



Tractor axles, transmissions for harvesters and final drives

List of lubricants TE-ML 21

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1. Approved lubricant classes

Product groups	Lubricant classes ⁽¹⁾	
	First fill ⁽²⁾	Service fills ⁽³⁾
Axles APL-300, APL-700 AS-2000, AS-3000	21C	21C / 21F / 21G
TerraSteerAxle (TSA), TerraDriveAxle (TDA)	21C / 21F / 21G	21C / 21F / 21G
Kintra KC	21A / 21C / 21F / 21G	21A / 21C / 21F / 21G
Transmissions for harvesters 2MD40 3MD30, 3MD35, 3MD40	21A	21A
ZF-half-shafts (planetary final drives) for tractor transmissions Eccom, Terramatic, Terrapower, T-7000 and S-Matic	21A / 21C / 21G	21A / 21C / 21G
Final drives for harvesters S-800, S-950, S-1050, S-1250	21A	21A

The list of lubricants TE-ML 21, **edition 01.04.2018** replaces all previous editions. The current list can be requested from any ZF after-sales service center or accessed on the Internet under www.zf.com/lubricants.

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

2. Oil change intervals








2.1 Initial oil change interval

Lubricant classes	21A	21C	21F / 21G
Product groups	Initial oil change interval		
Axles APL, AS, TSA, TDA	-	1000 h	1000 h
Axles Kintra KC	100 h	100 h	100 h
Transmissions for harvesters	500 h	-	-
ZF-half-shafts	500 h	500 h	500 h
Final drives for harvesters	500 h	-	-

2.2 Subsequent oil change interval

Lubricant classes	21A	21C	21F / 21G
Product groups	Subsequent oil change interval		
Axles APL, AS, TSA, TDA	-	1000 h	1500 h
Axles Kintra KC	500 h	500 h	500 h
Transmissions for harvesters	1000 h	-	-
ZF-half-shafts	1000 h	1000 h	1000 h
Final drives for harvesters	1000 h	-	-

3. Hydraulic fluids

Product group	Lubricant classes for service fills ⁽¹⁾	Use at outside temperatures above
Brake hydraulics, hydraulic differential lock (DHL) and steering	21L	- 40°C 
	lubricants in accordance with JDM J20D	- 40°C 
	21F (only lubricants in accordance with JDM J20C), 21G	- 30°C 
	21K	- 30°C 
	21M (ISO VG 32)	- 40°C  + 20°C
	21M (ISO VG 46)	- 10°C 
	21M (ISO VG 68)	- 5°C 

4. Greasing points

Product groups	Lubricating grease
All	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. Explanation of footnotes and comments

Footnotes

- (1) **Refer to the following pages for approved commercial products.**
- (2) First filling: The lubricant classes listed are compulsory for initial fillings of transmissions as well as fillings during transmission break-in (under 1,000h).
- (3) Service filling: The lubricant classes listed are compulsory for service oil changes according to the oil-change intervals mentioned under Section 2.2.

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.

Lubricant class 21C

Gear oil with limited-slip-additives

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

Manufacturer (21C)

ADDINOL LUBE OIL GMBH, LEUNA/DE
 ADDINOL LUBE OIL GMBH, LEUNA/DE
 ARAL AG, BOCHUM/DE
 ARAL AG, BOCHUM/DE
 AVISTA OIL DEUTSCHLAND GMBH, UETZE/DE
 BAYWA AG MÜNCHEN, MÜNCHEN/DE
 BELGIN MADENI YAGLAR TIC. VE SAN. A.S., KOCAELI/TR
 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
 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
 CLASS KGAA MBH, HARSEWINKEL/DE
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FINKE MINERALÖLWERK GMBH, 27374 VISSSELHÖVEDE/DE
 FUCHS PETROLUB SE, MANNHEIM/DE
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GAZPROMNEFT-LUBRICANTS, MOSCOW/RU
 GEORG OEST MINERALÖLWERK GMBH & CO.KG, FREUDENSTADT/DE
 GRUPA LOTOS S.A., GDANSK/PL
 GRUPA LOTOS S.A., GDANSK/PL
 GS CALTEX CORPORATION, SEOUL/KR
 GULF OIL INTERNATIONAL, MUMBAI/IN
 HINDUSTAN PETROLEUM CORPORATION LTD., MUMBAI/IN
 INA MAZIVA LTD., ZAGREB/HR
 INDIAN OIL CORPORATION LTD, MUMBAI/IN
 INDIAN OIL CORPORATION LTD, MUMBAI/IN
 JOHN DEERE, MOLINE, ILLINOIS/US
 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
 MOL-LUB KFT, ALMASFUZITO/HU
 MORRIS LUBRICANTS, SHREWSBURY/GB
 NORTHLAND PRODUCTS COMPANY, WATERLOO, IOWA/US
 NORTHLAND PRODUCTS COMPANY, WATERLOO, IOWA/US
 NOVA STILMOIL SPA, MODENA/IT
 OILFINO MINERALÖL GMBH, PRISDORF/DE
 OOO "LLK-INTERNATIONAL", MOSCOW/RU
 OOO "LLK-INTERNATIONAL", MOSCOW/RU
 ORLEN OIL SP. Z O.O., KRAKOW/PL
 ORLEN OIL SP. Z O.O., KRAKOW/PL
 ORLEN OIL SP. Z O.O., KRAKOW/PL
 OY TEBOIL AB, HELSINKI/FI
 PAKELO MOTOR OIL, SAN BONIFACIO (VR)/IT
 PANOLIN AG, MADETSWIL/CH
 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
 PTT PUBLIC COMPANY LIMITED, BANGKOK/TH
 RAVENSBERGER SCHMIERSTOFFVERTRIEB GMBH, WERTHER/DE
 REPSOL LUBRICANTES Y ESPECIALIDADES, S.A, MADRID/ES
 RN-LUBRICANTS, LLC, MOSCOW/RU
 RN-LUBRICANTS, LLC, MOSCOW/RU
 SASOL OIL, RANDBURG/ZA
 SAVITA OIL TECHNOLOGIES LIMITED, MUMBAI/IN
 SAVITA OIL TECHNOLOGIES LIMITED, MUMBAI/IN
 SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SK LUBRICANTS, SEOUL/KR
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 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

Trade name (21C)

ADDINOL GETRIEBEÖL GH 85W-90 LS
 ADDINOL GETRIEBEÖL GH 80W-90 LS
 ARAL GETRIEBEÖL BS-LSX 75W-140
 ARAL GETRIEBEÖL HYP LS 85W-90
 PENNASOL LIMITED SLIP HYPOID GEAR OIL LS SAE 90
 TECTROL MULTIGEAR LS 90
 BELGEAR LS 85W90
 MOTOREX UNIVERSAL LS SAE 90
 CASTROL SYNTRAX LIMITED SLIP 75W-140
 CASTROL AXLE Z LIMITED SLIP 90
 CASTROL AXLE Z LIMITED SLIP 85W-90
 CASTROL TRANSMAX LIMITED SLIP LL 75W-140
 CASTROL TRANSMAX LIMITED SLIP Z 85W-90
 CEPSA AURIGA LS PLUS 80W-90
 GEAR OIL ZF SAE 80W-90
 GEARTEX LS 80W-90
 GEARTEX LS 85W-90
 GEARTEX LS SAE 85W-140
 DELO SYN-GEAR XS 75W-140
 CLAAS AGRISHIFT BLS 90
 MOBILUBE LS 85W-90
 GEARLUBE VS 500
 AVIATICON HYPOID LS 90
 FUCHS TITAN GEAR LS SAE 90
 G-TRUCK LS 80W-90
 G-TRUCK LS 85W-140
 G-TRUCK LS 85W-90
 OEST GETRIEBEÖL HYPOID LS 90
 LOTOS TITANIS LS GL-5 80W-90
 LOTOS TITANIS LS GL-5 SAE 85W-140
 DOOSAN LS GEAR OIL 80W90
 GULF GEAR LS 90
 HP GEAR OIL ZFL 80W 90 LS
 INA HIPENOL GTL LS 90
 SERVO GEAR SUPER LS 90
 SERVO GEAR SUPER LS 80W-90
 JOHN DEERE GL-5 GEAR LUBRICANT W/LS ADD 80W-90
 JOHN DEERE GL-5 GEAR LUBRICANT W/LS ADD 85W-140
 Q8 T 45 LS SAE 90
 LIEBHERR GEAR BASIC 90 LS
 LIQUI MOLY HYPOID-GETRIEBEÖL PLUS GL 5 LS 85W-90
 MEGOL HYPOID-GETRIEBEÖL AXLE LS SAE 85W-90
 MOL HYKOMOL LS 85W140
 MOL HYKOMOL LS 85W90
 TERRAIN LS 80W-90
 POSI-GRIP JDZF 80W90
 POSI-GRIP JDZF 85W140
 GEARING WONDER LS SAE 85W90
 OILFINO VARIUS G 400LS 85W-90
 LUKOIL TRANSMISSION LS TM-5 80W-90
 LUKOIL TRANSMISSION LS 85W-90
 PLATINUM GEAR LS 80W-90
 PLATINUM AGRO LS 80W-90
 PLATINUM GEAR LS 85W-140
 TEBOIL HYPOID LS 80W-90
 UNIVERSAL GEAR EP LS SAE 85W/90
 PANOLIN SUPER DUTY LS 90
 GALP TRANSOIL HP LS 90
 MAXIGEAR EP-X 85W-90LS
 AMBRA AXF 80W-90 (SAE 80W-90)
 AKCELA AXLEPOWER (SAE 80W-90)
 AKROS AXLEGEAR 80W-90 (SAE 80W-90)
 TUTELA TRANSMISSION W90/LS (SAE 80W-90)
 ARBOR TTF (SAE 80W-90)
 SUPERGEAR BRONZE 85W90 LS
 PTT LIMITED SLIP (SAE 80W-90)
 RAVENOL SPERRDIFF.-GETR.-OEL LS 90
 REPSOL CARTAGO EP AUTOBLOCANTE SAE 80W90
 TNK TRANS GIPOID LS 80W-90
 TNK TRANS GIPOID LS 85W-90
 SASOL DIFFERENTIAL OIL LIMITED SLIP 80W-90
 SAVSOL AUTOGEAR 85W140 LIMITED SLIP GL5
 SAVSOL AUTOGEAR 90 LIMITED SLIP GL-5
 SHELL SPIRAX S3 ALS 80W-90
 SINOPEC GREATWALL ZLS GL-5 85W/90
 SK ZIC G-5 LSD 80W-90
 SRS WIOLIN RSH
 TOTAL DYNATRANS DA 80W-90
 TOTAL DYNATRANS DA 85W-140
 TOTAL DYNATRANS LS 80W-90
 ELF TRACTELF BLS 80W-90
 GULF LS REAR AXLE 80W-90

ZF approval number

ZF000629
 ZF000703
 ZF000140
 ZF000465
 ZF000844
 ZF001167
 ZF002257
 ZF000727
 ZF000269
 ZF000307
 ZF002044
 ZF002141
 ZF002178
 ZF001050
 ZF000787
 ZF000809
 ZF000810
 ZF001686
 ZF002274
 ZF001287
 ZF000031
 ZF000851
 ZF002301
 ZF000651
 ZF000558
 ZF000561
 ZF000937
 ZF001479
 ZF000924
 ZF001135
 ZF001341
 ZF000891
 ZF001578
 ZF000424
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 ZF001312
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 ZF002109
 ZF000845
 ZF001367
 ZF001345
 ZF001075
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 ZF001637
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 ZF001497
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 ZF000603
 ZF001272
 ZF001459
 ZF003352
 ZF000027
 ZF000396
 ZF003410
 ZF001480
 ZF000546
 ZF000781
 ZF000782
 ZF000901
 ZF001373
 ZF001004
 ZF000013
 ZF001180
 ZF000981
 ZF000761
 ZF000791
 ZF000700
 ZF001857
 ZF001898
 ZF001303
 ZF000127
 ZF003340
 ZF000442
 ZF001255
 ZF001512
 ZF001545
 ZF001546
 ZF001548

Manufacturer (21C)

TOTAL LUBRIFIANTS S.A., NANTERRE/FR
UNIL OPAL, SAUMUR/FR
VALVOLINE CUMMINS PVT LIMITED, GURGAON/IN
VALVOLINE EUROPE, DORDRECHT/NL
YACCO SAS, ST PIERRE LES ELBEUF/FR

Trade name (21C)

TOTAL DYNATRANS DA 80W-90
GEAR AB-EP 85W90
GEAR DURA 80W90 LS
VALVOLINE HEAVY DUTY AXLE OIL PRO 80W-90 LS
BVX LS 200 80W-90

ZF approval number

ZF002309
ZF000526
ZF001465
ZF001996
ZF001614

Manufacturer (21F)

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
 SINOPEC LUBRICANT CO., LTD., BEIJING/CN
 SRS SCHMIERSTOFF VERTRIEB GMBH, SALZBERGEN/DE
 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
 VALVOLINE CUMMINS PVT LIMITED, GURGAON/IN
 VALVOLINE EUROPE, DORDRECHT/NL

Trade name (21F)

SHELL SPIRAX S4 TXM
 SHELL SPIRAX S4 TXM
 SHELL SPIRAX S4 TXM
 SHELL SPIRAX S6 TXME
 SHELL SPIRAX S4 TXM
 SHELL SPIRAX S4 TXM
 SINOPEC GREATWALL UTTO
 SRS HYDROFLUID N
 TOTAL DYNATRANS MPV
 ELF TRACTELF BF 16
 TOTAL DYNATRANS LS 20W-40
 TOTAL DYNATRANS MPWB
 TOTAL DYNATRANS MPX
 VALVOLINE UTF PREMIUM
 UNITRAC 80W

ZF approval number

ZF000357
 ZF000358
 ZF000359
 ZF001295
 ZF001613
 ZF003325
 ZF000105
 ZF000827
 ZF000540
 ZF001317
 ZF001346
 ZF001539
 ZF002222
 ZF002218
 ZF002041

Lubricant class 21G

Premium universal axle and transmission oil

Manufacturer (21G)

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

Trade name (21G)

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

ZF approval number

ZF002162
ZF001021
ZF002087

Lubricant class 21K

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 21L

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 21M

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 mineral oil-based gear oils which satisfy the above specifications may be used. There will be no product listing.