SINOPEC GREATWALL ATF HD
 HIPOSPEC ATF IID
 SRS WIOLIN ATF D
 SRS WIOLIN ATF III
 SRS WIOLIN ATF III MV
 TEDEX SYNTHETIC ATF
 TEDEX ATF III
 TEDEX ATF II D
 TEDEX ATF SYNTHETIC (S)
 TEXSA ATF SUPER
 MONTANA DYNAMIC ATF 2
 LINGXIAN 6+ AUTOMATIC TRANSMISSION FLUID
 LINGXIAN 10+ AUTOMATIC TRANSMISSION FLUID
 ELF ELFMATIC G3
 GULF ATF HIGH TECH
 TOTAL FLUIDE XLD FE
 TOTAL FLUIDMATIC SYN
 ELF ELFMATIC G3 SYN
 TOTAL FLUIDE G3
 TOTAL FLUIDE II D
 ELF ELFMATIC G3
 TOTAL FLUIDE II D
 TOTAL FLUIDE II D
 TOTAL FLUIDE II D
 FLUIDE AT 42
 MATIC DX III
 MATIC D
 UNITED MV 99
 A.Z.MEISTERTEILE AUTOMATIKGETRIEBEÖL ATF
 HEAVY DUTY ATF PRO ECO PLUS
 VALVOLINE HEAVY DUTY ATF PRO ECO
 VALVOLINE HEAVY DUTY ATF PRO LD
 VALVOLINE HEAVY DUTY ATF PRO
 YORK 787
 ZF-LIFEGUARDFLUID 5
 ZF ECOFLUID A LIFE

ZF approval number

ZF000374
 ZF001371
 ZF001463
 ZF001483
 ZF001812
 ZF001360
 ZF003345
 ZF003346
 ZF003347
 ZF003348
 ZF003354
 ZF000438
 ZF000439
 ZF002061
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 ZF003664
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 ZF001582
 ZF001663
 ZF001668
 ZF001699
 ZF001723
 ZF001724
 ZF001725
 ZF002100
 ZF001010
 ZF001071
 ZF003562
 ZF002192
 ZF003488
 ZF001871
 ZF001872
 ZF001873
 ZF000597
 ZF001363
 ZF001671

Lubricant class 04E

Engine oil according to the specification / requirement:

- API CD/CE/CF-4/CF/CG-4/CH-4/CI-4/CI-4 Plus/CJ-4
and / or API SF/SG/SH/SJ/SL/SM
and / or ACEA categories A/B/E
- Viscosity grade: SAE 50
- Base oil API Group 1 / 2 / 3 / 4

Note:

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

Lubricant class 04F

Lubricating oil CLP

Viscosity grade: ISO VG 220

Manufacturer (04F)

CASTROL LTD, LONDON/GB
CHEVRON LUBRICANTS, SAN RAMON, CA/US
EXXONMOBIL CORPORATION, HOUSTON, TX/US

Trade name (04F)

CASTROL ALPHASYN HG 220
MEROPA 220
MOBILGEAR 600 XP 220

ZF approval number

ZF001508
ZF000811
ZF000852

Lubricant class 04G

Gear oil according to the specification / requirement

- API GL-5
and / or MIL-L-2105D / MIL-PRF-2105E
and / or SAE J2360
- Viscosity grade: SAE 80W-90
- Base oil API Group 1 / 2 / 3 / 4

Note:

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

Lubricant class 04H

Lubricating oil CLP

Viscosity grade (product groups in accordance with page 1):

- ZF AT, TT, SDT - L-Drive variants - Gearbox: ISO VG 100
- ZF AT, TT, SDT - Z-Drive variants - Gearbox: ISO VG 150
- ZF AT, TT, SDT - Planetary gearset: ISO VG 100 / 150
- ZF TT 4000 CP, 5000 CP - Gearbox und Power pack: ISO VG 100

Manufacturer (04H)

AVIA AG, MÜNCHEN/DE
 AVIA AG, MÜNCHEN/DE
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 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
 ENI S.P.A., ROME/IT
 ENI 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
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 GULF OIL MARINE LTD., SINGAPORE/SG
 GULF OIL MARINE LTD., SINGAPORE/SG
 H. BANTLEON GMBH / GESELLS. D. AVIA, ULM/DE
 H. BANTLEON GMBH / GESELLS. D. AVIA, ULM/DE
 HINDUSTAN PETROLEUM CORPORATION LTD., MUMBAI/IN
 HINDUSTAN PETROLEUM CORPORATION LTD., MUMBAI/IN
 KLÜBER LUBRICATION, MUNICH/DE
 KLÜBER LUBRICATION, MUNICH/DE
 KLÜBER LUBRICATION, MUNICH/DE
 KLÜBER LUBRICATION, MUNICH/DE
 SCHAEFFER MFG., SAINT LOUIS MO/US
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE

Trade name (04H)

AVIA GEAR RSX 100
 AVIA GEAR RSX 150
 CASTROL ALPHASYN HG 150
 CASTROL ALPHASYN HG 100
 CASTROL ALPHA SP 100
 CASTROL ALPHA SP 150
 MEROPA 100
 MEROPA XL 100
 MEROPA 150
 MEROPA XL 150
 MEROPA SYNTHETIC EP 150
 ENI BLASIA FMP 150
 ENI BLASIA SX 100
 MOBILGEAR 600 XP 100
 MOBILGEAR 600 XP 150
 MOBIL SHC GEAR 150
 MOBILGEAR XMP 100
 MOBILGEAR XMP 150
 FUCHS RENOLIN CLP 100
 FUCHS RENOLIN CLP 150
 FUCHS RENOLIN UNISYN CLP 100
 FUCHS RENOLIN UNISYN CLP 150
 GULFSEA GEAR OIL 100
 GULFSEA GEAR OIL 150
 AVIA SYNTOGEAR PE 100
 AVIA SYNTOGEAR PE 150
 PARTHAN EP 100
 PARTHAN EP 150
 KLÜBEROIL GEM 1-100 N
 KLÜBEROIL GEM 1-150 N
 KLÜBERSYNTH GEM 4-100 N
 KLÜBERSYNTH GEM 4-150 N
 209AM MARINE MOLY UNIVERSAL GEAR LUBE ISO 150
 SHELL OMALA S2 GX 100
 SHELL OMALA S2 GX 150
 SHELL OMALA S4 GXV 150
 SRS ERSOLAN 100
 SRS ERSOLAN 150

ZF approval number

ZF003431
 ZF003476
 ZF002094
 ZF003449
 ZF003559
 ZF003560
 ZF003568
 ZF003569
 ZF003570
 ZF003571
 ZF003572
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 ZF003518
 ZF003493
 ZF003494
 ZF003706
 ZF003708
 ZF003474
 ZF003481
 ZF003482
 ZF003483
 ZF003591
 ZF003547
 ZF003548
 ZF003549
 ZF003462
 ZF003463

Lubricant class 04K

Hydraulic oil HLP

Viscosity grade (product groups in accordance with page 1):

- SeaRex: ISO VG 32 / 46

- ZF AT, TT, SDT - Power pack: ISO VG 46

Manufacturer (04K)

ARAL AG, BOCHUM/DE
 ARAL AG, BOCHUM/DE
 AVIA AG, MÜNCHEN/DE
 AVIA AG, MÜNCHEN/DE
 AVIA AG, MÜNCHEN/DE
 AVIA AG, MÜNCHEN/DE
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 ENI S.P.A., ROME/IT
 ENI S.P.A., ROME/IT
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 HINDUSTAN PETROLEUM CORPORATION LTD., MUMBAI/IN
 KLÜBER LUBRICATION, MUNICH/DE
 KLÜBER LUBRICATION, MUNICH/DE
 SCHAEFFER MFG., SAINT LOUIS MO/US
 SCHAEFFER MFG., SAINT LOUIS MO/US
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE

Trade name (04K)

ARAL VITAM GF 32
 ARAL VITAM GF 46
 AVIA FLUID RSL 32
 AVIA FLUID RSL 46
 AVIA FLUID ZAD 32
 AVIA FLUID ZAD 46
 RANDO HD 32
 RANDO HD 46
 CLARITY HYDRAULIC OIL AW 32
 CLARITY HYDRAULIC OIL AW 46
 ENI OSO 32
 ENI OSO 46
 MOBIL DTE 10 EXCEL 32
 MOBIL DTE 10 EXCEL 46
 ENKLO HLP 46
 LAMORA HLP 32
 LAMORA HLP 46
 112M MARINE HTC OIL ISO 32
 112M MARINE HTC OIL ISO 46
 SHELL TELLUS S2 MX 32
 SHELL TELLUS S2 MX 46
 SRS WIOLAN HS 32
 SRS WIOLAN HS 46
 SRS WIOLAN HX 46
 SRS WIOLAN HX 32

ZF approval number

ZF003614
 ZF003615
 ZF003422
 ZF003475
 ZF003477
 ZF003478
 ZF003573
 ZF003574
 ZF003577
 ZF003578
 ZF003425
 ZF003426
 ZF003541
 ZF003542
 ZF003707
 ZF003484
 ZF003485
 ZF003580
 ZF003581
 ZF003537
 ZF003540
 ZF003456
 ZF003457
 ZF003458
 ZF003459

Lubricant class 04M

Biodegradable oil

Viscosity grade (product groups in accordance with page 1):

- ZF AT, TT, SDT L-Drive variants - Gearbox: ISO VG 100
- ZF AT, TT, SDT Z-Drive variants - Gearbox: ISO VG 150

Note:

For use of biodegradable oils see footnotes and comments 3 and 4 page 2.

Manufacturer (04M)

CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 KLÜBER LUBRICATION, MUNICH/DE
 KLÜBER LUBRICATION, MUNICH/DE
 PANOLIN AG, MADETSWIL/CH
 PANOLIN AG, MADETSWIL/CH
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 VICKERS OILS, LEEDS/GB
 VICKERS OILS, LEEDS/GB

Trade name (04M)

CASTROL BIOSTAT 100
 CASTROL BIOSTAT 150
 MOBIL SHC AWARE GEAR 100
 MOBIL SHC AWARE GEAR 150
 KLÜBERBIO EG 2-100
 KLÜBERBIO EG 2-150
 PANOLIN EP GEAR SYNTH 100
 PANOLIN EP GEAR SYNTH 150
 SHELL NATURELLE S4 GEAR FLUID 100
 SHELL NATURELLE S4 GEAR FLUID 150
 BIOGEAR XP 100
 BIOGEAR XP 150

ZF approval number

ZF002122
 ZF002203
 ZF002281
 ZF002282
 ZF001732
 ZF001733
 ZF002000
 ZF002001
 ZF001792
 ZF001793
 ZF002204
 ZF002265

Lubricant class 04P

Engine oil according to the specification / requirement:

- API CD/CE/CF-4/CF/CG-4/CH-4/CI-4/CI-4 Plus/CJ-4
and / or API SF/SG/SH/SJ/SL/SM
and / or ACEA categories A/B/E
- Viscosity grade: SAE 15W-40
- Base oil API Group 1 / 2 / 3 / 4

Note:

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

Lubricant class 04Q

Lubricating oil

Viscosity grade (product groups in accordance with page 1):

- ZF AT, TT, SDT - Wet operating clutch: ISO VG 150

Manufacturer (04Q)

CASTROL LTD, LONDON/GB
KLÜBER LUBRICATION, MUNICH/DE
PANOLIN AG, MADETSWIL/CH
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB

Trade name (04Q)

CASTROL ALPHASYN HG 150
KLÜBERBIO EG 2-150
PANOLIN EP GEAR SYNTH 150
SHELL NATURELLE S4 GEAR FLUID 150

ZF approval number

ZF002094
ZF001733
ZF002001
ZF001793

Lubricant class 04R

Hydraulic oil HVLP

Viscosity grade (product groups in accordance with page 1):

- SeaRex: ISO VG 32 / 46

- ZF AT, TT, SDT - Power pack: ISO VG 46

Manufacturer (04R)

ARAL AG, BOCHUM/DE
 ARAL AG, BOCHUM/DE
 AVIA AG, MÜNCHEN/DE
 AVIA AG, MÜNCHEN/DE
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 CHEVRON LUBRICANTS, SAN RAMON, CA/US
 ENI S.P.A., ROME/IT
 ENI S.P.A., ROME/IT
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE

Trade name (04R)

ARAL VITAM HF 32
 ARAL VITAM HF 46
 AVIA FLUID HVI 32
 AVIA FLUID HVI 46
 RANDO HDZ 32
 RANDO HDZ 46
 ENI ARNICA 32
 ENI ARNICA 46
 MOBIL DTE 10 EXCEL 32
 MOBIL DTE 10 EXCEL 46
 FUCHS RENOLIN B 32 HVI
 FUCHS RENOLIN B 46 HVI
 FUCHS RENOLIN UNISYN OL 32
 FUCHS RENOLIN UNISYN OL 46
 SHELL TELLUS S2 VX 46
 SHELL TELLUS S2 VX 32
 SRS WIOLAN HV 32
 SRS WIOLAN HV 46

ZF approval number

ZF003616
 ZF003617
 ZF003479
 ZF003480
 ZF003575
 ZF003576
 ZF003427
 ZF003428
 ZF003541
 ZF003542
 ZF003506
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 ZF003543
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 ZF003460
 ZF003461