Innovative lubricants need experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.



FUCHS Automotive Lubricants

Reliability in Extremes



Contact:

Lubricants for Construction Companies

FUCHS LUBRICANTS (UK) PLC

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LUBRICANTS. TECHNOLOGY. PEOPLE.



FUCHS LUBRICANTS (UK) PLC

YOUR STRONG GLOBAL PARTNER FOR INDUSTRIAL LUBRICANTS



HOW WE EXCEL

We are a German company whose almost 600 employees manufacture and market a wide range of lubricants and derived specialities. The company, which was founded in 1931 by RUDOLF FUCHS, is located in Mannheim and is a 100 % subsidiary of FUCHS PETROLUB AG, which is the largest independent lubricant manufacturer worldwide.

Our company's degree of specialisation and innovation is way above the industrial average in this field. The full product line includes almost 2,000 lubricants and derived specialities for all walks of life, industrial processes and applications. Our customer's success is also our success. Because partnership to us means passing-on benefits. The advantage of a strong market presence: FUCHS is the largest independent manufacturer of lubricants in the world. The benefit of premium, innovative products from a full-line manufacturer: With a complete product line as well as tailor-made special solutions, FUCHS has a product for every application. The benefits of reliability: Certified according to DIN EN ISO 9001:2008 and ISO/TS 16949:2009, FUCHS has been continuously upgrading its highly specialised lubricants for decades.

And naturally, partnership for us also means providing our customers with competent support. With comprehensive marketing. With high-performance logistics. With the development of successful service concepts. And qualified consulting. Because together, we can achieve more.

WHAT INCREASES THE VALUE OF OUR PRODUCTS

We develop lubricants: application-specific and tailor-made for our customer's processes. Together we look for the best lubricants for our customers. This cooperation is unique in terms of its form, scope and intensity. We call it development partnership. The success of our development partnerships is based on an important fact: FUCHS is not one of the oil-giants.



FUCHS is a multinational, independent lubricant manufacturer. Our independence is the difference. We are open to new solutions, open for visions – the prerequisites for innovations. And innovation is the defining characteristic of FUCHS. 70 % of our products are less than five years old and the great majority of our products are individual solutions. Challenge us and see!

> LUBRICANTS. TECHNOLOGY. PEOPLE.



FUCHS Automotive Lubricants

Make sure of your success.

The leading factory-fill manufacturer in Germany.

Almost no one understands the technologies of engines, gearboxes and hydraulics better than FUCHS. Because as the world's largest independent lubricant manufacturer, we concentrate exclusively on lubricants. This has made us the leading factory-fill manufacturer for the German automotive industry. We can always recommend you the best product because we know the technical requirements. For all applications. All the time.

All lubricants for construction.

Whether grease for bearings in vehicles and machinery, or hydraulic oils for all sorts of applications or engine and gear oils for all the vehicles operating on construction sites or quarries – FUCHS is the single source for the best lubricant. Also lubricants, for example, which allow the rationalisation of oil grades if a mixed vehicle fleet is operated. Regardless of which FUCHS lubricant you choose: It will save you money – every single day.

Your advantage: lower operating costs.

Lubricants are by no means all the same: The high-performance lubricants from FUCHS offer you ultimate reliability at all temperatures, lower oil consumption, significantly lower fuel consumption and specifically extended service intervals. The advantages are tangible: Whenever engines and gearboxes run freer and more reliably, operating costs are lower if only because they consume less. And just 1 % lower fuel consumption means, depending on operating conditions, fuel savings of several hundred Pounds per vehicle and year.

Come and see for yourself!













FUCHS Automotive Lubricants

Our high performance product program for the most difficult applications.

Engine oils





TITAN CARGO MAXX

SAE 10W-40

Premium engine oil with the innovative XTL® developed for commercial vehicles. Offers material vehicles of the whole drain-interval due to oxidation and ageing stability. Guarantees of for modern diesel particulate filters and catal improved durability. Oil consumption and tur are significantly reduced. This new technology performance over the entire temperature rangood cold start properties even at very low technology.

Premium engine oil with the innovative XTL® developed for commercial vehicles. Offers material vehicles offers material and ageing stability. Guarantees of for modern diesel particulate filters and catal improved durability. Oil consumption and tur are significantly reduced. This new technology performance over the entire temperature rangood cold start properties even at very low technology of the start properties even at very low technology of techn

TITAN CARGO EU6 SAE 5W-30

Ultra High Performance, based on the latest a which is especially developed for use in mode engines. Low ash engine oil that provides exc with modern exhaust after treatment system filters, exhaust gas recirculation systems and and ensures their function throughout the lif This ensures that statutory exhaust emission sustainably. Excellent anti-wear properties an piston cleanliness. Backward-compatable wit MB 228.31/ MAN M 3477 (only for fuel qual sulfur). Can be used in Euro 6 engines from n

TITAN CARGO SL SAE 5W-30 Ultra High Performance, extreme fuel-econor of commercial vehicle diesel engines, formula synthetic base oils. Specially developed for ex intervals. Optimum cold starting and lower oi

TITAN CARGO SAE 15W-40 Ultra High Performance, fuel economy oil for commercial vehicle diesel engines. Specially of Volvo with extended service intervals, exhaus and turbocharger.



	Specifications/ Approvals	FUCHS recommendations
®-Technology naximum fuel to outstanding optimum protection alysts and provides urbocharger deposits ogy offers maximum ange and ensures temperatures.	ACEA E6 MAN M 3477 MB-APPROVAL 228.51 DEUTZ DQC IV-10 LA MACK EO-N MTU DDC TYPE 3.1 RENAULT RXD/RLD2 VOLVO VDS3	ACEA E7
®-Technology maximum fuel to outstanding optimum protection alysts and provides urbocharger deposits ogy offers maximum ange and ensures temperatures.	ACEA E9/E7/E6 API CI-4 CATERPILLAR ECF-1-a JASO DH-2 DEUTZ DQC IV-10 LA MACK EO-M PLUS MACK EO-N MAN M 3477 / M3271-1 MB-APPROVAL22851/23528 MTU DDC TYPE 3.1 RENAULT RXD/RGD/RLD-2 SCANIA LA VOITH-RETARDER "B" VOLVO VDS-3 / CNG	CUMMINS CES 20077 DAF MAN M 3277 CRT
t additive technology, dern heavy duty xcellent compatibility ms such as particulate d catalytic converters lifetime of the vehicle. n limits are met and shows excellent vith MB 228.5/ alities less 50ppm many manufacturers.	ACEA E9/E7/E6 API CJ-4 CAT ECF-3 JASO DH-2 CUMMINS CES 20081 DEUTZ DQC IV-10 LA MACK E0-0 PREMIUM PLUS MAN M 3677 MB-APPROVAL 228.51 MTU TYPE 3.1 RENAULT RLD-3 VOLVO VDS-4	DETROIT DIESEL DDC 93K218 MAN M 3271-1
omy oil for a variety ulated with fully- extended service oil consumption.	ACEA E7/E4 CUMMINS CES 20077 DEUTZ DQC IV-10 MACK EO-N MAN M 3277 MB-APPROVAL 228.5 MTU DDC TYPE-3 RENAULT RXD/RLD-2 VOLVO VDS-3	DAF IVECO 18-1804 TFE SCANIA LDF-2
or a variety of / developed for ust after treatment	ACEA E9/E7 API CJ-4/CI-4 PLUS/CI-4 CAT ECF-2/ECF-3 CUMMINS CES 20081 DETROIT DIESEL DDC 93K218 DEUTZ DQIII-10LA FAWDE Q/XC 3135-2007 MACK E0-O PREMIUM PLUS MAN M 3575 / 3275-1 MB-APPROVAL 228.31 MTU DDC TYPE 2.1 VOLVO VDS-4 RENAULT RLD-3	ALLISON C-4

Titan

Our high performance product program for the most difficult applications.



Engine oils

		Specifications/ Approvals	FUCHS recommendations			
FITAN CARGO SAE 10W-30	Ultra High Performance, revolutionary diesel engine oil designed for commercial vehicles. A new base oil matrix with very high oxidation stability provides the highest levels of performance regarding engine durability in highly stressed commercial vehicle engines. Developed for compliance with the current and future American emission legislation (EPA). Particularly advantageous in vehicles fitted with exhaust gas treatment systems such as Diesel Particulate Filter (DPF), Diesel Oxidation Catalyst (DOC), high rate of Exhaust Gas Recirculation (EGR), two stage turbo charging and SCR-catalyst (Selective Catalyst Reduction) or any combination of the given technologies.	ACEA E9 API CJ-4 CAT ECF1-a/ECF-2/ECF-3 DEUTZ DQC III-10 LA MACK EO-0 PREMIUM PLUS MAN M 3575 MB-APPROVAL 228.31 RENAULT RLD-3 VOLVO VDS-4	CUMMINS 20081 MTU DDC TYPE 2.1		AN TRUCK E 15W-40	Super High Performance oil for a variety of dies Specially for highly-loaded commercial vehicle Lower oil consumption.
ITAN CARGO LD3 AE 10W-40	Ultra High Performance fuel economy engine oil for Scania Euro 6 vehicles. Specially developed for extended service intervals. Also suitable for Euro 4 and Euro 5 engines without diesel particulate filters. The SAE Class 10W-40 ensures reliable all-season use. Suitable for the longest oil change intervals.	ACEA E7/E4 API CF MAN M 3277 MB-APPROVAL 228.5 SCANIA LDF-3			AN UNIVERSAL HD E 15W-40	High Performance oil for mixed fleets operated conditions. Good performance in normally asp turbocharged diesel engines.
FITAN CARGO MC SAE 10W-40	Ultra High Performance, fuel economy oil based on MC-synthesis for a variety of commercial vehicle diesel engines. Specially developed for extended service intervals. Good cold starting and lower oil consumption.	ACEA E7/E4 API CI-4 CUMMINS CES 20077/8 DEUTZ DQC III-10 MACK EO-M PLUS MAN M 3277 MB-APPROVAL 228.5 MTU DDC TYPE-3 RENAULT RXD/RLD-2 VOLVO VDS-3 SCANIA LDF-2	DAF IVECO 18-1804 SDFG OM-1901A			
TITAN UNIMAX PLUS MC SAE 10W-40	Ultra High Performance, fuel-economy oil based on MC-synthesis for all commercial vehicles, off-highway equipment and passenger cars. Substantial rationalisation opportunities for mixed fleets. Prolongation of drain intervals possible with some manufacturers. Good cold starting and lower oil consumption.	ACEA E7/B3/A3 API CH-4 CUMMINS CES 20077 DEUTZ DQC II-10 MAN M 3275-1 MB-APPROVAL 228.3 MB-APPROVAL 229.1 RENAULT RD / RD-2 VOLVO VDS-2 MB-APPROVAL 235.27 MTU DDC TYPE-2 VOITH RETARDER 'A'	ALLISON C-4 CUMMINS CES 20071/2/6 DAF MACK EO-M PLUS SCANIA	ТІТ	Gear oils An supergear MC E 80W-90	for mixed fleets Super High Performance gear oil based on MC- extended oil change intervals.
TITAN UNIMAX ULTRA MC SAE 10W-40	Premium Motor Oil based on MC-synthesis for all commercial vehicles, off-highway equipment and passenger cars. Substantial rationalisation opportunities for mixed fleets. Prolongation of drain intervals possible with many manufacturers. Good cold starting and lower oil consumption.	ACEA E7/B4/B3/A3 API CI-4 GLOBAL DHD-1 JASO DH-1 CUMMINS CES 20077/8 DEUTZ DQC III-10 MACK E0-M PLUS MAN M 3275-1 MB-APPROVAL 228.3 MB-APPROVAL 229.1 MTU DDC TYPE-2 RENAULT RLD / RLD-2 VOLVO VDS-3	ALLISON C-4 CUMMINS CES 20071/2/6 DAF VW 500 00/501 01 / 505 00 CAT ECF-2	SA 	AN SUPERGEAR MC E 80W-140 AN GEAR LS E 90	Super High Performance gear oil based on MC- extended oil change intervals. High Performance LS (Limited Slip) hypoid gear commercial vehicles and passenger cars with or slip differentials.
		DETROIT DIESEL DDC 93K215 MB-APPROVAL 235.27 VOITH RETARDER 'A'				

TITAN TRUCK PLUS SAE 15W-40

Super High Performance oil for a variety of di engines. Specially for highly-loaded commerce engines. Lower oil consumption.



	Specifications/ Approvals	FUCHS recommendations
or a variety of diesel and gasoline baded commercial vehicle diesel on.	ACEA E7, API CI-4/SL GLOBAL DHD-1 CAT ECF-1-a/ECF-2 CUMMINS CES 20076/7/8 DEUTZ DQC III-10 MACK EO-N MAN M 3275-1 MB-APPROVAL 228.3 MTU DDC TYPE-2 RENAULT RLD / RLD-2 VOLVO VDS-3	ACEA A3/B4 ALLISON C-4 CAT TO-2 CASE MS 1121 CUMMINS CES 20071/2 DAF IVECO 18-1804 CLASSE T2 E7 NH 330 H STEYR A-201
or a variety of diesel engines. mmercial vehicle diesel engines.	ACEA E7 API CH-4/SL GLOBAL DHD-1 CUMMINS 20076/7 DEUTZ DQC II-10 MACK EO-N MAN M 3275-1 MB-APPROVAL 228.3 MTU DDC TYPE-2 RENAULT RD/RD-2 VOLVO VDS-2	ACEA A3/B4 DAF SCANIA CAT ECF-1-a
ed fleets operated under normal e in normally aspirated and	ACEA A3/B3/B4 API CG-4/CF/SL DEUTZ DQC I-02 MAN 271 MB-APPROVAL 228.1 MB-APPROVAL 229.1 MTU DDC TYPE-2	ACEA E2 MIL-L-2104 E ALLISON C-4 CASE MS 1120 DAF MACK EO-L NH 330 G SCANIA STEYR A-202 VOLVO VDS VW 501 01/505 00



	Specifications/ Approvals	FUCHS recommendations
MC-synthesis for	API GL-4/GL-5 SCANIA STO 1:0 MAN 341 TYPE E2 MAN 341 TYPE Z2 MAN 342 TYPE M2, MB-APPROVAL 235.0 ZF TE-ML 02B, 05A, 12L, 12M, 16B, 17B, 19B, 21A	CASE MS 1316 FORD M2C197-A JOHN DEERE JDM J 11 E MAN M3343 TYPE M NH 520 A SDFG OP 1705 STEYR B-101 ZF TE-ML 07, 08
MC-synthesis for	API GL-4/GL-5 SCANIA STO 1:0	JOHN DEERE JDM J 11 E OPEL 19 42 386 RENAULT VI ZF TE-ML 08
gear oil for axles in th or without limited	API GL-5 ZF TE-ML 05C, 12C, 16E, 21C	MIL-L-2105 D FORD M2C104-A JOHN DEERE JDM J 11 F LIEBHERR NH 520 B

Our high performance product program for the most difficult applications.



Gear oils for mixed fleets

		Specifications/ Approvals	FUCHS recommendations
TITAN GEAR MP SAE 80	High Performance gear oil for synchronised and non-synchronised manual gearboxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.	API GL-4 MAN 341 TYPE E1 MAN 341 TYPE Z2 MB-APPROVAL 235.1 ZF TE-ML 02B, 17A	BMW 81 22 9 407 052 BMW 81 22 9 407 053 EATON FORD M2C9008-A VW TL 726 ZF TE-ML 08
TITAN GEAR HYP SAE 90	High Performance gear oil for highly-stressed differentials in commercial vehicles and passenger cars.	API GL-5 MAN 342 TYPE M1 MB-APPROVAL 235.0 ZF TE-ML, 16C, 17B, 19B, 21A	FORD M2C9102-A JOHN DEERE JDM J 11 E OPEL 19 42 387 VW TL 727 ZF TE-ML 07, 08

Automatic transmission fluids (ATF)

ications/ vals	FUCHS recommendations			Specifications/ Approvals	FUCHS recommendations
1 TYPE E1 1 TYPE Z2 ROVAL 235.1 .02B, 17A 2 TYPE M1 ROVAL 235.0 ., 16C, 17B, 19B,	BMW 81 22 9 407 052 BMW 81 22 9 407 053 EATON FORD M2C9008-A VW TL 726 ZF TE-ML 08 FORD M2C9102-A JOHN DEERE JDM J 11 E OPEL 19 42 387 VW TL 727 ZF TE-ML 07, 08	TITAN ATF 5005	Premium ATF for automatic transmissions in motor vehicles. Outstanding base oil quality for optimal cold temperature properties and high ageing stability. Durable friction properties for excellent wet clutch performance.	MAN 339 TYPE V2 MAN 339 TYPE Z2 MB-APPROVAL 236.6 VOITH H55.6336.3X (G 1363) ZF TE-ML 04D, 14B, 16L, 17C	DEXRON III (H) ALLISON TES 295 ALLISON TES 295 BMW 81 22 9 400 272 BMW 81 22 9 400 275 BMW 83 22 0 403 248 BMW 83 22 9 407 738 BMW 83 22 9 407 859 FORD MERCON V MAN 339 TYPE Z3 OPEL 19 40 707 VOLVO 97341 VW TL 521 62 (G 052 ZF TE-ML 02F, 11B, 140
ations/ als 6: 75W-80	FUCHS recommendations ALLISON C-4 CASE MS 1207/1209/1210 FORD M2C86-C	TITAN ATF 4000	Ultra High Performance ATF for use in automatic transmissions as well as other ATF applications. Licensed according to DEXRON III (H). Improved low-temperature shifting compared to DEXRON II.	ALLISON C-4 ALLISON TES 389 DEXRON III (H) MAN 339 TYPE V1 MAN 339 TYPE Z1 MB-APPROVAL 236.1 MB-APPROVAL 236.9 VOITH H55.6335.3X VOLVO 97341 ZF TE-ML 04D, 14A, 17C	BMW 81 22 9 400 272 BMW 81 22 9 400 275 BMW 81 22 9 407 738 BMW 83 22 0 403 248 BMW 83 22 9 407 765 BMW 83 22 9 407 859 BMW 83 22 9 407 859 CAT TO-2 FORD MERCON OPEL 19 40 707 OPEL 19 40 767 VW TL 521 62 (G 052
В 101 D5F, 06K, 17E,	FORD M2C134-D JOHN DEERE JDM J 20 C / D KOMATSU AXO 80 (KES 07.866) KUBOTA UDT FLUID MASSEY FERGUSON CMS 1135 / 1143 VOLVO WB 102 ZF TE-ML 03E, 03F, 05F, 06K JOHN DEERE JDM J 14 A/C KOMATSU-HANOMAG VOLVO WB 101 ZF TE-ML 03E	TITAN ATF 3000	Super High Performance DEXRON II (D) ATF for all automatic transmissions in commercial vehicles, machinery and passenger cars according to manufacturer's documentation.	MAN 339 TYPE V1 MAN 339 TYPE Z1 MB-APPROVAL 236.1 VOITH H55.6335.3X ZF TE-ML 02F, 03D, 04D, 14A, 17C	ZF TE-ML 09, 11B DEXRON II (D) ALLISON C-4 BMW 81 22 9 400 272 BMW 81 22 9 400 273 CAT TO-2 FORD MERCON FORD M2C185-A FORD M2C185-A FORD M2C185-A FORD M2C166-H FORD M2C9010-A OPEL 19 40 700 OPEL 19 40 707 DENIC ODBOMAT
4 CD/CF -4 SU KES 07.868.1	ALLISON C-4 (HD10/HD30) ALLISON TES-439 (HD30 only) DANA EATON	TITAN ATF 10	High Performance ATF for transmissions, power steering systems	MB-APPROVAL 236.2	RENK-DOROMAT VOLVO VW ZF TE-ML 09, 11A TASA
.03C, 07F (HD30 only)			and hydraulic drives which require a GM-specification TYPE A, Suffix A fluid.		MAN 339 TYPE A
4	ALLISON C-4 CATERPILLAR TO-2 FORD M2C 86B/C, 134 D JOHN DEERE J20C KOMATSU KUBOTA UDT MASSEY FERGUSON M1135 VOLVO VME WIR101		Suffix A fluid.	1	1

Multifunctional gear oils

		Specifications/ Approvals	FUCHS recommendations
TITAN UTTO PRO	Ultra High Performance multifunctional oil for gears, axles and hydraulic systems with improved wear protection and wide range of application temperatures.	API GL-4 SAE J 306: 75W-80 VOLVO WB 101	ALLISON C-4 CASE MS 1207/1209/1210 FORD M2C86-C FORD M2C134-D JOHN DEERE JDM J 20 C / D KOMATSU AXO 80 (KES 07.866) KUBOTA UDT FLUID MASSEY FERGUSON CMS 1135 / 1143 VOLVO WB 102 ZF TE-ML 03E, 03F, 05F, 06K
TITAN UTTO ZF	Super High Performance gear oil for ZF axles with limited-slip differentials. Recommended for construction machinery and material-handling vehicles axles.	ZF TE-ML 05F, 06K, 17E, 21F	JOHN DEERE JDM J 14 A/C KOMATSU-HANOMAG VOLVO WB 101 ZF TE-ML 03E
TITAN T04, HD10, 30, 50	High Performance multifunctional transmission and drive-train lubricants for construction machinery.	API GL-4 CD/CF CAT TO-4 KOMATSU KES 07.868.1 ZF TE-ML 03C, 07F (HD30 only)	ALLISON C-4 (HD10/HD30) ALLISON TES-439 (HD30 only) DANA EATON
TITAN UTTO	Superior, High Performance universal tractor transmission oil designed to meet the latest and most severe specification introduced by original equipment manufacturers.	API GL-4	ALLISON C-4 CATERPILLAR TO-2 FORD M2C 86B/C, 134 D JOHN DEERE J20C KOMATSU KUBOTA UDT MASSEY FERGUSON M1135 VOLVO VME WB101 NEW HOLLAND NH 410B ZF TE ML 03E, 05F, 06K, 17E, 21F







Our high performance product program for the most difficult applications.



Hydraulic oils

		Specifications/ Approvals	FUCHS recommendations
RENOLIN B-HVI SERIES 15HVI 32 HVI 46 HVI 68 HVI	High quality lubricating and hydraulic oils for various applications where high viscosity index and good load carrying capacity are required. Especially recommended where a low start-up viscosity at low temperatures and high viscosity at high temperatures is required.	The products meet or exceed the requirements according to: DIN 51 524-3, HVLP ISO 6743-4, HV DENISON HF 0 BOSCH REXROTH VICKERS US STEEL CINCINNATI MILACRON	
RENOLIN B SERIES	Lubricating and hydraulic oils with additives to improve ageing resistance, corrosion prevention and wear protection.	The RENOLIN B RANGE products fulfill and surpass the requirements according to: DIN 51 524: HLP ISO 6743-4: HM DENISON HF1, HF2, HF 0 VICKERS 1286-S, M 2950-S CINCINNATI MACHINE P68, P69, P70 US STEEL 127, 136 Well known pump manufacturers have approved the RENOLIN B SERIES oils, E.g: Denison Bosch Rexroth Sauer Danfoss	
TITAN UNIVERSAL HD 10W	High performance monograde oil for gasoline and diesel engines. Specially developed for off-road vehicles. Also suitable in other components depending upon manufacturer's requirements.	ACEA E2 API CF-4/SG MAN 270 MB-APPROVAL 228.0 ZF TE-ML 03B	MIL-L-2104 D ALLISON C-4 CAT TO-2 ZF TE-ML 02C

Greases

		Specifications/ Approvals	FUCHS recommendatio
RENOLIT LZR 000	Semi-fluid grease for engine vehicle central lubrication systems. Gear grease for gearboxes in municipal machinery. Observe manufacturer's recommendations, -40 °C to +110 °C.	GP 00/000 G-40 ISO-L-X-DBIB 00/000 MAN 283 Li-P 00/000 MB-APPROVAL 264.0 SCHAEFFLER LINCOLN TECALEMIT	
RENOLIT FLM 2 Also available for use in FUCHS REINER system grease guns. Also in NLGI grade 0 available.	Universal, High Performance grease with solid lubricant additives with excellent wear protection. For the lubrication of commercial vehicles and machinery. Proven under extreme conditions such as in construction machinery, -30 °C to +140 °C.	KPF 2 N-30 ISO-L-X-CDEB 2 MAN 285 Li-PF 2	
RENOLIT CX-HT 2 Also available for use in FUCHS REINER system grease guns. Also in NLGI grade 0 available.	Special calcium complex soap-based grease containing MoS ₂ and graphite for the lubrication of highly-stressed plain bearings at high temperatures. Excellent protection against corrosion and wear. Recommended for the greasing of gear wheels, -20 °C to +200 °C, NLGI grade 2, also available in spray can as RENOLIT UNILOAD .		
RENOLIT DURAPLEX EP 2 Also available for use in FUCHS REINER system grease guns. Also in NLGI grade 1 and 3 available.	Special grease for the long-term lubrication of plain and roller bearings, such as vehicle clutch-release bearings, highly-stressed construction machinery bearings, etc., -30 °C to +160 °C.	KP 2 P-30 ISO-L-X-CEHB 2	
RENOLIT LX-PEP 2 Also in NLGI grade 1/2 and 3 available.	Special grease based on lithium complex soaps for longlife applications. Good corrosion protection, thermally and mechanically stable, specially suitable for wheel bearings of cars and trucks, -30 °C to +150 °C.	KP 2 N-30 ISO-L-X-CDEB 2 MAN 284 Li-H 2 MB-APPROVAL 265.1 SCHAEFFLER-GROUP DB-KENNDATENBLATT 873 499 ZF TE-ML 12 VW TL 52147X INTERPRECISE (IDC Bearings)	
RENOLIT EXTREME LOAD 2	Non heavy metal EP long life lithium grease with special additive treatment. Highly suited to applications where water wash-out could be a problem.	Formulated to Ford Specifications SM1C 1020B and WSD M1C 227A	
RENOLIT MP PLUS Only available for use in FUCHS REINER system grease guns.	High Performance, multipurpose EP grease for plain and roller bearings with excellent adhesion, optimum corrosion protection and very good ageing stability, -30 °C to +120 °C.	KP 2 K-30 ISO-L-X-CCEB 2	
RENOLIT LX-EP2	Non leaded, lithium complex EP grease capable of operating at higher temperatures than normal lithium greases.	Approved to Ford Motor Co. spe- cifications WSD-M1C-228A and SAM 1C 9111A. Approved to Leyland Bus specification GX	
RENOLIT MO-2	Molybdenum disulphide grease for high load applications.	Formulated to Ford specification ESA M1C 47A	
RENOLIT CXI-2	Calcium sulphanate complex grease for heavily loaded applications. Developed to work under severe conditions.	FORD ESA-M1C 172-A	
RENOLIT EP SERIES NLGI 000, 00, 0, 1, 2	High specification general purpose greases suitable for many application areas.		
RENOLIT EP 2	High quality, multi-purpose grease.		



Central hydraulic fluid

		Specifications/ Approvals	FUCHS recommendations
TITAN ZH 4300 B	Premium performance central hydraulic fluid formulated with fully-synthetic base oils.	MAN M 3289	BMW 81 22 9 407 758 BMW 82 11 1 468 041 BMW 83 29 0 429 576 FENDT X 902 011 622 FORD M2C204-A OPEL 19 40 715 OPEL 19 40 766 PSA S712710 VOLVO 1161529 VW TL 521 46 (G 002 000)





Our high performance product program for the most difficult applications.



Brake fluids

		Specifications/ Approvals	FUCHS recommendations
MAINTAIN DOT 4	High Performance brake fluid for hydraulic brake systems and clutch actuation in passenger cars, trucks and motorcycles.	FMVSS NR. 116 DOT 3/ DOT 4 ISO 4925 CLASS 3/4 SAE J1703/J1704	FORD M6C62-A FORD M6C9103-A NH 800 A OPEL 19 42 421



Antifreeze/ Diesel additives

		Specifications/ Approvals	FUCHS recommendations
MAINTAIN FRICOFIN LL	Coolant additive based on monoethylene glycol. Free from nitrite, amine, phosphate and silicates.	ASTM D 3306, D 4985 BS 6580 KSM 2142 FORD WSS-M97-B44-D DAF 74002 DEUTZ TR 0199-99-1115 MAN 324 SNF MB-APPROVAL 325.3 MWM TR0199-99-2091 BEZ.REG. ARNSBG E62.12.22.64-2011-1	AFNOR NFR 15-601, NATO S-759 CUMMINS (ISBe engines at DAF and Leyland) DETROIT DIESEL COMPANY 93K217 GM 6277M, IRISBUS, JASO M325, JIS K2234 KOBELCO, KOMATSU (different colour & ready to use) LIEBHERR MD 1-36-130 PSA B 71 5110 RENAULT Type D VW TL 774 D/F (different colour), VOLVO 128 6083/002 (=VOLVO TRUCKS, VOLVO CE, from MY 2005) WAUKESHA, YANMAR
MAINTAIN FRICOFIN LL 50:50	Ready to use coolant based on monoethylene glycol. Free from nitrite, amine, phosphate and silicates.	Reference above for concentrate	Reference above for concentrate
MAINTAIN FRICOFIN	Coolant additive based on monoethylene glycol. Free from nitrite, amine and phosphate.	ASTM D 3306 ASTM D 4985 AFNOR NF R 15-601 BS 6580:1982, SAE J1034 BUNDESWEHR TL 6805-0038/1 BMW GS 9400 (BMW N 600 69.0) DEUTZ TR 0199-99-1115 JENBACHER TA 1000-0201 MAN 324 NF MAN 324 NF PRITARDER MB-APPROVAL 325.0 MTU MTL 5048 MWM TR 0199-99-2091 PN-C 40007:2000 VOITH TURBO 172.00225010	BOMAG LIEBHERR TLV 035/ TLV 23009 A OPEL/GM B 040 0240 VW TL 774-C (G 11)

		Specifications/ Approvals	FUCHS recommendations
MAINTAIN FRICOFIN HDD	Ultra High Performance engine coolant concentrate based on mono-ethylene glycol. Free of amines and phospates with low silicate technology. Long term coolant for heavy duty diesel applications and sta- tionary engines. Efficient with all metals, especially aluminium.	ASTM D 3306, D 4985, D 6210 BS 6580 AS/NZS 2008:2004 TYPE A FORD ESE-M97B44-A FORD ESE-M97B18-C FORD WSS M97B51-A1 JIS K2234 DETROIT DIESEL 93K217 MTU 5048	CATERPILLAR EC1 CUMMINS CES 14603 DETROIT DIESEL 7SE 298 FREIGHLINER 48-2288D GM 1825M & 1899M GM HEAVY TRUCK HYUNDAI KENWORTH RO26-170-97 MACK TRUCKS MAN 324 NEW HOLLAND WSN- M97B18-D PACCAR CS 0185 PERKINS TOYOTA MOTOR CORP. RP 329
MAINTAIN FRICOFIN ESK	Versatile MEG anti-freeze suitable for all-year round use.	ASTM D4985 BS 6580: 2010	
MAINTAIN FRICOFIN ESK 50:50	Ready to use MEG anti-freeze suitable for all-year round use.	ASTM D4985 BS 6580: 2010	
MAINTAIN WINTERFIT	Diesel fuel and heating oil additive concentrate to prevent waxing and plugging at low temperatures.		





Our high performance product program for the most difficult applications.



PLANTO Lubricants

Engine oil		Specifications/ Approvals	FUCHS recommendations
PLANTOMOT LA MAXX SAE 5W-40	High Performance energy conserving SAE 5W-40 engine oil. Perfect for vehicles powered by bio-diesel. Biodegradable	API CF4 / SG	

Biodegradable gear-/ hydraulic oil		Specifications/ Approvals	FUCHS recommendations
PLANTO HYTRAC PLUS	Special UTTO fluid for tractor gearboxes with or without wet brakes.	SAE 10W-30 SAE 80	Diverse makes of tractors

Biodegradable hydraulic oils			Specifications/ Approvals	FUCHS recommendations
PLANTOSYN 46 HVI		Rapidly biodegradable, High Performance hydraulic fluid based on saturated synthetic esters.	PLANTOSYN 46 HVI fulfils or exceed the require- ments according to: ISO 15380: HEES 46 German I"Blue Angel" Eco Label for ISO VG 46	
PLANTOHYD S RA ISO VG 10, 15, 22 32, 46, 68	NGE	Environmentally aware, High Performance lubricating and hydraulic oils based on special synthetic esters.Can be used universally in the temperature range -35 °C to +90 °C.	The products of the PLANTOHYD S-series fulfil or exceed the require- ments according to: ISO 15380: HEES German "Blue Angel" environmental seal for ISO VG 15, 22 and 46	
PLANTOHYD 40N		Environmentally compatible hydraulic and lubricating oil based on natural raw materials	ISO 15380: HETG RAL UZ 79 "BLUE ANGEL"	

Biodegradable greases		Specifications/ Approvals	FUCHS recommendations
PLANTOGEL 2 S	Biodegradable multipurpose grease, based on synthetic esters.	KPE 2 K-40 ISO-L-X-DCEB 2 MAN 283 Li-P 2-B Bundeswehr GY 3095 SKF Lubrication Solutions LINCOLN RWE	DELIMON

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An easy guide to engine oils and their specifications.

Engine oils

There are a wide range of specifications available. The table below shows some of the more widely used and important specifications:

ACEA

ACEA E categories are used to specify the correct engine oil in commercial diesel engines.

- E1 Older diesel engine specification now obsolete.
- E2 Oil for older normally aspirated and turbocharged engines, medium to heavy duty and standard oil drain intervals.
- E3 Heavy duty oil with improved piston cleanliness and bore polishing protection, better dispersancy and improved thermal stability. Recommended for diesel engines meeting Euro I and II emissions operating under harsh conditions and suitable for extended drain.
- E4 Engine oil recommended for highly rated diesel engines meeting Euro I, II, III, IV and V emission requirements. Suitable for certain engines with EGR and SCR NOx reduction systems but not suitable for engines fitted with particulate filters. Capable of extended drain interval subject to manufacturer guidelines.
- E5 Oil with improved properties compared to E3 with further improvements in piston cleanliness, bore polishing, soot handling and turbocharger deposit control.
- E6 Ultra high performance diesel (UHPD), low SAPs engine oil recommended for engine oils up to and including those meeting Euro VI emission requirements operating under very severe conditions. Suitable for engines fitted with particulate filters, EGR and SCR NOx reduction systems. Significant extended drain interval capability subject to manufacturer guidelines.
- E7 Ultra high performance diesel (UHPD) engine oil for engines meeting Euro I, II, III, IV and V emission requirements. Suitable for most engines fitted with EGR and SCR NOx reduction systems but not suitable for engines fitted with particulate filters.
- E9 Ultra high performance diesel (UHPD), mid SAPs engine oil recommended for engine oils up to and including those meeting Euro VI emission requirements operating under very severe conditions including extended drain. Suitable for engines fitted with particulate filters, EGR and SCR NOx reduction systems.
 Note. Current ACEA categories are E4, E6, E7 and E9

Gear oils

A variety of different gear oils which fulfil a range of specifications are The table here shows the lubricant types described by the API gear oil

API Classifications

The American Petroleum Institute (API) has a gear oil classification system which allows categorisation according to application conditions. API gear oil classifications are used internationally.

API Gear Oil Clas- sifications	Operating Conditions	Type of Gearbox
API GL-1	Low bearing loads and low sliding speeds. Non EP.	Manual transmissions and axles operating under mild conditions.
API GL-2	Higher loads and sliding speeds than API GL-1.	Worm drives, manual gearboxes and some axles operating under moderate loads.
API GL-3	Moderately high loads and sliding speeds.	Certain axle drives, bevel gears and manual gearboxes.
API GL-4	Higher loads and speeds. High speed/low torque or low speed/high torque.	Axles with spiral bevel gears and manual transmissions operating under moderate to severe conditions.
API GL-5	High speed and shock loads. High speed/low tor- que or low speed/high torque.	High off-set hypoid gears operating under severe operating conditions. Suitable for some manual gearboxes.



API

API commercial diesel specifications are classified by the letter C (Compression ignition) followed by a number, detailed and described below.

CE	Diesel engine oil for older high speed, four stroke, naturally aspirated and turbocharged diesel engines.
CF	Heavy duty diesel engine oil especially designed for indirect fuel injection but can also be used in other diesel engines. Suitable for fuel sulphur > 0.5%.
CF-4	Introduced in 1990 for high speed, four stroke diesel engines. Suitable for naturally aspirated and turbocharged engines.
CG-4	Engine oil for severe duty, high speed, four stroke diesel engines using fuel with sulphur < 0.5% by weight. Introduced for engines meeting 1994 emission standards.
CH-4	Engine oil introduced for engines meeting 1998 exhaust emission standards. Formulated for use with diesel engines using fuel with sulphur content up to 0.5%.
CI-4	Introduced in 2002 for engines designed to meet the 2004 EPA exhaust emission standards. Designed for engines fitted with and without EGR systems running on fuel with sulphur levels up to 0.5%.
CI-4	Introduced in 2006 for diesel engines designed to meet the

CJ-4 Introduced in 2006 for diesel engines designed to meet the 2007 EPA on-highway emissions standards. CJ-4 oils are mid SAPs and designed to be used with fuel sulphur levels up to 500ppm. Oils of this specification can be used in engines fitted with particulate filters and other advanced exhaust treatment devices.

JASO - Japanese Oil Standards Organisation

JASO DH-1

Is a commercial diesel engine oil specification for older vehicles without exhaust gas treatment devised and for use with higher sulphur content fuels.

JASO DH-2

Is a commercial diesel engine specification for the latest engines fitted with exhaust gas treatment devices. Only to be used with diesel fuel containing less than 50ppm sulphur.

GLOBAL

Global DHD-1 Is the specification which covers and harmonises some ACEA, API and JASO specifications and tests.

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