

Lubricants Product Program

2/2018

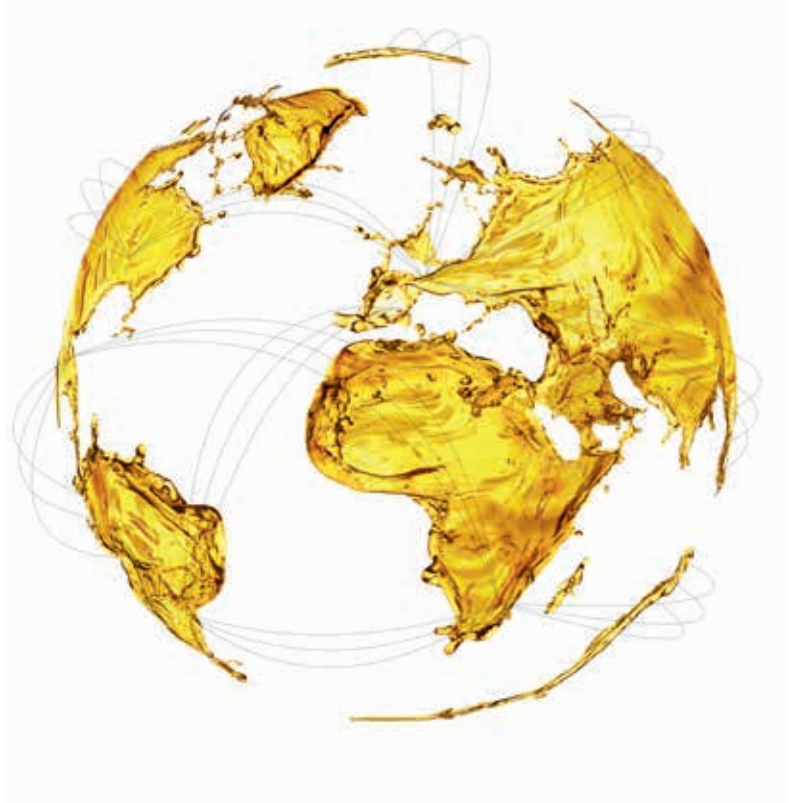


LUBRICANTS. TECHNOLOGY. PEOPLE.

We focus consistently on high-quality lubricants and related specialties.

We develop innovative and holistic solutions for a wide variety of applications.

We value the high level of commitment of our employees and their trusting interaction with one another.



Facts and figures

Company: FUCHS SCHMIERSTOFFE GMBH, a company of the FUCHS Group

Headquarters: Mannheim

Product range: A full range of more than 2,000 products and 6,000 articles

Certifications: IATF 16949, ISO 14001, BS OHSAS 18001, ISO 50001

References: One of the leading lubricants OEM for the German automotive industry

FUCHS has developed, produced and sold lubricants and related specialties for more than 80 years – for virtually all areas of application and sectors. With over 100,000 customers and 58 companies worldwide, the FUCHS Group is the leading independent supplier of lubricants.

A team of more than 800 specialists across Germany works to guarantee the satisfaction of our customers. Whatever their requirements, we have the ideal lubricant for their specific applications and processes. In our technology centre we link interdisciplinary expertise in a quick and efficient way – and work on innovative lubricant solutions to meet the demands of today and tomorrow every single day.

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Imprint

The World of Automotive Lubricants



Engine Oils

FUCHS is one of the leading lubricant manufacturers for the initial filling of passenger cars, trucks and agricultural or construction machines. With a comprehensive range of lubricants for all automotive applications and the XTL®-Technology that is unique worldwide, FUCHS truly sets new standards. Upon starting the engine, engine oils with XTL®-Technology reach the places where their protective film is urgently needed quicker and easier, even under extreme conditions. This ensures reliable protection throughout the entire service life of the oil. For the driver, that means easier start processes, less wear and lower fuel consumption – and oil consumption is also significantly lower than in conventional oils of the same viscosity class. A pioneering engine oil technology.

TITAN



Transmission Fluids

To ensure smooth running throughout their entire service life, modern car transmissions need state-of-the-art, high performance lubricants that protect the gearing from wear and considerably improve the ease with which gears are changed. Moreover, the extension of the replacement intervals right up to a lifetime filling increases the requirements placed on the quality of the oils. As a long-standing development partner of the world's leading gear manufacturers, we keep our finger on the pulse of the times. Stay on the safe side with the ultra-modern **TITAN** and **PENTOSIN** gear oils.

TITAN, PENTOSIN



Lubricants for Agricultural Machinery

FUCHS has been active in the agricultural lubricant market for more than 70 years, both as an OEM for machine manufacturers and in the field of workshop services. The latest innovative lubricants under the **AGRIFARM** brand secure maximum operational reliability of all agricultural units – from engines and transmissions, right through to hydraulics in all machines and vehicles. **AGRIFARM** lubricants have proved extremely successful even under the very toughest conditions and thereby offer the highest level of reliability for your vehicle fleet.

AGRIFARM



Motorcycle Lubricants

FUCHS offers more products that are specifically developed for the requirements of motorcycles and two-stroke engines than any other supplier on the market. Our new XP technology for motorized two-wheelers offers significantly reduced fuel and oil consumption, meets the highest API specifications and boosts performance with the Pro 4 and Comp 4 products.

Silkolene®

Service Products

The FUCHS **MAINTAIN** range of workshop and service products is a comprehensive portfolio of coolant additives, brake fluids and fuel additives. These offer your vehicle optimum protection at all times – particularly in winter.

Our **MAINTAIN** products are individually matched to virtually every vehicle type and offer the best possible protection combined with the latest technology.

MAINTAIN

Environmentally Friendly Lubricants

The dream of environmentally friendly lubricants is nothing new. Indeed, FUCHS was one of the first companies to enter the market with rapidly biodegradable lubricants back in the 70s. Since then, FUCHS has invested heavily in researching and further developing these lubricants.

The reward for all this hard work: a priceless and unparalleled wealth of expertise and practical experience. Because one thing is certain: a good product alone is not enough. The user also needs competent advice when choosing the right product, switching over to rapidly biodegradable lubricants and for application. It really pays off to have an expert partner by your side.

PLANTO

The World of Industrial Lubricants



Industrial Oils

Industrial lubricants have an important task in the generation and transmission of energy, in the reduction or transmission of drive forces, in the deployment of machine tools, when generating cooling air or compressed air and for many other applications in production. FUCHS industrial lubricants can make a significant contribution to achieving higher productivity, improving efficiency and saving energy, for example in hydraulic systems, gear units and many other applications. Furthermore, rapidly biodegradable lubricants from FUCHS present a real alternative to hydrocarbon-based lubricants.

**RENOLIN, RENISO,
RENEP, PLANTO**

Greases

Lubricating greases are consistent lubricants made up of base oil and a specially chosen thickener. To increase certain properties, additives are added to the lubricating greases. Lubricating greases are structural elements, especially when used as long-life lubricants for lifetime lubrication. **RENOLIT** industrial lubricating greases are a balanced and complete package offering the ideal technical and economical solution in the largest possible number of lubricating grease applications in industry.

RENOLIT, PLANTO

Cutting Fluids

Today, a modern cutting fluid is subjected to a variety of demands. Cooling lubricants for metalworking processes must be effective, economical and free from ingredients that are harmful to health and the environment. In process chains downstream of metalworking, customized cleaning agent solutions and process-compatible and reliable corrosion preventatives play a decisive role when it comes to production reliability and product quality. That's why optimally matched lubricant concepts are important – because all process steps must be taken into account. With its comprehensive range of lubricants and its many years of application experience, FUCHS understands the processes of its customers like no other lubricant manufacturer.

ECOCOOL, ECOCUT



Quenching Products

Fluids are highly important in the area of heat treatment in particular: the required microstructure compositions and degrees of solidity can only be achieved with the right quenching medium. An altered quenching characteristic has a direct effect on the hardened microstructure, on the properties of the material and thereby also on its later deployment. Place your trust in a partner that understands the full heat treatment process, that uses that knowledge to advise you and provides you with system solutions – to your benefit.

THERMISOL

Cleaner

When manufacturing metal products, all materials that have a negative impact on the subsequent production steps or disrupt the later use of the metallic object must be removed from the surfaces. In addition to an extensive consulting, FUCHS offers everything from a single source. Perfectly matched products together with a comprehensive spectrum of industrial cleaners ensure a high level of process safety by avoiding product incompatibility as well as delivering excellent performance in virtually all cleaning processes.

RENOCLEAN

Corrosion Preventives Forming Lubricants

Corrosion protection measures must be optimally compatible with upstream process steps and the products used there. Our recommendation: the compatible **ANTICORIT** corrosion protection products. A wide range of film types is available, from oily to vaseline-type or waxy films. If no film is desired, we solve your corrosion protection problems with our complete VCI range comprising papers, foils, tablets, foams and many other special solutions.

**RENOFORM
ANTICORIT**

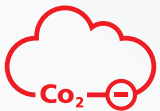
FUCHS lubricants

stand for performance and sustainability, for safety and reliability, for efficiency and cost savings.

They represent a promise: **technology that pays back.**



Rapidly
biodegradable



Reduced CO₂



Food grade



Fuel saving



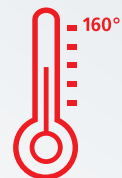
Process compatibility



Corrosion protection



Extension of
maintenance intervals



High thermal
resistance



Less wear



Reduced oil
consumption

Examples for Key Technologies

RENOLIN XTREMETEMP 46 INDUSTRIAL OIL

A special product in terms of sustainability is the hydraulic oil RENOLIN XtremeTemp 46. Thanks to its special composition, it displays fuel saving potential of 3% to 6% in mobile hydraulics applications.

RENOLIN ZAF B HT INDUSTRIAL OIL

The RENOLIN ZAF B HT range excels through high thermal and oxidative resistance and excellent wear-protection characteristics. In combination with selected mineral oil-based solvent raffinates, the innovative zinc-free and ash-free additive technology guarantees excellent hydraulic and gear oil properties.

RENOLIN GEAR VCI INDUSTRIAL OIL

The new RENOLIN GEAR VCI product is a high performance industrial gear oil that combines the properties of a high performance gear oil with reliable corrosion protection. Thanks to its vapor phase corrosion protection, the product guarantees reliable long-term protection and is used in transmissions that have long downtimes or are stored for an extended period of time.

ECOCOOL PHH AL COOLING LUBRICANT

With ECOCOOL PHH AL, FUCHS has developed a universally deployable cooling lubricant for aerospace applications that is suitable for all kinds of material groups, is boron-free and fulfils the requirements of REACH and TSCA. Beside the standard market engine materials (titanium, nickel and aluminium alloys), the test also had to be passed for older high-strength steels to be approved for use at Lufthansa Technik.

ANTICORIT CPX®

LONG-TERM CORROSION PREVENTION

With its ANTICORIT CPX® range, FUCHS has developed a new formulation category for long-term corrosion protection (10 years). This new wax system guarantees controlled runoff inhibition, both at increased temperatures and at normal ambient temperatures, without compromising penetration into gaps and flanges. It also easy to remove. Individual parameters – such as drying time, run-off tendency, period of corrosion protection and film flexibility – can be customized according to customer requirements. CPX® technology is extremely versatile and suitable for a whole host of different applications, whether cavity protection, long-term warehousing or transport protection.



Ground-breaking XTL®-Technology.

While starting, engine oils with XTL®-Technology reach faster and easier the parts of an engine, which urgently require a protective oil film – even under extreme conditions and over the entire duration of the oil change interval.

This means: Easier start-ups, less wear and lower fuel consumption. Even oil consumption is significantly lower than with conventional SAE 5W-30 oils.



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Metal Processing Lubricants

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AUTOMOTIVE LUBRICANTS

Never before lubricant technology has been as challenging for vehicles as it is today. Alternative fuels, new engine technologies, complex exhaust aftertreatment systems and significantly longer oil drain intervals require consistently high performance from the lubricants used.

To ensure that modern vehicles remain highly efficient in the long term, FUCHS, as one of the leading original equipment suppliers to the German automotive industry, has developed a comprehensive product range. The range of lubricants for cars, trucks, commercial vehicles and motorcycles includes high-quality oils for almost all engines, transmissions and also for all automated transmissions such as dual-clutch transmissions and torque converter transmissions, for central hydraulics and axles as well as service fluids such as antifreeze additives, brake fluids and much more.

With its comprehensive range of lubricants for all automotive applications and the world-wide unique XTL® technology, FUCHS sets new standards.

FUCHS meets the extremely high performance requirements and quality standards of car manufacturers and is certified according to IATF 16949. The extensive product range meets almost all internationally valid specifications and original manufacturer approvals and includes lubricants for almost all vehicle manufacturers






Automotive Lubricants





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Engine Oils



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Passenger Cars				
TITAN GT1 EVO SAE 0W-20 	Premium Performance Engine Oil with new XTL®-Technology in path-breaking viscosity class. Specially designed for highly stressed downsized engines with maximum power output, for extreme fuel-economy characteristics and reduced CO ₂ emissions. Excellent cold starting behaviour, very fast oil circulation and outstanding performance reserves.	ACEA A1/B1	BMW LONGLIFE-14 FE+ JAGUAR LAND ROVER STJLR.51.5122	—
TITAN GT1 PRO V SAE 0W-20 	Premium Performance Engine Oil with new XTL®-Technology in ground-breaking viscosity class. Specially designed for modern VOLVO vehicles, for extreme fuel-economy characteristics and reduced CO ₂ emissions. Excellent cold starting behaviour, very fast oil circulation and outstanding performance reserves.	ACEA A1/B1	VOLVO VCC RBS0-2AE	—
TITAN GT1 LONGLIFE IV SAE 0W-20	Premium Performance Engine Oil in ground-breaking viscosity class. Specially designed for modern VW vehicles, for extreme fuel-economy characteristics and reduced CO ₂ emissions. Excellent cold starting behaviour, very fast oil circulation and outstanding performance reserves.	ACEA A1/B1	VW 508 00/509 00	PORSCHE C20
TITAN GT1 LL-12 FE SAE 0W-30 	Premium Performance Engine Oil with new XTL®-Technology. Specially developed for latest BMW gasoline and diesel vehicles with exhaust after treatment. Excellent cold starting, lower oil consumption and outstanding performance reserves.	ACEA C2	BMW LONGLIFE-12 FE	—
TITAN GT1 SAE 0W-30	Premium Performance, fuel-economy engine oil for modern passenger cars and light commercial vehicles. Specially developed for latest PSA gasoline and diesel vehicles with exhaust after treatment and turbocharger. Excellent cold starting, lower oil consumption and minimized exhaust emissions.	ACEA C2	PSA B71 2312	FIAT 9.55535-DS1/ GS1 IVECO 18-1811 CLASSE SC1 LV

TITAN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Passenger Cars				
TITAN GT1 PRO FLEX SAE 5W-30 	Premium Performance, extreme fuel-economy engine oil with new XTL®-Technology for optimum cold start ability and outstanding performance reserves. For modern passenger cars and light commercial vehicles with or without extended service intervals. Specially developed for BMW, Mercedes-Benz and Opel vehicles with exhaust after treatment and turbocharger.	ACEA C3 API SN/SM	BMW LONGLIFE-04 dexos2™ (GB2C0209075) MB-APPROVAL 229.51 MB-APPROVAL 229.52 VW 502 00/505 00/ 505 01	FIAT 9.55535-S3 GM-LL-A-025 GM-LL-B-025
TITAN GT1 PRO C-3 SAE 5W-30 	Premium Performance, extreme fuel-economy engine oil with new XTL®-Technology for optimum cold start ability and outstanding performance reserves. For modern passenger cars and light commercial vehicles with or without extended service intervals. Specially developed for BMW, VW and Mercedes-Benz vehicles with exhaust after treatment and turbocharger.	ACEA C3 API SN	BMW LONGLIFE-04 MB-APPROVAL 229.51 PORSCHE C30 VW 504 00/507 00	FIAT 9.55535-S3
TITAN GT1 PRO 229.6 SAE 5W-30 	Premium Performance, extreme fuel-economy engine oil with new XTL®-Technology. Specially designed for Mercedes-Gasoline-Vehicles. Optimum cold starting, lower oil consumption and minimized exhaust emissions.	ACEA A5/B5	MB-APPROVAL 229.6	–
TITAN GT1 PRO C-1 SAE 5W-30	Premium Performance, extreme fuel-economy engine oil for modern passenger cars and light commercial vehicles with or without extended service intervals. Specially developed for vehicles with exhaust after treatment and turbocharger. Optimum cold starting, lower oil consumption and minimized exhaust emissions.	ACEA C1	JAGUAR LAND ROVER STJLR.03.5005	JASO DL-1 FORD WSS-M2C934-B
TITAN GT1 PRO C-2 SAE 5W-30	Premium Performance, extreme fuel-economy engine oil for modern passenger cars and light commercial vehicles with or without extended service intervals. Specially developed for PSA vehicles with exhaust after treatment and turbocharger. Optimum cold starting, lower oil consumption and minimized exhaust emissions.	ACEA C2 API SN/SM	–	API CF FIAT 9.55535-S1 IVECO 18-1811 CLASSE SC1 PSA B71 2290
TITAN GT1 PRO C-4 SAE 5W-30	Premium Performance, extreme fuel-economy engine oil for modern passenger cars and light commercial vehicles with or without extended service intervals. Specially for Renault engines with exhaust after treatment and turbocharger. Optimum cold starting, lower oil consumption and minimized exhaust emissions.	ACEA C4	MB-APPROVAL 226.51 RENAULT RN0720	–
TITAN GT1 SAE 5W-40 	Premium Performance, fuel-economy engine oil with new XTL®-Technology for optimum cold start ability and outstanding performance reserves. For modern passenger cars and light commercial vehicles with or without extended service intervals. Specially developed for vehicles with exhaust after treatment and turbocharger.	ACEA C3 API SN/SM FORD WSS- M2C917-A	BMW LONGLIFE-04 dexos2™ (D20311HE075) MB-APPROVAL 226.5 MB-APPROVAL 229.31 PORSCHE A40 RENAULT RN0700/ RN0710 VW 502 00/ 505 00/505 01	API CF FIAT 9.55535-S2
TITAN Supersyn LONGLIFE PLUS SAE 0W-30	Ultra High Performance, extreme fuel-economy engine oil formulated with fully synthetic base oil for VW engines. Specially developed for VW Longlife Technology. For all passenger car gasoline and diesel engines with or without pump injector technology. Excellent cold starting and lower oil consumption.	–	VW 503 00/506 00/ 506 01	BMW LONGLIFE-01 FE

Engine Oils

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Passenger Cars				
TITAN Supersyn LONGLIFE SAE 0W-30	Ultra High Performance, extreme fuel-economy engine oil for a variety of vehicles with or without extended service intervals. Excellent cold starting and lower oil consumption.	ACEA A3/B4 API SL	MB-APPROVAL 229.5 VW 502 00/505 00	BMW LONGLIFE-01
TITAN Supersyn LONGLIFE SAE 0W-40	Ultra High Performance, fuel-economy engine oil for a variety of vehicles with or without extended service intervals. Excellent cold starting and lower oil consumption.	ACEA A3/B4 API SN	BMW LONGLIFE-01 MB-APPROVAL 229.5 PORSCHE A40 VW 502 00/505 00	FORD WSS-M2C937-A
TITAN Supersyn LONGLIFE SAE 5W-40	Ultra High Performance, fuel-economy engine oil for a variety of vehicles with or without extended service intervals. Optimum cold starting and lower oil consumption.	ACEA A3/B4 API SN/SM	BMW LONGLIFE-01 MB-APPROVAL 226.5 MB-APPROVAL 229.5 PORSCHE A40 PSA B71 2296 RENAULT RN0700/ RN0710 VW 502 00/505 00	API CF GM-LL-B-025
TITAN Supersyn FE SAE 0W-30	Ultra High Performance, fuel-economy engine oil for a variety of vehicles with or without extended service intervals. Excellent cold starting properties and low oil consumption.	ACEA A5/B5	VOLVO VCC 95200377	RENAULT RN0700
TITAN Supersyn F Eco-FE SAE 0W-30	Ultra High Performance, extreme fuel-economy engine oil especially developed for modern Ford Diesel engines. Excellent cold starting and lower oil consumption.	ACEA C2 FORD WSS-M2C950-A	–	–
TITAN Supersyn F Eco-B SAE 5W-20	Ultra High Performance, extreme fuel-economy engine oil especially developed for Ford EcoBoost gasoline engines. Optimum cold starting and lower oil consumption.	ACEA A1/B1 ACEA C5 API SN FORD WSS-M2C948-B	JAGUAR LAND ROVER STJLR.03.5004	CHRYSLER MS 6395 FORD WSS-M2C925-A FORD WSS-M2C925-B
TITAN Supersyn F Eco-DT SAE 5W-30	Ultra High Performance, extreme fuel-economy engine oil especially suitable for Ford DuraTorq-Diesel engines. Optimum cold starting and lower oil consumption.	ACEA A1/B1 ACEA A5/B5 API SL FORD WSS-M2C913-C FORD WSS-M2C913-D	JAGUAR LAND ROVER STJLR.03.5003	API CF CHRYSLER MS 6395 FORD WSS-M2C913-A FORD WSS-M2C913-B IVECO 18-1811 CLASSE S1/S2 JAGUAR M2C913-B RENAULT RN0700
TITAN Supersyn D1 SAE 0W-20 NEW	Ultra High Performance, extreme fuel-economy engine oil, specially developed for GM gasoline engines requiring dexos1™ Gen 2 fluid. Optimum cold starting, lower oil consumption and minimised exhaust emissions.	API SN PLUS RC ILSAC GF-5	dexos1™ Gen 2 (D10172GJ075)	CHRYSLER MS 6395 FIAT 9.55535-CR1 FIAT 9.55535-GSX FORD WSS-M2C947-A
TITAN Supersyn D1 SAE 5W-30	Ultra High Performance, extreme fuel-economy engine oil, specially developed for GM gasoline engines requiring dexos1™ Gen 2 fluid. Optimum cold starting, lower oil consumption and minimised exhaust emissions.	API SN PLUS RC ILSAC GF-5	dexos1™ Gen 2 (D10173GJ075)	FORD WSS-M2C929-A FORD WSS-M2C946-A FIAT 9.55535-CR1 CHRYSLER MS 6395 GM 6094M GM 4718M
TITAN Supersyn SAE 5W-30	Ultra High Performance, extreme fuel-economy engine oil for a variety of vehicles with or without extended service intervals. Optimum cold starting and lower oil consumption.	ACEA A3/B4 API SL	MB-APPROVAL 229.3 VW 502 00/505 00	API CF BMW LONGLIFE-98 GM-LL-A-025 GM-LL-B-025 RENAULT RN0700/RN0710
TITAN Supersyn SAE 5W-40	Ultra High Performance, fuel-economy engine oil for a variety of vehicles with or without extended service intervals. Optimum cold starting and lower oil consumption.	ACEA A3/B4 API SN/SM	MB-APPROVAL 229.3 PORSCHE A40 RENAULT RN0700/ RN0710 VW 502 00/505 00	API CF BMW LONGLIFE-98 FIAT 9.55535-H2/M2/N2/Z2 GM-LL-A-025 GM-LL-B-025

Performance upgrades in Specifications, Approvals and FUCHS Recommendations are highlighted in bold.





Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Passenger Cars				
TITAN Supersyn SAE 5W-50	Ultra High Performance, fuel-economy engine oil for passenger cars. Optimum cold starting behaviour and low oil consumption. Highly durable lubricating film and high oil pressure.	–	–	ACEA A3/B4 API SL/CF
TITAN Supersyn SAE 10W-60	Ultra High Performance, fuel-economy engine oil for passenger cars. Low oil consumption. Highly durable lubricating film and high oil pressure.	–	–	ACEA A3/B3 API SL/CF FIAT 9.55535-H3
TITAN SYN MC SAE 10W-40	Super High Performance, fuel-economy engine oil based on MC-synthesis for a variety of gasoline and diesel engines in passenger cars. Lower oil consumption.	ACEA A3/B4 API SN	MB-APPROVAL 229.1 MB-APPROVAL 229.3 PSA B71 2300 RENAULT RN0700/RN0710 VW 502 00/505 00	API CF FIAT 9.55535-D2/G2
TITAN FORMULA SAE 15W-40	High Performance Engine Oil specially for all normally aspirated and turbocharged gasoline and diesel engines in passenger cars operated under normal conditions.	ACEA A3/B3 API SL	MB-APPROVAL 229.1	API CG-4 FIAT 9.55535-D2/G2 VW 501 01/505 00
Racing Engine Oils				
TITAN RACE SAE 5W-30	Premium Racing Engine Oil for race cars with gasoline or diesel engines. Especially developed for professional use in racing applications. Combines optimum protection with power increase and reduced fuel consumption due to minimized frictional losses.	–	–	ACEA C3
TITAN RACE SAE 10W-60	Premium Racing Engine Oil for race cars fuelled with gasoline or diesel engines. Especially developed for professional use in racing applications. Offers optimum protection due to minimized frictional losses and a stable oil film.	–	–	ACEA A3/B3 API SL/CF

Engine Oils

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Passenger Cars and Commercial Vehicles				
TITAN UNIMAX ULTRA MC SAE 10W-40	Premium Performance Engine 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	DETROIT DIESEL 93K215 DEUTZ DQC III-10 MACK EO-M PLUS MAN M 3275-1 MB-APPROVAL 228.3 MB-APPROVAL 235.27 MTU DDC TYPE 2 RENAULT RLD/RLD-2 VOITH-RETARDER „A“ VOLVO VDS-3	ALLISON C-4 CAT ECF-2 CUMMINS CES 20071/2/6/7/8 MB 229.1 VW 500 00/501 01/ 505 00
TITAN UNIMAX PLUS MC SAE 10W-40	Ultra High Performance, fuel-economy engine 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	DEUTZ DQC II-10 MAN M 3275-1 MB-APPROVAL 228.3 MB-APPROVAL 235.27 MTU DDC TYPE 2 RENAULT RD/RD-2 VOITH-RETARDER „A“ VOLVO VDS-2	ALLISON C-4 CUMMINS CES 20071/2/6/7 MACK EO-M PLUS MB 229.1
TITAN UNIVERSAL HD SAE 15W-40	High Performance Engine Oil for mixed fleets operated under normal conditions. Good performance in normally aspirated and turbocharged diesel engines.	ACEA A3/B3 API SL	DEUTZ DQC I-02 MB-APPROVAL 229.1 MTU DDC TYPE 2	ACEA E2 API CG-4/CF MIL-L-2104 E ALLISON C-4 CASE MS 1120 MACK EO-L MAN 271 NH 330G STEYR A-202 VOLVO VDS VW 501 01/505 00

TITAN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Commercial Vehicles				
TITAN CARGO MAXX SAE 5W-30 	Premium MAXX Performance Engine Oil with new XTL®-Technology. Specially developed for vehicles with modern exhaust after treatment and turbocharger. Optimum cold starting properties and ageing stability for extreme fuel-economy over the whole drain-interval.	ACEA E9/E7/E6/E4 API CJ-4 CAT ECF-3 SCANIA LA	DEUTZ DQC IV-10 LA DETROIT DIESEL 93K218 MACK EO-O PREMIUM PLUS MAN M 3271-1 MAN M 3477 MAN M 3575 MAN M 3677 MB-APPROVAL 228.31 MB-APPROVAL 228.51 MTU DDC TYPE 2.1 MTU DDC TYPE 3.1 RENAULT RLD-3 SCANIA LDF-4 VOLVO VDS-4	CUMMINS CES 20081 IVECO 18-1804 CLASSE TLS E6
TITAN CARGO MAXX SAE 10W-40 	Premium MAXX Performance Engine Oil with new XTL®-Technology. Specially developed for vehicles with modern exhaust after treatment and turbocharger. Good cold starting properties and ageing stability for fuel-economy over the whole drain-interval.	ACEA E9/E7/E6/E4 API CJ-4 JASO DH-2 CAT ECF-3	DETROIT DIESEL 93K218 DEUTZ DQC IV-10 LA MACK EO-O PREMIUM PLUS MAN M 3271-1 MAN M 3477 MAN M 3575 MB-APPROVAL 228.31 MB-APPROVAL 228.51 MTU DDC TYPE 2.1 MTU DDC TYPE 3.1 RENAULT RLD-3 SCANIA LA VOLVO VDS-4	CUMMINS CES 20081 IVECO 18-1804 CLASSE TLS E9 IVECO 18-1809 CLASSE NG2 VOITH-RETARDER „B”

Engine Oils

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Commercial Vehicles				
TITAN CARGO SL SAE 5W-30	Ultra High Performance, extreme fuel-economy engine oil for a variety of commercial vehicle diesel engines, with optimum cold starting and lower oil consumption. Specially developed for extended service intervals.	ACEA E7/E4 FORD WSS-M2C212-A1	DEUTZ DQC IV-10 MACK EO-N MAN M 3277 MB-APPROVAL 228.5 MB-APPROVAL 235.28 MTU DDC TYPE 3 RENAULT RXD/RLD-2 SCANIA LDF-3 VOITH-RETARDER „B“ VOLVO VDS-3	CUMMINS CES 20077 IVECO 18-1804 CLASSE TFE SCANIA LDF-2
TITAN CARGO LA SAE 5W-30	Ultra High Performance, extreme fuel-economy engine oil, specially developed for commercial vehicles with modern exhaust after treatment systems and turbocharger. Offers good cold starting and lower oil consumption.	ACEA E7/E6 API CI-4 JASO DH-2	DEUTZ DQC III-10 LA MACK EO-N MAN M 3271-1 MAN M 3477 MB-APPROVAL 228.51 MTU DDC TYPE 3.1 RENAULT RLD-2/RXD/RGD VOLVO VDS-3	CUMMINS CES 20076/7/8
TITAN CARGO LA SAE 10W-40	Ultra High Performance, fuel-economy engine oil, specially developed for commercial vehicles with modern exhaust after treatment systems and turbocharger. Offers good cold starting and lower oil consumption.	ACEA E9/E7/E6 API CI-4 JASO DH-2	DEUTZ DQC IV-10 LA MACK EO-N MAN M 3271-1 MAN M 3477 MB-APPROVAL 228.51 MTU DDC TYPE 3.1 RENAULT RLD-2/RXD/RGD VOLVO VDS-3	CUMMINS CES 20076/7
TITAN CARGO 228.61 SAE 5W-30 NEW	Ultra High Performance, extreme fuel-economy engine oil. Specially developed for Mercedes Benz commercial vehicles with modern exhaust after treatment systems. Suitable for Euro VI engines. Offers good cold starting and lower oil consumption.	API FA-4	MB-APPROVAL 228.61	CUMMINS CES 20087 DETROIT DIESEL 93K223
TITAN CARGO LD4 SAE 5W-30 NEW	Ultra High Performance, fuel-economy engine oil for use in Scania Euro VI vehicles. Specially developed for extended service intervals.	SCANIA LDF-4	–	–
TITAN CARGO LD3 SAE 10W-40	Ultra High Performance, fuel-economy engine oil for use in Scania Euro VI vehicles. Specially developed for extended service intervals.	ACEA E7/E4	MACK EO-N MAN M 3277 MB-APPROVAL 228.5 RENAULT RLD-2 SCANIA LDF-3 VOLVO VDS-3	API CF
TITAN CARGO MC SAE 10W-40	Ultra High Performance, fuel-economy engine 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 GLOBAL DHD-1	CUMMINS CES 20077/8 DETROIT DIESEL 93K215 DEUTZ DQC III-10 MACK EO-M PLUS MACK EO-N MAN M 3277 MB-APPROVAL 228.5 MTU DDC TYPE 3 RENAULT RXD/RLD-2 SCANIA LDF-2 VOLVO VDS-3	IVECO 18-1804 SDFG OM-1901A



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils for Commercial Vehicles				
TITAN CARGO SAE 5W-40	Ultra High Performance, fuel-economy engine oil, specially developed for commercial vehicle diesel engines with extended service intervals, exhaust after treatment and turbocharger.	ACEA E9/E7 API CJ-4 CAT ECF-2/ECF-3	DETROIT DIESEL 93K218 DEUTZ DQC II-10 LA FAWDE Q/XC 3135-2007 MACK EO-O PREMIUM PLUS MAN M 3575 MB-APPROVAL 228.31 RENAULT RLD-3 VOLVO VDS-4	CUMMINS CES 20081 DETROIT DIESEL 93K214/93K215
TITAN CARGO SAE 10W-30	Ultra High Performance, fuel-economy engine oil, specially developed for commercial vehicle diesel engines with extended service intervals, exhaust after treatment and turbocharger.	ACEA E9 API CJ-4/SN CAT ECF-1-a/ ECF-2/ ECF-3 JASO DH-2	DEUTZ DQC III-10 LA MACK EO-O PREMIUM PLUS MAN M 3575 MB-APPROVAL 228.31 MTU DDC TYPE 2.1 RENAULT RLD-3 VOLVO VDS-4	CUMMINS CES 20081
TITAN CARGO SAE 15W-40	Ultra High Performance, fuel-economy engine oil for a variety of commercial vehicle diesel engines. Specially developed for Volvo with extended service intervals, exhaust after treatment and turbocharger.	ACEA E9 API CJ-4/CI-4 PLUS/ CI-4/SM CAT ECF-2/ECF-3 JASO DH-2	CUMMINS CES 20081 DEUTZ DQC III-10 LA DETROIT DIESEL 93K218 MACK EO-O PREMIUM PLUS MAN M 3575 MB-APPROVAL 228.31 MTU DDC TYPE 2.1 RENAULT RLD-3 VOLVO VDS-4	ALLISON C-4
TITAN TRUCK PLUS SAE 15W-40	Super High Performance Engine Oil for a variety of diesel and gasoline engines. Specially for highly-loaded commercial vehicle diesel engines. Lower oil consumption.	ACEA E7 API CI-4/SL GLOBAL DHD-1 CAT ECF-1-a/ECF-2	CUMMINS CES 20076/7/8 DETROIT DIESEL 93K215 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	ALLISON C-4 CAT TO-2 CASE MS 1121 CUMMINS CES 20071/2 IVECO 18-1804 CLASSE T2 E7 NH 330H
TITAN TRUCK PLUS SAE 20W-50 NEW	Super High Performance Engine Oil for a variety of diesel and gasoline engines. Specially for highly-loaded commercial vehicle diesel engines. Lower oil consumption.	ACEA E7 API CI-4/SL GLOBAL DHD-1 CAT ECF-1-a/ECF-2	MB-APPROVAL 228.3	MAN M 3275-1
Engine Oil for Commercial Vehicles with Gas Engines				
TITAN CARGO PRO GAS SAE 10W-40	Premium Performance, extreme fuel-economy engine oil for highly-supercharged commercial vehicle gas engines as well as diesel engines with exhaust gas after treatment systems. Specially developed for gas powered engines with and without turbocharger. Optimum cold starting, lower oil consumption and minimized exhaust emissions. For MAN gas engines extended drain intervals are possible depending on engine type.	ACEA E9/E7/E6	DEUTZ DQC IV-10 LA MACK EO-N MAN M 3271-3 MAN M 3477 MB-APPROVAL 228.51 RENAULT RLD-2 VOLVO VDS-3	—

Engine Oils

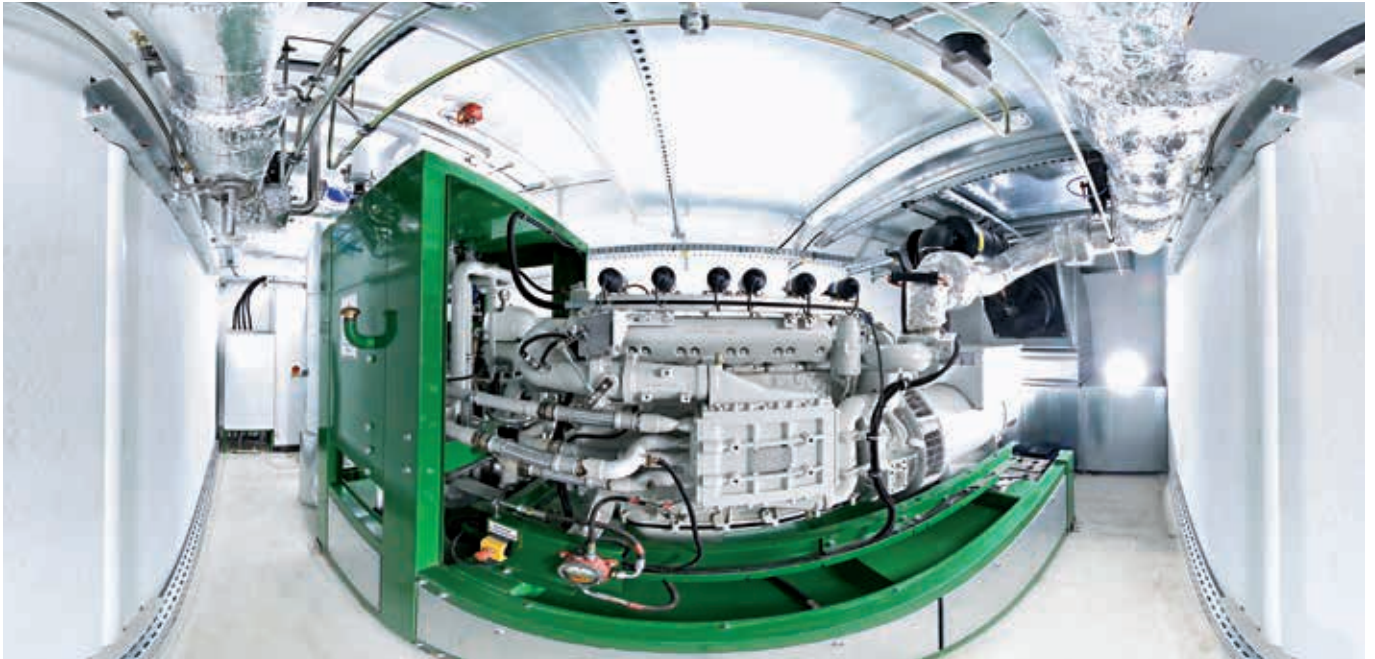


Product name	Description	Specifications	Approvals	FUCHS Recommendations
Railroad Engine Oil				
TITAN RAILGEN 13 SAE 40	High Performance Rail Locomotive Monograde Engine Oil according to API CF utilizing zinc- and chlorine-free additive technology.	—	GE Generation 4LL GM - EMD GENERATION 5	API CD/CF LMOA GENERATION 5 CATERPILLAR 3600
Monograde Engine Oils				
TITAN UNIVERSAL HD SAE 10W	High Performance Monograde Engine Oil for gasoline and diesel engines. Specially developed for off-road vehicles. Depending upon manufacturer regulation also in other aggregates applicable.	—	MAN 270 ZF TE-ML 03B (ZF002013)	ACEA E2 API CF-4/SG MIL-L-2104 D ALLISON C-4 CAT TO-2 MB 228.0 ZF TE-ML 02C
TITAN UNIVERSAL HD SAE 20W-20	High Performance Monograde Engine Oil for gasoline and diesel engines. Specially developed for off-road vehicles. Depending upon manufacturer regulation also in other aggregates applicable.	—	MB-APPROVAL 235.27 VOITH-RETARDER „A“	ACEA E2 API CF-4/SG MIL-L-2104 D ALLISON C-4 CAT TO-2 MAN 270 MB 228.0 ZF TE-ML 02C
TITAN UNIVERSAL HD SAE 30	High Performance Monograde Engine Oil for gasoline and diesel engines. Specially developed for off-road vehicles. Depending upon manufacturer regulation also in other aggregates applicable.	—	DEUTZ DQC I-02 MTU DDC TYPE 2 ZF TE-ML 04B (ZF001189)	ACEA E2 API CF-4/SG MIL-L-2104 D ALLISON C-4 CAT TO-2 MAN 270 MB 228.2 ZF TE-ML 02C



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Monograde Engine Oils				
TITAN UNIVERSAL HD SAE 40	High Performance Monograde Engine Oil for gasoline and diesel engines. Specially developed for off-road vehicles. Depending upon manufacturer regulation also in other aggregates applicable.	—	DEUTZ DQC I-02 MB-APPROVAL 235.12 MTU DDC TYPE 2 ZF TE-ML 04B (ZF001190)	ACEA E2 API CF-2/CF-4/SG MIL-L-2104 D ALLISON C-4 CAT TO-2 MAN 270 MB 228.2 ZF TE-ML 02C
TITAN UNIVERSAL HD SAE 50	High Performance Monograde Engine Oil for gasoline and diesel engines. Specially developed for off-road vehicles. Depending upon manufacturer regulation also in other aggregates applicable.	—	DEUTZ DQC I-02 MAN M 3275-2	ACEA E2 API CF-4/SG MIL-L-2104 D ALLISON C-4 CAT TO-2 MB 228.0 ZF TE-ML 02C
TITAN UNIVERSAL HD SAE 30 MTU	High Performance dedicated break in engine oil for MTU diesel and gas engines, developed to improve operating characteristics with enhanced corrosion protection.	—	MTU DDC TYPE 1	—

Engine Oils



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Gas Engine Oils for Stationary Gas Engines				
TITAN GANYMET ULTRA	Premium Performance Engine Oil, zinc-free, for stationary gas engines.	–	2G TA-003 agenitor series 2,3 AGROGEN CAT CG132, CG170, CG260 CAT / MWM TR 0199-99-02105 GE JENBACHER TA 1000-1109 - A, CAT: series 2, 3, 4 (Version B), 6 (Version C, E) - B, CAT: series 2, 3 MAN M 3271-4 MTU Onsite Energy DK-BS-0001 (E, P, B) MTU Onsite Energy DK-BS-0002 (B) SEVA TRS-07 SPANNER RE2 TEDOM 61-0-0281.1/L, B, S	–
TITAN GANYMET PLUS	Super High Performance Engine Oil, zinc-free, for stationary gas engines.	–	CAT CG132, CG170, CG260 CAT / MWM TR 0199-99-02105 DREYER & BOSSE GE JENBACHER TA 1000-1109 - B: series 2, 3 MTU Onsite Energy DK-BS-0001 (B) SEVA TRS-07	–
TITAN GANYMET PLUS LA	„Low Ash“ Super High Performance Engine Oil, zinc-free, for stationary gas engines.	–	CAT CG132, CG170, CG260 CAT / MWM TR 0199-99-02105 DEUTZ TR 0199-99-01213 SEVA TRS-07 TEDOM 61-0-0281.1/G, P	CATERPILLAR CUMMINS WAUKESHA
TITAN GANYMET PRO MA	High Performance Engine Oil for stationary gas engines.	–	GE JENBACHER TA 1000-1109 - B, C: series 2, 3, 4 (Version B), 6 (Version C, E) MAN M 3271-4	CATERPILLAR (special gas)
TITAN GANYMET PRO LA	High Performance Engine Oil with low sulphated ash content for stationary gas engines.	–	CAT CG132, CG170, CG260 CAT / MWM TR 0199-99-02105 GE JENBACHER TA 1000-1109 - A, B: series 2, 3, 4 (Version B), 6 (Version C, E)	CATERPILLAR CUMMINS WAUKESHA WÄRTSILÄ



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Gas Engine Oils for Stationary Gas Engines				
TITAN GANYMET	High Performance Engine Oil for stationary gas engines.	–	ASJA AMBIENTE ITALIA GE JENBACHER TA 1000-1109 - C: series 2, 3 MAN M 3271-4 MTU Onsite Energy DK-BS-0001 (B,K) SEVA TRS-07	–
TITAN GANYMET LA	High Performance Engine Oil with low sulphated ash content for stationary gas engines.	–	CAT CG132, CG170, CG260 CAT / MWM TR 0199-99-02105 DEUTZ TR 0199-99-01213 GE JENBACHER TA 1000-1109 - A, CAT: series 2, 3, 4 (Version B), 6 (Version C, E) MAN M 3271-2 MTU Onsite Energy DK-BS-0001 (E, P, K) SEVA TRS-07	CATERPILLAR CUMMINS WAUKESHA

Engine Oils

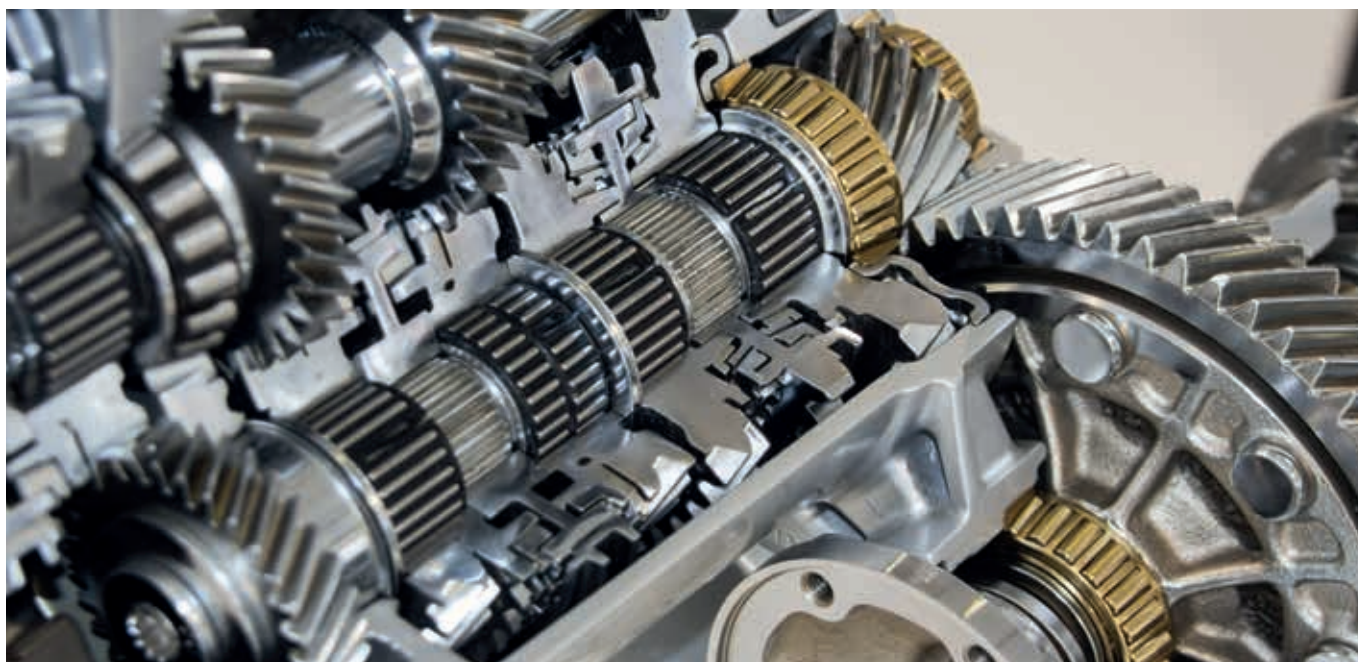


Product name	Description	Specifications	Approvals	FUCHS Recommendations
Four-stroke Marine Engine Oil				
TITAN MARINE FC-W SAE 10W-30	Super High Performance Engine Oil for marine leisure four-stroke gasoline engines, in accordance with the latest requirements of NMMA.	—	NMMA FC-W	BOMBARDIER EVINRUDE HONDA JOHNSON MERCURY SEADOO SUZUKI YAMAHA
Two-stroke Marine Engine Oil				
TITAN MARINE TC-W 3	Ultra High Performance Engine Oil for marine leisure two-stroke engines, in accordance with the latest requirements of NMMA.	—	NMMA TC-W3	BOMBARDIER EVINRUDE JOHNSON KAWASAKI MARINER MERCURY SEADOO SUZUKI TOHATSU YAMAHA

TITAN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Two-stroke Engine Oils				
TITAN 2T 100S	Ultra High Performance two-stroke engine oil for Autolube and Premix systems formulated with fully synthetic base oils. Product dyeing: blue.	API TC JASO FD ISO L-EGD	–	TISI
TITAN 2T S	Super High Performance two-stroke engine oil. Mixes rapidly. Suitable for Autolube as well as Premix systems. Product dyeing: blue.	API TC JASO FC ISO L-EGC	–	–
TITAN 2T M	High Performance two-stroke engine oil. Mixes rapidly. Suitable for Autolube as well as Premix systems. Product dyeing: blue.	API TC	–	–

Transmission Fluids



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Gear Oils for Passenger Cars				
TITAN SINTOFLUID FE SAE 75W	Premium Performance Manual Transmission Fluid offering increased gearbox efficiency in passenger cars due to low viscosity level. Reduces fuel consumption and offers best properties at low temperature. Suitable as fill for life fluid according to manufacturer.	API GL-4	–	VW TL 521 71 (G 052 171 A1/A2) VW TL 521 78 (G 052 178 A2) VW TL 525 12 (G 052 512 A2) VW TL 525 27 (G 052 527 A2) VW TL 726 (G 052 726 A2/G 055 726 A2/ G 060 726 A2/G 070 726 A2)
TITAN SINTOFLUID SAE 75W-80	Premium Performance Manual Transmission Fluid for passenger cars. Offering good gearbox efficiency. Suitable as fill for life fluid according to manufacturer.	API GL-5	–	MIL-L-2105 D BMW 83 22 0 309 031 BMW 83 22 0 403 247 BMW 83 22 7 533 818 BMW 2300 1434 404 BMW 2300 7533 513 BMW 2300 7533 818 FORD WSS-M2C200-C3 OPEL 19 40 182 OPEL 19 40 757 OPEL 19 40 768 OPEL 19 40 776 VOLVO 97308 VW 501 50 (G 005 000 05/G 005 000/ G 005 000 20/G 052 911 A1/A2)
TITAN SINTOPOID FE SAE 75W-85 XTL[®] <small>TECHNOLOGY</small>	Premium Performance fuel-economy passenger car axle fluid offering increased gearbox efficiency in passenger cars due to low viscosity level. Reduces fuel consumption and offers best properties at low temperature. Suitable as fill for life fluid according to manufacturer.	API GL-5	MB-APPROVAL 235.7 MB-APPROVAL 235.74 ZF TE-ML 18 (ZF002195)	MB 239.71 MB 239.72 VW TL 521 45-X (G 052 145 A1) VW TL 521 90 (G 052 190 A2/ G 055 190 A2)



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Gear Oils for Passenger Cars				
TITAN SINTOPOID SAE 75W-90	Premium Performance Axle Gear Oil for passenger cars, also for high-offset hypoid drives offering good gearbox efficiency. Suitable as fill for life fluid according to manufacturer.	API GL-5	–	MIL-L-2105 D VW TL 521 45-Y (G 052 145 A2)
TITAN SINTOPOID LS SAE 75W-90	Premium Performance, fully-synthetic multifunctional gear oil, formulated with fully-synthetic base oils. Suitable for axles and transfer gear boxes with or without self-locking differentials and also as trouble shooter for conventional manual transmissions.	API GL-4/-5/-5 incl. LS	–	FORD WSS-M2C200-C/ C2 VW G50/G51
TITAN SINTOPOID LS SAE 75W-140	Premium Performance Gear Oil for axle and transfer gear boxes, formulated with fully-synthetic base oils. Suitable for axle and transfer gear boxes with and without limited slip differential.	API GL-5	–	BMW 83 22 2 282 583 BMW 83 22 9 407 870 CHRYSLER MS-8985 FORD WSL-M2C192-A GM 12346140 JOHN DEERE JDM J11G SCANIA STO 1:0
Gear Oils for Passenger Cars and Commercial Vehicles				
TITAN SUPERGEAR MC SAE 80W-90	Super High Performance Gear Oil based on MC-Synthesis for extended oil change intervals.	API GL-4/GL-5 SCANIA STO 1:0	MAN 341 TYPE Z2 MAN 342 TYPE M2 MB-APPROVAL 235.0 ZF TE-ML 02B, 05A, 12L, 12M, 16B, 17H, 19B, 21A (ZF000722)	CASE MS 1316 FORD WSP-M2C197-A JOHN DEERE JDM J11E MAN M 3343 TYPE M MAN 341 TYPE E2 NH 520A SDFG OP 1705 STEYR B-101 VOLVO 97310 ZF TE-ML 07, 08
TITAN SUPERGEAR MC SAE 80W-140	Super High Performance Gear Oil based on MC-Synthesis for extended oil change intervals.	API GL-4/GL-5 SCANIA STO 1:0	–	JOHN DEERE JDM J11E OPEL 19 42 386 RENAULT VI VOLVO 97310 ZF TE-ML 08
TITAN SUPERGEAR SAE 80W-90	High Performance Gear Oil for extended oil change intervals.	API GL-4/GL-5	MAN 342 TYPE M2 ZF TE-ML 05A, 12E, 17B, 19B, 21A (ZF000647)	MIL-L-2105 D VOLVO 97310 NH 520A STEYR B-101
TITAN SUPERGEAR SAE 85W-140	High Performance Gear Oil for extended oil change intervals.	API GL-4/GL-5	ZF TE-ML 05A, 12E, 16D, 21A (ZF000650)	MIL-L-2105 D VOLVO 97310
TITAN GEAR LS SAE 90	High Performance LS (Limited Slip) hypoid gear oil for axles with or without limited slip differentials.	API GL-5 SAE J306: 85W-90	ZF TE-ML 05C, 12C, 16E, 21C (ZF000651)	MIL-L-2105 D FORD M2C104-A JOHN DEERE JDM J11F NH 520B VOLVO 97310
TITAN GEAR MP SAE 80	High Performance Gear Oil for synchronized and non-synchronized manual gear boxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.	API GL-4	MB-APPROVAL 235.1 ZF TE-ML 17A (ZF000654)	BMW 81 22 9 407 052 BMW 81 22 9 407 053 FORD M2C9008-A VW TL 726 ZF TE-ML 08
TITAN GEAR MP SAE 90	High Performance Gear Oil for synchronized and non-synchronized manual gear boxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.	API GL-4	–	MAN 341 TYPE E1, Z1 MB 235.1 ZF TE-ML 02A, 16A, 17A, 19A

Transmission Fluids

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Gear Oils for Passenger Cars and Commercial Vehicles				
TITAN GEAR HYP SAE 90	High Performance Gear Oil for highly-stressed differentials in commercial vehicles and passenger cars.	API GL-5 SAE J306: 85W-90	MB-APPROVAL 235.0 ZF TE-ML 16C, 17B, 19B, 21A (ZF000656)	FORD SR-M2C9102-A JOHN DEERE JDM J11E MAN 342 TYPE M1 OPEL 19 42 387 VOLVO 97310 VW TL 727 ZF TE-ML 07, 08
Gear Oils for Commercial Vehicles				
TITAN CYTRAC TD SAE 75W-90 <i>NEW</i>	Premium Performance Gear Oil for highly-stressed manual transmissions and hypoid axles in commercial vehicles formulated with fully-synthetic base oils. Developed for the longest oil change intervals.	API GL-4/GL-5 API MT-1 SAE J2360 SCANIA STO 1:0 SCANIA STO 2:0A FS	DETROIT DIESEL 93K219.01 MAN 341 TYPE Z2 MAN 342 TYPE M3 MAN 342 TYPE S1 MB-APPROVAL 235.8 VOLVO 97312 ZF TE-ML 02B, 05A, 12L, 12N, 16F, 17B, 19C, 21A (ZF003341)	JOHN DEERE JDM J11E JOHN DEERE JDM J11G MAN 341 TYPE E3
TITAN CYTRAC SL SAE 75W-90	Premium Performance Gear Oil for highly-stressed hypoid axles in commercial vehicles formulated with fully-synthetic base oils. Developed for the longest oil change intervals in commercial vehicle axle drives.	API GL-5 SCANIA STO 1:0	MAN 342 TYPE S1	JOHN DEERE JDM J11E JOHN DEERE JDM J11G MB 235.8 VOLVO 97312 ZF TE-ML 05B, 07, 08, 12B, 16F, 17B
TITAN CYTRAC RR SAE 75W-90	Fully synthetic Premium Performance Hypoid Gear Oil for axle drives in railcars and heavy duty vehicles.	API GL-5 API MT-1 SCANIA STO 1:0	SAE J2360 SIEMENS FLENDER Gear Units for Railway Vehicles VOITH TURBO 132.00374401 (3.325-340) VOITH TURBO 132.00374402 (3.325-342) ZF TE-ML 05A, 12L, 12N, 16F, 17B, 19C, 21A (ZF000732)	Gmeinder Getriebebau railway applications ZF TE-ML 05B, 21B
TITAN CYTRAC FE SYNTH SAE 75W-85	Premium Performance Gear Oil for gear boxes in commercial vehicles, specially for the latest version of Mercedes-Benz CO ₂ transmissions, formulated with fully-synthetic base oils. Most fuel efficient by improving gearbox efficiency. Suitable for the longest oil change intervals.	API GL-4	MB-APPROVAL 235.16	–
TITAN CYTRAC MB SYNTH SAE 75W-90	Premium Performance Gear Oil for gear boxes in commercial vehicles, specially developed for Mercedes-Benz Actros vehicles, formulated with fully-synthetic base oils. Reduces fuel consumption by improving gearbox efficiency. Suitable for the longest oil change intervals.	API GL-4	MAN 341 TYPE MB MB-APPROVAL 235.11	ZF TE-ML 08
TITAN CYTRAC ULTRA SYNTH SAE 75W-80	Premium Performance Gear Oil for gear boxes in commercial vehicles, especially developed for ZF heavy duty transmissions with and without Intarder. Reduces fuel consumption by improving gearbox efficiency. Suitable for longest oil change intervals.	API GL-4 VOLVO 97307	MAN 341 TYPE Z5 ZF TE-ML 01E, 02E, 16P (ZF001457)	–



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Gear Oils for Commercial Vehicles				
TITAN CYTRAC MAT SAE 75W-80 <i>NEW</i>	Premium Performance Gear Oil for gear boxes in commercial vehicles, specially developed for manual and automatic ZF-gear boxes, formulated with selected base oils. Reduces fuel consumption by improving gearbox efficiency. Suitable for the longest oil change intervals and compatible with Carbon-Synchronizers.	API GL-4	MAN 341 TYPE Z4 VOLVO 97307 ZF TE-ML 01L, 02L, 16K (ZF003373)	–
TITAN CYTRAC LD SAE 75W-80	Ultra High Performance Gear Oil for extended oil change intervals in commercial vehicles fitted with integral interarders or supplementary retarders.	API GL-4	EATON	MAN 341 TYPE E3 MAN 341 TYPE Z3 VOLVO 97305 ZF TE-ML 02D, 08
TITAN CYTRAC HSY SAE 75W-90	Ultra High Performance Gear Oil for commercial vehicle manual transmissions and axle drives formulated with fully-synthetic base oils.	API GL-4/GL-5	ZF TE-ML 05A, 12L, 12N, 16F, 17B, 19C, 21A (ZF000642)	MAN 341 TYPE E3 MAN 341 TYPE Z2 MAN 342 TYPE M3 MAN M 3343 TYPE S JOHN DEERE JDM J11E JOHN DEERE JDM J11G SCANIA STO 1:0 ZF TE-ML 05B, 07, 21B
TITAN GEAR HYP LD SAE 80W-90	Super High Performance Gear Oil specially developed for Mercedes-Benz commercial vehicles. Offering enhanced thermal stability and fuel-economy potential.	API GL-5 API MT-1 SAE J2360 SCANIA STO 1:0	DETROIT DIESEL 93K219.02 MAN 341 TYPE GA1 MAN 342 TYPE M3 MB-APPROVAL 235.20 ZF TE-ML 05A, 12L, 12M, 16B, 17B, 19B, 21A (ZF000645)	MIL-PRF-2105 E ARVIN MERITOR 0-76-D MACK GO-J JOHN DEERE JDM J11E ZF TE-ML 07A

Transmission Fluids

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Multifunctional Gear Oils for Construction Machinery				
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 ESN-M2C134-D JOHN DEERE JDM J20C JOHN DEERE JDM J20D KOMATSU AXO 80 (KES 07.866) KUBOTA UDT FLUID MASSEY FERGUSON CMS M 1143, 1135 VOLVO WB 102 ZF TE-ML 03E, 03F, 05F, 06K
TITAN UTTO PLUS	Ultra High Performance Multifunctional Oil for gears, axles and hydraulic systems on construction and agricultural machinery with or without wet brakes and limited slip differentials.	SAE J300: 5W-30	–	SAE J306: 75W-80 CASE MS 1207/1209/1210 FORD M2C86-C, ESN-M2C134-D JOHN DEERE JDM J20C JOHN DEERE JDM J20D JOHN DEERE JDM J14 KOMATSU KES 07.866 KUBOTA UDT FLUID MASSEY FERGUSON CMS M 1143, 1135 STEYR 397.88.0001 VOLVO WB 101
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 (ZF000661)	VOLVO WB 101 ZF TE-ML 03E
TITAN UTTO TO-4 SAE 10W	Super High Performance multifunctional lubricant for hydraulics in construction machinery.	API GL-4 CAT TO-4	ZF TE-ML 03C (ZF002186)	ALLISON C-4 KOMATSU KES 07.868.1
TITAN UTTO TO-4 SAE 30	Super High Performance multifunctional transmission lubricant for construction machinery.	API GL-4 CAT TO-4	ZF TE-ML 03C, 07F (ZF002185)	ALLISON C-4 ALLISON TES-439 KOMATSU KES 07.868.1
TITAN UTTO TO-4 SAE 50	Super High Performance multifunctional lubricant for final drives in construction machinery.	API GL-4 CAT TO-4	–	KOMATSU KES 07.868.1

TITAN, PENTOSIN


Product name	Description	Specifications	Approvals	FUCHS Recommendations
Double Clutch Transmission Fluids (DCTF)				
PENTOSIN FFL-52529 XTL[®] TECHNOLOGY	Premium Performance DCTF with XTL [®] -Technology for ultimate friction stability and best fuel-economy properties. Specially developed for the wet clutch of the DL382 (0CK) transmission of VW group.	–	VW TL 52 529-C (G 055 529)	–
PENTOSIN FFL-2	Premium Performance DCTF. Specially developed for VW Double Clutch Transmission with wet clutch.	–	JAC DTF630 VW TL 52 182 (G 052 182)	–
PENTOSIN FFL-3	Premium Performance DCTF. Specially developed for ZF/Porsche Double Clutch Transmission with wet clutch.	–	MB-APPROVAL 236.24 ZF TE-ML 11 (ZF001747)	BMW 83 22 2 167 666 (MTF-LT-5) JAGUAR LAND ROVER GX73-M1R564-AA PORSCHE 999 917 080 00
PENTOSIN FFL-4	Premium Performance DCTF. Specially developed for GETRAG/BMW Double Clutch Transmission with wet clutch.	–	GETRAG (PWA05043)	BMW 83 22 0 440 214 BMW 83 22 2 147 477 BMW 83 22 2 148 578 BMW 83 22 2 148 579 BMW 83 22 2 446 673 McLaren: MP4-12C
PENTOSIN FFL-6	Premium Performance DCTF. Specially developed for BYD Double Clutch Transmission with wet clutch.	–	BYD 6DT35 (Q/BYD-A1909.0058-2013)	–
PENTOSIN FFL-8 NEW	Premium Performance DCTF. Specially developed for ZF / Porsche Double Clutch Transmission with wet clutch. Provides optimized friction properties and best load carrying capacity even under hard conditions over the whole lifetime.	–	ZF TE-ML 11 (ZF002271)	PORSCHE 000 043 210 44 PORSCHE 971 094 307 02A

Transmission Fluids

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Double Clutch Transmission Fluids (DCTF)				
PENTOSIN FFL-10 NEW	Premium Performance DCTF. Specially developed for Mercedes-Benz-9-speed Double Clutch Transmissions with wet clutch. Provides optimum wear protection and excellent friction properties over the whole lifetime and offers best shifting performance even under hard conditions.	–	MB-APPROVAL 236.22	–
PENTOSIN FFL-RACING	Premium Performance DCTF. Specially developed for highly stressed double clutch transmissions.	–	–	NISSAN GT-R (R35)
Automatic Transmission Fluids (ATF)				
TITAN ATF 7134 FE	Premium Performance ATF with reduced viscosity, especially developed to further optimize fuel-economy and gearbox efficiency of latest generation Mercedes-Benz 7-speed automatic transmissions. Not downwards compatible with previous MB-ATF-Specifications. Product dyeing: blue.	–	MB-APPROVAL 236.15	–
TITAN ATF 6400 NEW	Premium Performance ATF with reduced viscosity specifically formulated for automatic transmissions of Japanese and American manufacturers. Licensed according to DEXRON VI and MERCON LV. Product dyeing: red.	JASO M315 TYPE 1A-LV	DEXRON VI FORD MERCON LV	AISIN WARNER/AW-1 GM 9256039/88863400 HYUNDAI SP IV JWS 3324 NISSAN MATIC S TOYOTA TYPE WS VW G 055 540 A2
TITAN ATF 6009 NEW	Premium Performance ATF, specially developed to optimize the shifting performance of latest generation ZF automatic transmissions. Product dyeing: green.	–	–	BMW 83 22 2 289 720 (ATF 3+) HONDA ATF TYPE 3.1 ZF AA01.500.001
TITAN ATF 6008 NEW	Premium Performance ATF, specially developed to optimize the shifting performance of ZF automatic transmissions. Product dyeing: green.	–	–	BMW 83 22 2 289 720 (ATF 3+) CHRYSLER 68157995AA JAGUAR 02JDE 26444 LAND ROVER LR023288 VW G 060 162 ZF S671 090 312
TITAN ATF 6006 NEW	Ultra High Performance ATF, specially developed to optimize the shifting performance of ZF automatic transmissions. Product dyeing: none.	–	–	BENTLEY PY112995PA BMW 83 22 0 142 516 HYUNDAI 040000C90SG JAGUAR FLUID 8432 LAND ROVER TYK500050 MASERATI 231603 VW G 055 005 ZF S671 090 255
TITAN ATF 6000 SL	Premium Performance ATF offering maximum performance in passenger car applications such as automatic transmissions with torque converters or wet clutches as well as power steering systems. Formulation is licensed according to DEXRON VI and downwards compatible to any former DEXRON-specification. Product dyeing: red.	–	DEXRON VI VOITH H55.6335.xx ZF TE-ML 09	BMW 81 22 9 400 272 BMW 81 22 9 400 275 BMW 81 22 9 407 738 BMW 83 22 0 397 114 BMW 83 22 0 403 248 BMW 83 22 0 403 249 BMW 83 22 0 432 807 BMW 83 22 9 407 858 BMW 83 22 9 407 859

PENTOSIN, TITAN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Automatic Transmission Fluids (ATF)				
TITAN ATF 5500	Premium Performance ATF for automatic transmission in motor vehicles. Outstanding base oil quality for optimal cold temperature properties and high ageing stability. Durable friction properties for excellent wet clutch performance. Product dyeing: none.	–	MAN 339 TYPE V1 MAN 339 TYPE V2 MAN 339 TYPE Z3 MAN 339 TYPE Z12 MB-APPROVAL 236.9 VOITH 150.014524.xx ZF TE-ML 04D, 14C, 16M, 16S , 20C (ZF001797)	DEXRON III (H) ALLISON TES 295 ALLISON TES 389 MAN 339 TYPE Z4 VOLVO 97341
TITAN ATF 5005	Premium Performance ATF for automatic transmission in motor vehicles. Outstanding base oil quality for optimal cold temperature properties and high ageing stability. Durable friction properties for excellent wet clutch performance. Product dyeing: red.	–	MAN 339 TYPE L1 MAN 339 TYPE V2 MAN 339 TYPE Z2 MB-APPROVAL 236.6 VOITH H55.6336.xx ZF TE-ML 04D, 14B, 16L, 17C (ZF000717)	DEXRON III (H) ALLISON TES 295 ALLISON TES 389 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 9 407 807 BMW 83 22 9 407 858 BMW 83 22 9 407 859 FORD MERCON V MAN 339 TYPE Z3 OPEL 19 40 707 VOLVO 97341 VW TL 521 62 (G 052 162) ZF TE-ML 02F, 11B, 14C
TITAN ATF 1	Ultra High Performance ATF especially developed for highly stressed step automatic transmissions in passenger cars as well as in commercial vehicles. Product dyeing: none.	–	VOITH 150.014524.xx ZF TE-ML 04D, 11B, 14B, 16L, 17C (ZF000734)	BMW 83 22 9 407 807 CHRYSLER MS 9602 (ATF +4) CITROËN/PEUGEOT Z 000 169756 DEXRON III JAGUAR JLM 20238 MB 236.11 PORSCHE 999.917.547.00 VW TL 521 62 (G 052 162)
TITAN ATF 4400	Ultra High Performance ATF specifically formulated for Japanese passenger cars and light commercial vehicles, as well as for several European and American manufacturers. The high torque capacity exceeds the performance of many original fluids. Product dyeing: red.	JASO M315 TYPE 1A	–	DEXRON III AISIN WARNER/AW-1 BMW MINI 83 22 0 402 413 BMW MINI 83 22 7 542 290 DAIHATSU ALUMIX ATF MULTI FIAT 9.55550-AV1/AV2/AV4 FORD MERCON FORD M2C924-A/M2C922-A1 GM 9986195 HONDA ATF Z-I HYUNDAI SP III, SP IV ISUZU BESCO ATF -II/ATF -III JATCO 3100 PL085/FWD (N402)/JF506E (K17) JWS 3309/TYP T-IV KIA SP-IV MAZDA ATF D-III/ATF M-3 MITSUBISHI SP-II-III NISSAN MATIC C/D/J/S SAAB 3309 SUBARU ATF OIL/ATF OIL SPECIAL/ATF HP SUZUKI ATF 3309/3317 TOYOTA TYPE D-2/T-I/T-II/T-III/T-IV/WVS VW G 052 990/055 025
TITAN ATF 4134	Ultra High Performance ATF, specially developed to optimise shifting performance of Mercedes automatic transmissions. Product dyeing: red.	–	MB-APPROVAL 236.14 SSANG YONG (MB-automatic transmissions)	–

Transmission Fluids



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Automatic Transmission Fluids (ATF)				
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. Product dyeing: red.	–	ALLISON C-4 ALLISON TES 389 DEXRON III (H) MAN 339 TYPE L1 MAN 339 TYPE V1 MAN 339 TYPE Z1 MB-APPROVAL 236.1 MB-APPROVAL 236.9 VOITH H55.6335.xx VOLVO 97341 ZF TE-ML 04D, 14A (ZF000728)	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 9 407 807 BMW 83 22 9 407 858 BMW 83 22 9 407 859 CAT TO-2 FORD MERCON OPEL 19 40 707; OPEL 19 40 767 VW TL 521 62 (G 052 162) ZF TE-ML 02F, 03D, 09, 11B, 17C
TITAN ATF CVT	Ultra High Performance ATF specially designed for use in many CVT-gear-boxes using push-belts or transmission chains made of steel. Product dyeing: none.	–	MB-APPROVAL 236.20 FORD WSS-M2C928-A	BMW 83 22 0 136 376 BMW 83 22 0 429 154 CHRYSLER CVTF+4 DAIHATSU AMMIX CVTF-DC/-DFE DODGE/JEEP NS-2/CVTF+4 FORD WSS-M2C933-A/MERCON C GM 19260800 GM DEX-CVT HONDA HCF-2 HYUNDAI/KIA SP-CVT1 MAZDA CVTF 3320 MITSUBISHI CVTF-J1/J4 NISSAN NS-1/NS-2/NS-3 SUBARU Lineartronic CV-30/CVTF/CVTF II/E-CVT/CVT SUZUKI TC/NS-2/CVT Green 1/CVT Green 2/CVTF 3320 TOYOTA TC/CVT FE VW TL 521 80 (G 052 180) VW TL 525 16 (G 052 516)
TITAN ATF 3353	Ultra High Performance DEXRON III-generation-ATF for automatic transmissions as well as any other ATF-applications. Developed for the MB automatic transmissions and transfer cases according manufacturer. Offers fuel-efficiency potential. Product dyeing: red.	–	MB-APPROVAL 236.12 VW TL 52533 (G 052 533)	DEXRON III BMW 83 22 9 407 765 FORD WSA-M2C195-A FORD WSS-M2C202-B FORD WSS-M2C922-A1 SSANG YONG
TITAN ATF 3000	Super High Performance DEXRON II (D) ATF for automatic transmissions in commercial vehicles, machinery and passenger cars according to manufacturer's documentation. Product dyeing: red.	–	MAN 339 TYPE L2 MAN 339 TYPE V1 MAN 339 TYPE Z1 MB-APPROVAL 236.1 VOITH H55.6335.xx ZF TE-ML 04D, 14A (ZF000720)	DEXRON II (D) ALLISON C-4 BMW 81 22 9 400 272 BMW 81 22 9 400 275 BMW 81 22 9 407 738 CAT TO-2 FORD MERCON FORD M2C185-A FORD ESP-M2C138-CJ FORD ESP-M2C166-H FORD M2C9010-A OPEL 19 40 700 OPEL 19 40 707 RENK-DOROMAT ZF TE-ML 02F, 03D, 09, 11A, 17C
TITAN ATF 10	High Performance ATF for transmissions, power steering systems and hydraulic drives which require a GM-specification TYPE A, Suffix A fluid. Product dyeing: red.	–	MB-APPROVAL 236.2	TASA MAN 339 TYPE A

Hydraulic Fluids

PENTOSIN


Product name	Description	Specifications	Approvals	FUCHS Recommendations
Central Hydraulic / Power Steering Fluids				
PENTOSIN CHF 115	Premium Performance Power Steering and Central Hydraulic Fluid with a wide application and approval profile for various manufacturers. Product dyeing: green.	FORD WSS-M2C204-A	CHRYSLER MS-11655B MAN M 3289 MB-APPROVAL 345.0 PSA S712710 ZF TE-ML 02K (ZF000832) VW TL 52 146 (G 002 000)	BENTLEY JNV862564F BMW 81 22 9 407 758 BMW 82 11 1 468 041 BMW 83 29 0 429 576 FENDT X 902 011 622 OPEL B 040 0070 PORSCHE 000 043 203 33 SAAB 3032 380 VOLVO 1161529
PENTOSIN CHF 202	Premium Performance Power Steering and Central Hydraulic Fluid with a wide application and approval profile for various manufacturers. Product dyeing: green.	FORD WSS-M2C204-A2	OPEL B 040 2012 HYUNDAI 00232-19017 VW TL 52 146.01 (G 004 000)	AUDI/VW G 004 012 PORSCHE 000 043 206 56 SAAB 93160548 VOLVO 30741424 LAND ROVER LR003401
PENTOSIN CHF 5364 B	Premium Performance Central Hydraulic Fluid approved by Mercedes-Benz for level control systems in passenger cars formulated with fully-synthetic base oils. Product dyeing: none.	—	MB-APPROVAL 344.0	—
PENTOSIN LHM+	Ultra High Performance Central Hydraulic Fluid for use in the comfort and safety area of PSA vehicles. Product dyeing: green-yellow.	—	PSA B71 2710	IVECO 18-1823 MASSEY FERGUSON NH 610A SDFG OF16115
PENTOSIN PSF	Super High Performance Power Steering Fluid approved by Mercedes-Benz for passenger cars and commercial vehicles. Product dyeing: none.	—	MB-APPROVAL 236.3	—

Lubricants for Agricultural Machinery



Product name	Description	Specifications	Approvals	FUCHS Recommendations
STOU Oils				
AGRIFARM STOU MC PRO SAE 10W-40	Ultra High Performance Multi-functional Oil (STOU/MFO) of the latest generation for agricultural vehicles.	SAE J300: SAE 10W-40	DEUTZ DQC III-10	ACEA E7(E5/E3),E4, API CI-4, API GL-3/GL-4/API GL-5 in tractors* MAN 3275 AFNOR NFE 48603 HV, ALLISON C-4 CASE MS 1207, 1209, 1210, 1230 CNH MAT 3505, 3509, 3525, 3526 DIN 51524-3: HVLP (-D) FNHA 2C-200.00, 201.00 FORD M2C48-C3, M2C86-B, M2C134-D, M2C159-B/C JOHN DEERE JDM J20C NEW HOLLAND 82009201/2/3 NH 030C, 330G, 330H, 410B, 420A, 526C MASSEY FERGUSON CMS M 1145, 1144, 1143, 1139, 1135 SAE J306: SAE 80W-90 ZF TE-ML 06A, 06B, 06C, 06F, 06L, 07B * without HOLMER
AGRIFARM STOU MC SAE 10W-30	MC-synthesis Super High Performance Multifunctional, Oil (STOU/MFO) for engines, manual gear boxes, wet brakes, hydraulics and turbo-drives in tractors and other agricultural machinery.	API GL-4 SAE J300: SAE 10W-30	DEUTZ DQC I-02 ZF TE-ML 06B, 06F, 07B (ZF000733)	AFNOR NFE 48603 HV DIN 51524-3: HVLP (-D) ACEA E3 API CG-4 ALLISON C-4 CASE MS 1207, 1209, 1210, 1230 CNH MAT 3505, 3509, 3525, 3526 FORD M2C48-C3, M2C86-B, M2C134-D, M2C159-B/C JOHN DEERE JDM J20 C NEW HOLLAND 82009201/2/3 NH 410B, 420A MASSEY FERGUSON CMS M 1145, 1144, 1143, 1139, 1135 SAE J306: SAE 75W-80 ZF TE-ML 06A, 06C

AGRIFARM

Product name	Description	Specifications	Approvals	FUCHS Recommendations
STOU Oils				
AGRIFARM STOU MC SAE 10W-40	Super High Performance Multifunctional Oil (STOU / MFO) based on MC-base-oil technology for engines, manual gear boxes, wet brakes, hydraulics and turbo-drives in tractors and other agricultural and other commercial vehicles.	API GL-4 SAE J300: SAE 10W-40	DEUTZ DQC I-02 FENDT KDM 17/2012 ZF TE-ML 06B, 06F, 07B (ZF000729)	API GL-5 in tractors* ACEA E3 API CG-4 MAN 271 AFNOR NFE 48603 HV ALLISON C-4 CASE MS 1207, 1209, 1210, 1230 CNH MAT 3505, 3509, 3525, 3526 DIN 51524-3: HVLP (-D) FORD M2C134-D, M2C159-B/C FNHA 2C-200.00, 201.00, FORD M2C48-C3, M2C-86 B JOHN DEERE JDM J20C NEW HOLLAND 82009201/2/3 NH 030C, 330G, 410B, 420A, 526C MASSEY FERGUSON CMS M 1145, 1144, 1143, 1139, 1135 SAE J306: SAE 80W-90 ZF TE-ML 06A, 06C, 06L * without HOLMER
AGRIFARM STOU SAE 15W-40	High Performance Multifunctional Oil (STOU / MFO) for engines, manual gear boxes, wet brakes, hydraulics in tractors and other agricultural equipment.	API GL-4	FENDT KDM 17/2012	ACEA E2 API CF-4 CNH MAT 3525, 3526 DIN 51524 : HLP (-D) FNHA 200.00, 201.00 FORD M2C134-D, M2C159-B/C JOHN DEERE JDM J20C MASSEY FERGUSON CMS M 1145, 1144, 1143, 1139, 1135 NEW HOLLAND 82009201/2/3 NH 420A SAE J306: 80W-90 SDFG OU 1391, OT 1891 STEYR D-401 ZF TE-ML 06A, 06B, 06C, 07B
Engine Oils				
AGRIFARM MOT X-LA SAE 10W-40	Premium Performance Engine Oil for agricultural vehicles. Universal engine oil for application in modern vehicles with exhaust after treatment as well as in older vehicles. Best engine cleanliness and outstanding wear protection.	ACEA E9/E7/E6/E4 API CJ-4/ CI-4 PLUS/ CI-4/ CH-4 CAT ECF-3	DEUTZ DQC IV-10 LA (incl. TTCD) MB-APPROVAL 228.51	CNH MAT 3521 CUMMINS CES 20081
AGRIFARM MOT SAE 10W-40	Ultra High Performance Engine Oil of the latest conception of the SAE grade 10W-40. It was developed for advanced diesel engines which made high demands on service intervals and engine cleanliness. Specially recommended for normally aspirated and turbo-charged engines.	ACEA E7 API CI-4 GLOBAL DHD-1 JASO DH-1	—	ALLISON C-4 CAT ECF-2 CUMMINS CES 20071/2/6/7/8 DAF DEUTZ DQC III MACK EO-M PLUS MAN M 3275-1 MTU DDC TYPE 2 RENAULT RLD/RLD-2 VOLVO VDS-3

Lubricants for Agricultural Machinery

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Engine Oils				
AGRIFARM MOT SAE 15W-40	Super High Performance Engine Oil for normally aspirated and turbocharged diesel engines in tractors and other machinery which make high demands on service intervals and engine cleanliness.	ACEA E7 API CI-4/SL GLOBAL DHD-1 CAT ECF-1-a/ ECF-2	DEUTZ DQC III-10 MB-APPROVAL 228.3	ALLISON C-4 CAT TO-2 CASE MS 1121 CUMMINS CES 20071/2/6/7/8 DETROIT DIESEL 93K215 IVECO 18-1804 CLASSE T2 E7 MACK EO-N MAN M 3275-1 MTU DDC TYPE 2 NH 330H RENAULT RLD/RLD-2 STEYR A-201 VOLVO VDS-3
UTTO Oils				
AGRIFARM UTTO VT	Ultra High Performance Multi-functional Oil (UTTO/MFO) for use in transmission and hydraulic systems with integrated wet brakes, clutches and differentials for agricultural and construction machinery.	API GL-4	ZF TE-ML 06B, 06D, 06N, 07B (ZF002035)	ACEA E2 API CF-4/ CG-4/SF ALLISON C-4 CAT TO-2 FORD M2C159-B/C JOHN DEERE JDM J20C JOHN DEERE JDM J27 MASSEY FERGUSON CMS M 1145 (1144, 1143, 1139, 1135) SAE J300: 10W-30; SAE J306: 80W-80 ZF TE-ML 06C, 06F, 06Q, 06R
AGRIFARM UTTO MP	Super High Performance Multi-functional Oil (UTTO/MFO) for use in transmission and hydraulic systems with integrated wet brakes, clutches and differentials for agricultural and construction machinery.	API GL-4	ZF TE-ML 03E, 05F, 06K, 17E, 21F (ZF002183)	AGCO Powerfluid 821 XL AGCO Q-186 (Whitefarm) ALLISON C-4 CASE MS 1230, 1210, 1209, 1207, 1206 CLAAS / LANDINI / SAME-Transmission CNH MAT 3505, 3506, 3509, 3525, 3526, 3540 FNHA-2-C-200.00 / -201.00 FORD M2C48-C3, ESN M2C86-B/C, M2C134-D JOHN DEERE JDM J20C KUBOTA UDT FLUID MASSEY FERGUSON CMS M 1145, 1143, 1141, 1135 NH 410B SAE J300: 10W-30; SAE J306: 75W-80 SDFG OT 1891 A VALTRA G2-08, G2-B10
AGRIFARM UTTO LN	Super High Performance Transmission Hydraulic Fluid developed as a problem-solver for tractors in which conventional UTTO oils led to noisy wet brakes.	API GL-4 SAE J300: 20W-30	—	AGCO Powerfluid 821 XL AGCO Q-186 (Whitefarm) ALLISON C-4 CASE MS 1206, 1207, 1209, 1210, 1230 CNH MAT 3505, 3506, 3509, 3525, 3526 FNHA-2-C-200.00 / -201.00 FORD M2C48C3, ESN M2C86-B/C, M2C134-D JOHN DEERE JDM J20C MASSEY FERGUSON CMS M 1141, 1135 SAE J306: 80W-85 CLAAS / LANDINI / SAME-Transmission / DEUTZ-FAHR FENDT (non Vario)

AGRIFARM, PLANTO

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Rapidly Biodegradable Lubricant				
PLANTO HYTRAC PLUS	Biodegradable Super High Performance Multifunctional Oil (UTTO) for tractor gear boxes with or without wet brakes.	SAE 10W-30 SAE 80	—	Several makes of tractors
Gear Oil				
AGRIFARM GEAR LS SAE 90	Super High Performance EP Gear Oil for axles fitted with limited-slip differentials in agricultural and other machinery.	API GL-5	—	NH 520B SDFG OP 1705LS VOLVO 97310 ZF TE-ML 05C, 12C, 16E
Milking Machine Oil				
AGRIFARM MILKING MACHINE OIL	Ultra High Performance Milking Machine Oil specially developed for use in the vacuum pumps of milking machines. It contains additives which protect against wear and corrosion and foaming. These features increase the functional reliability of such systems.	—	—	ALFA LAVAL WESTFALIA

Motorcycle Lubricants



Product name	Description	Specifications	Approvals	FUCHS Recommendations
RACE Engine Oils – For professional racers and everybody who rides at the limit				
SILKOLENE PRO 4 SAE 5W-40 XP SAE 10W-40 XP SAE 10W-50 XP SAE 15W-50 XP SAE 10W-60 XP	Premium Performance four-stroke engine oil for all high performance motorcycles with latest XP Technology.	API SM/SN	JASO MA2	–
SILKOLENE PRO KR2	Two-stroke race cart oil formulated with synthetic base oils and castor oil. Use manufacturer's recommended mixing ratios. Not miscible with other lubricants.	–	CIK-FIA	–
SILKOLENE PRO 2	Fully-synthetic two-stroke racing engine oil. Specially formulated for extreme conditions. Not miscible with conventional two-stroke oils. Only suitable for Premix systems.	–	CIK-FIA	–
SILKOLENE COMP 2 PLUS	Fully-synthetic two-stroke racing engine oil. Perfect for GP racing engines. Suitable for Premix and Autolube systems.	API TC JASO FC/FD ISO-L-EGD	–	–
RIDE Engine Oils– For the tourer and street rider				
SILKOLENE COMP 4 SAE 10W-30 XP SAE 15W-50 XP	Ultra High Performance four-stroke engine oil for all high performance motorcycles with latest XP Technology.	API SL	JASO MA2	–
SILKOLENE SUPER 4 SAE 15W-40	Four-stroke engine oil formulated with selected base oils. Specially for use in BMW motorcycles with and without wet clutches.	–	–	API SF/SG BMW Motorrad JASO MA
SILKOLENE SUPER 4 SAE 10W-40	MC-synthesis four-stroke engine oil. High-quality standard product offering excellent protection.	API SJ	JASO MA2	–

Silkolene®

Product name	Description	Specifications	Approvals	FUCHS Recommendations
RIDE Engine Oils– For the tourer and street rider				
SILKOLENE SUPER 4 SAE 20W-50	MC-synthesis four-stroke engine oil. High-quality standard product offering excellent protection.	–	JASO MA2	API SF/SG
SILKOLENE V-TWIN SAE 20W-50	Mineral four-stroke engine oil. Specially developed for Harley-Davidson and European/ Japanese Metric V-Twins.	API SL	JASO MA2	–
SILKOLENE COMP 2	Synthetic two-stroke engine oil. Reliable protection against seizures, ring sticking and coking. Suitable for Premix and Autolube systems.	API TC JASO FC/FD ISO-L-EGD	–	–
SCOOT Engine Oils – The name says it all				
SILKOLENE SCOOT SPORT 2	Synthetic two-stroke engine oil for highly-stressed scooter engines. Suitable for Premix and Autolube systems.	API TC JASO FC/FD ISO-L-EGD	–	–
SILKOLENE SCOOT 2	MC-synthesis two-stroke engine oil for scooters and mopeds. Suitable for Premix and Autolube systems.	API TC JASO FC	–	–
MAINTAIN – Maintenance and protection for your bike				
SILKOLENE PRO SRG 75	Fully-synthetic, ester-based racing gear oil. Excellent protection against wear and easy shifting even at extreme temperatures.	–	–	–
SILKOLENE COMP GEAR OIL SAE 80W-90	Synthetic, high performance, ester-based gear oil. Particularly recommended when the gearbox contains aluminium components.	API GL-4/GL-3	–	–
SILKOLENE MAG COOL	Ready to use, powerful engine coolant for all year round use. Anti-cavitation performance exceeds that of conventional ethylene glycol based anti-freezes, providing the user with superior protection against engine and coolant pump damage due to this phenomenon.	–	–	–
SILKOLENE RSF 2.5 / 5 / 7.5 / 10 / 15	Fully-synthetic shock-absorber fluids and special fork oils with a high viscosity index in different viscosity ranges. Specially developed for racing.	–	–	–
SILKOLENE FOAM FILTER CLEANER	Special water-soluble cleaner used to wash foam filter elements.	–	–	–
SILKOLENE PRO CHAIN	Fully-synthetic racing chain lube spray for high performance road, racing and motocross applications. For all chains with or without O-rings.	–	–	–
SILKOLENE TITANIUM DRI GEL	Advanced chain lubricating gel: Effectively resists fling-off and appears whitish when applied.	–	–	–
SILKOLENE CHAIN LUBE	Synthetic chain lube spray for optimum wear and rust protection. For all motorcycle chains with or without O-rings.	–	–	–
SILKOLENE PRO PREP	Special conditioning spray for plastics and painted surfaces restores the „brand-new“ look.	–	–	–

Motorcycle Lubricants

Silkolene®

Product name	Description	Specifications	Approvals	FUCHS Recommendations
MAINTAIN – Maintenance and protection for your bike				
SILKOLENE ALL-IN-ONE	Multipurpose maintenance spray with a multitude of uses: SILKOLENE ALL-IN-ONE can be used to dry out damp ignitions or free rusted fasteners. It has excellent dewatering properties, repels moisture, penetrates corroded threads, lubricates and even offers protection against corrosion.	–	–	–
SILKOLENE BRAKE & CHAIN CLEANER	Highly effective cleaner for brakes and drive chains. Effectively removes caked residue.	–	–	–

Service Products

MAINTAIN



Product name	Description	Specifications	Approvals	FUCHS Recommendations
Antifreezes				
MAINTAIN FRICOFIN LL	Premium Performance Coolant Additive based on monoethylene glycol. Free from nitrite, amine, phosphate and silicates. Product dyeing: orange.	ASTM D 3306 TYPE I ASTM D 6210 TYPE I-FF BS 6580:2010 SAE J814 FORD WSS-M97-B44-D JAGUAR LAND ROVER STJLR.651.5003 FVV Heft R443 KSM 2142 UNE 26-361-88/1	Bez.Reg.Arnsbg. E62.12.22.64-2011-1 CAT / MWM TR 0199-99-2091 DAF 74002 DEUTZ DQC CB-14 MAN 324 TYPE SNF MB-APPROVAL 325.3	AFNOR NFR 15-601 TYPE I AS/NZS 2108:2004 TYPE A ASTM D 4985 SAE J1034 ADE (ATLANTIS DIESEL ENGINES) BAIC GROUP FOTON Q-FPT 2313005-2013 CATERPILLAR MAK A4.05.09.01 CHRYSLER MS 12106 CNH MAT 3624 CUMMINS (ISBe engines at DAF and Leyland) CUMMINS CES 14603, CES 14439 DETROIT DIESEL 93K217 FIAT 9.55523 GM GMW 3420 (6277M) HYUNDAI MS 591-08 JASO M325 JIS K2234 JOHN DEERE JDM H5 KOMATSU AF-NAC (ready mix) (07.892 (2009)) LIEBHERR MD 1-36-130 MACK 014 GS 17009 MAZDA MEZ MN 121 D PSA B 71 5110 RENAULT 41-01-001/- -S Type D SAAB B 040 1065 SKODA 61-0-0257 TOYOTA TSK 2601G-8A VAUXHALL GME L1301 VW TL 774-D/F (G12+ / different colour) VOLVO COOLANT VCS (STD 418-0001)

Service Products

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Antifreezes				
MAINTAIN FRICOFIN V	Ultra High Performance Coolant Additive based on monoethylene glycol. Free of nitrites, amines and phosphates. Product dyeing: pink-violet.	ASTM D 3306 TYPE I BS 6580:2010	VW TL 774-J (G13)	–
MAINTAIN FRICOFIN DP	Ultra High Performance Coolant Additive based on monoethylene glycol. Free from nitrite, amine and phosphate. Product dyeing: pink-violet.	AFNOR NF R 15-601 TYPE 1 AS/NZS 2108:2004 TYPE A ASTM D 3306 TYPE I ASTM D 4985 BS 6580:2010 SAE J814 CUMMINS CES 14603	DEUTZ DQC CC-14 MAN 324 TYPE Si-OAT MB-APPROVAL 325.5 MB-APPROVAL 325.6	DETROIT DIESEL 93K217 SCANIA TB 1451 VW TL 774-G (G12++)
MAINTAIN FRICOFIN DP -35	Ultra High Performance Coolant Ready-Mix based on monoethylene glycol. Offers frost protection down to -35°C. Free from nitrite, amine and phosphate. Product dyeing: pink-violet	AFNOR NF R 15-601 TYPE 3 ASTM D 3306 TYPE III ASTM D 5345 BS 6580:2010 SAE J814 CUMMINS CES 14603	DEUTZ DQC CC-14 MB-APPROVAL 326.5 MB-APPROVAL 326.6	DETROIT DIESEL 93K217 MAN 324 TYPE Si-OAT SCANIA TB 1451 VW TL 774-G (G12++)
MAINTAIN FRICOFIN HDD	Ultra High Performance Engine Coolant concentrate based on monoethylene glycol. Free of amines and phosphates with low silicate technology. Product dyeing: yellow.	ASTM D 3306 TYPE I ASTM D 4985 ASTM D 6210 TYPE I-FF ASTM D 7583 AS/NZS 2108:2004 TYPE A BS 6580:2010 SAE J814 CHRYSLER MS 7170 CHRYSLER MS 9769 DETROIT DIESEL 7SE298 FORD ESE-M97B44-A FORD ESE-M97B18-C FORD WSS M97B51-A1 GM 1825M & GM 1899M JIS K2234 MACK 014GS17004	MTU MTL 5048	CASE MS 1710 CAT EC-1 CUMMINS CES 14603 DETROIT DIESEL 93K217 (NOAT) FREIGHTLINER 48-2288D IVECO 18-1830 KENWORTH R026-170-97 MAN 324 TYPE N NEW HOLLAND WSN-M97B18-D PACCAR CS 0185 TOYOTA Motor Corp. RP 329
MAINTAIN FRICOFIN	Super High Performance Coolant Additive based on monoethylene glycol. Free from nitrite, amine and phosphate. Product dyeing: blue-green.	AFNOR NF R 15-601 TYPE 1 AS/NZS 2108:2004 TYPE A ASTM D 3306 TYPE I ASTM D 4985 BS 6580:2010 CUNA NC 956-16 SAE J814 SAE J1034	BMW GS 94000 (BMW N 600 69.0) CAT / MWM TR 0199-99-2091 DEUTZ DQC CA-14 GE JENBACHER TA 1000-0201 MAN 324 TYPE NF MAN 324 TYPE NF PRITARDER MB-APPROVAL 325.0 MTU MTL 5048 PN-C 40007:2000 VOITH TURBO 172.00225010	DAF 74001 LIEBHERR TLV 035/TLV 23009 A OPEL/GM B 040 0240 VW TL 774-C (G11)

MAINTAIN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Antifreezes				
MAINTAIN FRICOFIN -35	Super High Performance Coolant Ready-Mix based on monoethylene glycol. Offers frost protection down to -35 °C. Free from nitrite, amine and phosphate. Product dyeing: blue-green.	AFNOR NF R 15-601 TYPE 3 ASTM D 3306 TYPE III ASTM D 5345 BS 6580:2010 SAE J814	DEUTZ DQC CA-14 MB-APPROVAL 326.0	BMW GS 94000 (BMW N 600 69.0) DAF 74001 JENBACHER TA 1000-0201 LIEBHERR TLV 035/TLV 23009 A MAN 324 TYPE NF MAN 324 TYPE NF PRITARDER MTU MTL5048 CAT / MWM TR 0199-99-2091 OPEL/GM B 040 0240 PN-C 40007:2000 VOITH TURBO 172.00225010 VW TL 774-C (G11)
MAINTAIN FRICOFIN S	High Performance Coolant Additive based on monoethylene glycol. Free from nitrite, amine and phosphate. Product dyeing: light green.	ASTM D 3306 TYPE I BS 6580:2010	—	—
Brake Fluids				
MAINTAIN DOT 5.1	Ultra High Performance Brake Fluid for hydraulic brake systems and clutch actuation in passenger cars, trucks and motorcycles.	FMVSS NR. 116 DOT 5.1 ISO 4925 CLASS 3/4/5.1 SAE J 1703/J 1704	—	—
MAINTAIN DOT 4	Super 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 800A OPEL 19 42 421
Fuel Additives				
MAINTAIN DIESEL EFFECT	Super High Performance Fuel Additive improving diesel fuel properties for singular as well as constant treatment.	—	—	—
MAINTAIN GASOLINE PLUS	Super High Performance Fuel Additive designed to clean the entire fuel system of gasoline engines. Recommended for constant use.	—	—	—
MAINTAIN WINTERFIT	Super High Performance Diesel Fuel and Heating Oil Additive to prevent waxing and plugging at low temperatures.	—	—	—
Oil Binder				
MAINTAIN ABSORPEX	Oil Binder Type III R, Chemical Binder	Reported by Hygiene Institut Gelsenkirchen MPL	—	—

Specialities



Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Multigrade Hydraulic Oils								
TITAN HYD MR 530 MC	Ultra High Performance multigrade hydraulic oil for working machines (construction machines) as well as other automotive passenger car applications. Fulfils and surpasses the requirements on hydraulic oils HVLPD acc. to DIN 51524-3 (except: detergent / dispersant) HVLPD covers SAE 5W until 30 resp. ISO VG 32 until 68 (100).	864	234	46	8.3	154	-48	For application in working machines (construction machines) as well as other automotive vehicles.
TITAN HYD 1030	Super High Performance multigrade hydraulic oil for hydraulic systems in vehicles and working machines. Fulfils and surpasses the requirements on hydraulic oils HVLP acc. to DIN 51524-3 resp. HV acc. to ISO 11158.	885	240	100	11.8	107	-24	For application in hydraulic systems in vehicles and working machines. Approved for Denison HF0. Recommended for CASE MS 1216.

TITAN, RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Hydraulic and Industrial Gear Oils								
RENOLIN XtremeTemp 46	Universal, high performance hydraulic oil with high viscosity index and increased shear stability (VI 180). Based on special hydrogenated base oils, very good ageing behaviour, long lifetime, excellent corrosion protection and very good wear protection, fulfils and surpasses DIN 51524-3: HVLP ISO 6743-4: HV ISO 11158: HV zinc-containing AW/EP additive system	853	230	48	9.3	180	-34	Universal high performance multigrade hydraulic oil for stationary and mobile hydraulic systems, improvement of efficiency. Allows oil drain intervals to be extended. Energy and fuel saving through high efficiency. Denison HF0, HF1, HF2 Bosch Rexroth RD90235/ RDE90245
RENOLIN XtremeTemp 46 Plus	As RENOLIN XtremeTemp, but with additives which help to avoid stick-slip phenomena. For high-pressure applications; helps to reduce friction under mixed friction conditions DIN 51524-3: HVLP(D) ISO 6743-4: HV	855	234	48	9.3	181	-34	Slightly detergent, multigrade hydraulic oil for stationary and mobile hydraulic systems if the use of HVLPD fluids acc. to DIN 51524-3, with wide temperature application range and excellent shear stability, is recommended. Helps to avoid stick-slip problems, especially at low speed and high load. Energy and fuel saving through high efficiency.
RENOLIN UNISYN XT 220	Fully-synthetic industrial gear oils based on new, innovative polyalphaolefins with very high, natural, shear stable viscosity index and excellent low temperature behaviour. Excellent wear protection, high micropitting resistance. RENOLIN UNISYN XT oils exceed the requirements on industrial gear oils CLP-HC acc. to DIN 51517-3, ISO 6743-6, ISO 12925-1: CKC, CKD, CKE and AGMA 9005/E02: EP.	860	242	220	29.4	174	-42	For the use in applications with high requirements on wide temperature range.
RENOLIN UNISYN XT 320		860	242	320	40.2	179	-42	Approved by leading gearbox manufacturers.
RENOLIN UNISYN XT 460		860	242	460	54.4	188	-39	Based on PAO

Specialities


RENISO

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Refrigeration Oils								
RENISO PAG 46	Synthetic refrigeration oils based on special polyalkylene glycols (PAG) for automotive air conditioning units with R134a. NH ₃ – partly miscible refrigeration oils. Also suitable for hydrocarbon applications. DIN 51503: KAB, KD, KE.	992	240	55	10.6	187	-45	Refrigeration oils based on polyalkylene glycols for application with the refrigerant R134a used in car and truck air conditioning systems (a/c systems). RENISO PAG 100 is especially suitable for vane compressors. RENISO PAG 46 and PAG 100 are also recommended for the use with hydrocarbon refrigerants and ammonia.
RENISO PAG 100		996	240	120	21.0	202	-45	
RENISO PAG 1234	Synthetic refrigeration oil based on double end-capped polyalkylene glycols (PAG). For vehicle a/c systems with R1234yf. Also suitable for R134a. DIN 51503: KD.	993	224	44	9.8	218	-45	RENISO PAG 1234 has been newly developed for car air conditioning systems with R1234yf. The product combines both good miscibility properties and high thermo-chemical stability in contact with the refrigerant. Basic fluid and additivation of RENISO PAG 1234 guarantee best lubrication properties and wear protection.
RENISO ACC HV	Synthetic refrigeration oil based on special, double end-capped PAGs for trans-critical CO ₂ applications (industrial and commercial applications). DIN 51503: KB. Based on special PAG's	991	229	65	13.5	216	-45	RENISO ACC HV was developed in close collaboration with leading compressor manufacturers and OEMs specific for CO ₂ air conditioning systems in vehicles. RENISO ACC HV is based on chemical and thermal extremely stable double end-capped PAG fluids with efficient additivation – especially with regard to wear protection.

Rapidly Biodegradable Lubricants



PLANTO



Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Environmentally Friendly Hydraulic and Lubricating Oils								
PLANTOSYN 3268 	PLANTOSYN 3268 is a biodegradable hydraulic and lubricating oil based on fully saturated synthetic esters. Biodegradable acc. to OECD 301 B >60%. High wear protection, good elastomer and yellow metal compatibility, very good oxidation stability. Surpasses the requirements on hydraulic oils HEES acc. to ISO 15380 and HVLP acc. to DIN 51524-3 (except: Dry TOST test). Awarded the EU Ecolabel: DE / 027 / 149	913	280	46	8.2	150	-36	Suitable for all mobile and stationary hydraulic systems for which the use of a rapidly biodegradable HEES hydraulic oil according to DIN ISO 15380 is recommended (e.g. in agriculture and forestry). Can be used where unsaturated, synthetic esters have failed. Extension of oil changing intervals possible. Oil sump temperature: -30 °C to 100 °C. Observe DIN ISO 15380 when making changeovers. Approved by: MANNESMANN REXROTH Sauer SUNDSTRAND FENDT KDM 28/2006, O&K Baumaschinen Recommended for CAT BF-1, KRAMER ALLRAD; PLAFINGER; SAUER DANFOSS; TIMBERJACK; VALMET/ KOMATSU; FOREST; PONSSE

Rapidly Biodegradable Lubricants





PLANTO

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Environmentally Friendly Hydraulic and Lubricating Oils								
PLANTOSYN 3268 ECO 	PLANTOSYN 3268 ECO – hydraulic oil based on synthetic esters with additives to increase ageing stability. Biodegradable acc. to OECD 301 B >60%. High wear protection. Surpasses the requirements acc. to ISO 15380: HEES DIN 51524-3: HVLP Awarded the EU Ecolabel: DE / 027 / 160	920	300	47	9.5	191	-33	Universally recommended for hydraulic systems from -30 °C to +90 °C (oil sump temperature). The changeover guidelines according to DIN ISO 15380 must be observed. Approved by FENDT KDM 28/2006
PLANTOLUBE KS 32-N	Biodegradable tacky and lubricating oil based on rapeseed oils. For chains and other so-called loss lubrication points.	921	205	32	7.6	230	-36	Universally usable as lubricating oil in chains and other so-called loss lubrication points in the agriculture and forestry sector. For the lubrication of conveyor machines in saw mills and in the animal feed stuff industry. For the use in applications where a biodegradable chain oil is required.
PLANTO TAC 68 	Biodegradable high performance chain saw oil based on rapeseed oils. Excellent lubrication behaviour, good ageing resistance. Awarded the EU Ecolabel.	924	>270	68	12.0	216	-39	For the professional use in chain saws. KWF Approvals Recommendations: Husqvarna, Stihl, Solo, Dolmar


Greases

PLANTO



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Rapidly Biodegradable Greases								
PLANTOGEL ECO 1 N 	—	Calcium Rape seed oil	—	1	36	-20 / +70	EU Ecolabel	Rapidly biodegradable lubricating grease with Ecolabel, e.g. for lock gates or in agriculture and forestry.
PLANTOGEL ECO 2 N 	—	Calcium Rape seed oil	—	2	36	-20 / +70	EU Ecolabel	Rapidly biodegradable lubricating grease with Ecolabel, e.g. for lock gates or in agriculture and forestry.
PLANTOGEL ECO 000 S 	—	Li/Ca synth. ester	—	00-000	55	-40 / +120	EU Ecolabel	Rapidly biodegradable semi-fluid grease for lubrication of plain and roller bearings in commercial vehicles and construction machinery with central lubrication systems. Also for gear systems which are exposed to low to medium loads.
PLANTOGEL ECO 2 S (Spray can: PLANTO MULTISPRAY S) 	—	Li/Ca synth. ester	—	2	105	-40 / +120	EU Ecolabel	Rapidly biodegradable EP multipurpose grease for plain and roller bearing lubrication, e.g. water turbines or in agriculture and forestry. Good pumpability in central lubricating systems.

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Rapidly Biodegradable Greases								
PLANTOGEL ECO 2 FS 	—	Li/Ca synth. ester	•	2	200	-30 / +120	EU Ecolabel	Rapidly biodegradable EP multipurpose grease with solid lubrications for lubrication of plain and roller bearings, e.g. commercial vehicles and construction machinery.
PLANTOGEL ECO 402 S 	—	Ca synth. ester	—	2	390	-40 / +120	EU Ecolabel	High performance bio-grease, water (salt water) resistant.
Greases in Spray Cans or Rattle Cans								
DUOTAC ZAHNRADSPRAY	—	Wax Mineral oil	•	—	—	-20 / +150	—	Dry, tenacious lubricating film. Open gears, gear rims, racks, chains, outer lubrication of wire ropes in crane installations, excavators, agricultural machines, rack and pinion railways; to be applied in cold condition, for open toothed-wheel gearing, transportation and conveying systems in the metallurgical industry and roller mills, lubrication/conservation of drag ropes and chains, e.g. in non-metallic mineral processing, solid lubricating film up to +300 °C; Bitumen-free special lubricant with graphite
PLANTO MULTISPRAY S (Grease: PLANTOGEL ECO 2 S) 	—	Li/Ca synth. ester	—	2	105	-40 / +120	EU Ecolabel	Rapidly biodegradable EP multipurpose grease for plain and roller bearing lubrication, e.g. water turbines or in agriculture and forestry. Good pumpability in central lubricating systems.
RENAX GLEITSPRAY (Grease: RENOLIT GL 1)	—	Lithium Semi-synth. base oil	—	1	—	-30 / +140	—	Very adhesive, reduces friction and wear, protects from corrosion, temperature stable, noise-suppressing, suitable for plain and roller bearings and for gear boxes, bowden cables, guide rails, sun roofs, etc.
RENOLIT CA-LZ SPRAY	KP2K-30 ISO-L-X-CCHB2	Calcium Mineral oil	—	2	700	-30 / +120	—	Strongly adhesive, protects from wear even under extreme conditions, very resistant to water wash-out from metallic surfaces, long-term lubrication of passenger cars and commercial vehicles, construction industry, industrial and agricultural machines.
RENOLIT UNILOAD (Grease: RENOLIT CX-HT 2)	—	CaSX Mineral oil	•	2	400	-20 / +200	—	Lubrication of highly loaded plain and roller bearings, open gear rims and gear wheels. Especially at high temperatures or where extremely high demands are made on corrosion protection and wear protection, e.g. for construction machinery, steel mills, coal and ore mills.

PLANTO, RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm ² /s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Assembly Pastes								
RENOLIT CHUCK PASTE	–	Li/Ca Mineral oil	•	2-3	166	-30 / +155	–	Chucks for machine tools and as mounting aide for gears and electrical motors, etc., ejectors of plastic injection moulding machines (up to +100 °C), prevent corrosion and fretting corrosion
RENOLIT PASTE PW	–	CaSX Mineral oil	•	2	350	-20 / +1200	–	Assembly paste for prevent fretting corrosion, e.g. gears, electrical motors, etc., chucks, superheated steam valves, bearing seats on knuckle pins, or spline connections in length adjusters of car-dan shafts
RENOLIT SI 300 M	MSI2P-70	Lithium Silicone oil	–	2	75	-70 / +160	DBL 6812.10 VW TL 767 X	Low temperature grease for electric and electronic equipment, precision machines, sealing grease for radial waves sealing rings, groove rings, sealing rings; lubrication of sealing bellows
Automotive Applications								
RENOLIT CA-LZ (Also available as spray can)	KP2K-30 ISO-L-X- CCHB2	Calcium Mineral oil	–	2	700	-30 / +120	–	Strongly adhesive, protects from wear even under extreme conditions, very resistant to water wash-out from metallic surfaces, long-term lubrication of passenger cars and commercial vehicles, construction industry, industrial and agricultural machines
RENOLIT CX-HT 0	–	CaSX Mineral oil	•	0	400	-20 / +160	–	Lubrication of highly loaded plain and roller bearings, open gear rims and gear wheels. Especially at high temperatures or where extremely high demands are made on corrosion protection and wear protection, e.g. for construction machinery, steel mills, coal and ore mills.
RENOLIT CX-HT 2 (Spray can: RENOLIT UNILOAD)	–	CaSX Mineral oil	•	2	400	-20 / +200	–	Lubrication of highly loaded plain and roller bearings, open gear rims and gear wheels. Especially at high temperatures or where extremely high demands are made on corrosion protection and wear protection, e.g. for construction machinery, steel mills, coal and ore mills.
RENOLIT DURAPLEX EP 1	–	Li-X Mineral oil	–	1	105	-30 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO
RENOLIT DURAPLEX EP 2	–	Li-X Mineral oil	–	2	105	-30 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO, wheel bearings of commercial vehicles, machine tools

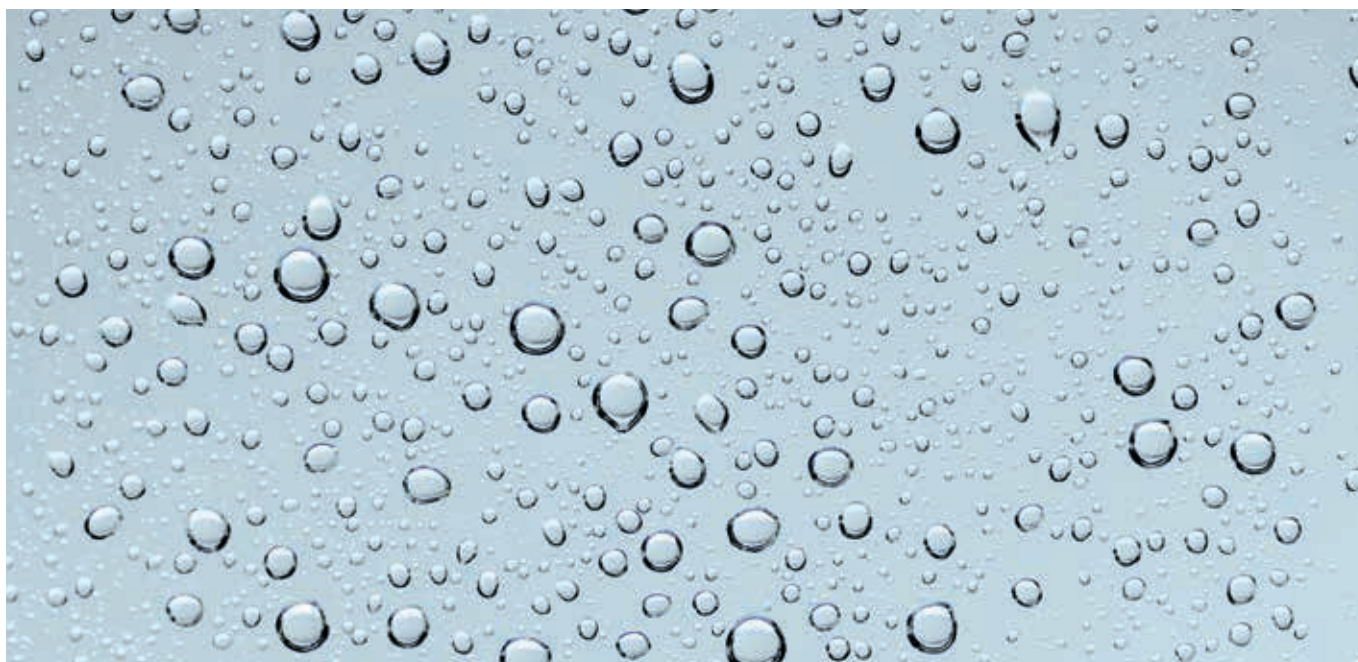
Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosity at 40 °C [mm ² /s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Automotive Applications								
RENOLIT DURAPLEX EP 3	–	Li-X Mineral oil	–	3	105	-20 / +160	–	Roller bearings, electric motor bea- rings, coupling bearings in the auto- motive sector, construction machines, forging presses by EUMUCO, wheel bearings of commercial vehicles
RENOLIT FLM 0	–	Lithium Mineral oil	•	0	100	-30 / +120	–	For mechanically loaded lubricating points, grease with MoS ₂ , and addi- tives to improve corrosion protection, EP and AW
RENOLIT FLM 2	KPF2N-30 ISO-L-X- CDEB 2	Lithium Mineral oil	•	2	100	-30 / +140	MAN 285 LI-PF 2	For mechanically loaded lubricating points, grease with MoS ₂ , agricultural machines, commercial vehicles, con- struction industry, quarries and mining, rubber and concrete factory
RENOLIT LZR 000	GP00- 000G-40	Li/Ca Mineral oil	–	00-000	43	-40 / +110	MB-Sheet 264.0 MAN 283 LI-P 00/000	Semi-fluid grease for central lubrica- ting systems of commercial vehicles
RENOLIT LZR 2 H	KP2N-30 ISO-L-X- CDIB 2	Lithium Mineral oil	–	2	200	-30 / +140	Baier & Köppel	Premium multipurpose grease, long- term rust prevention, sealing grease, central lubricating systems, sugar refi- neries, roof tile factories, paper indus- try, prevent standstill corrosion, hytrel compatible
RENOLIT LX-OTP 2	–	Li-X Polyglycol	•	1-2	360	-40 / +160	MAN	Lubrication of MAN knuckle pins
RENOLIT LX-PEP 3	KP3N-30 ISO-L-X- CDEB 3	Li-X Mineral oil	–	3	170	-30 / +150	Interprecise (IDC-Bea- rings)	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, plain and roller bearings, ventilator grease
RENOLIT LX-PEP 2	KP2N-30 ISO-L-X- CDEB 2	Li-X Mineral oil	–	2	170	-30 / +150	MAN 284 Li-H2, MB 265.1, ZF TE-ML 12, Schaeffler Gruppe, VW TL 52 147 X, Interprecise (IDC- Bearings), Deutsche Bahn	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, needle bearings of cardan shafts, plain and roller bearings, venti- lator grease
RENOLIT MP	KP2K-40 ISO-L-X- DCEB 2	Lithium Mineral oil	–	2	35	-40 / +120	DBL 6804.00 MB-Sheet 267.0	Multipurpose grease for lubricating points in passenger cars, commercial vehicles, engines, where constant temperature does not exceed 100 °C, sliding speeds are very low and which are not exposed to high mechanical loads
RENOLIT MP PLUS	KP2K-30 ISO-L-X- CCEB 2	Lithium Mineral oil	–	2	100	-30 / +120	–	High quality EP multipurpose grease with high adhesiveness for the lubrica- tion of plain and roller bearings. Only available in SR cartridges.

RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosity at 40 °C [mm ² /s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Automotive Applications								
RENOLIT MP 150	KP2K-40 ISO-L-X- DCEB 2	Lithium Mineral oil	–	2	150	-40 / +120	DBL 6804.50 MB sheet 267.1	Multipurpose grease for commercial vehicles. Daimler wheel bearing grease for the workshop area.
RENOLIT MP 735	KP2K-40 ISO-L-X- DCEB 2	Lithium Mineral oil	–	2	105	-40 / +120	VW TL 735 MAN 283 Li-P 2 Stabilus 100 15883	Multipurpose grease
RENOLIT POLAR BLACK	–	Lithium PAO	•	1-2	84	-50 / +140	–	Fully synthetic heavy duty all-season grease with solid lubricants for plain and roller bearings of construction machines and mining vehicles exposed to changing ambient temperatures.

Cleaner



Product name	Function	Materials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m³
Cleaner									
RENOCLEAN VR 1021 DGI	Neutral cleaner for spray and high-pressure application up to 600 bar, containing boron	Fe, Al, Brass, Cu	Contains phosphates and boramines, high pressure resistant VW approval A29 2936. Highly demulsifying, virtually foam-free from 25 °C upwards	Temporary, '2.5% / 10 °dH	9.2 at 3.5%	1 - 5	50 (10 - 80)	600	1076 ± 10
RENOCLEAN VR 1021 C	Spray cleaner for high-pressure cleaning and high-pressure deburring systems	Fe, Al	Contains phosphates, suitable for high-pressure applications VW approval A29 2862. Demulsifying adjusted, nearly foam-free from 30 °C	Temporary, '2.5% / 10 °dH	9.2 ± 0.3	1 - 5	65 (30 - 80)	30 / HD 350	1082 ± 12
RENOCLEAN MSA 3011	Neutral cleaner for spray, pressure flood, high-pressure cleaning and deburring, salt-free	Fe, Al, Brass, Cu, Mg	Contains hydroxides, suitable for high-pressure. PSA approval worldwide: MABEC-code Z 000 533 700. Foam-free from 20 °C, depending on pressure and temperature	Temporary, '2.5 % / 10 °dH	9.8 ± 0.3	1 - 5	60 (20 - 80)	500 (above 50 °C)	1046 ± 10

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Product name	Function	Ma- terials	Comments	Corrosion protecti- on, chip/ filter test 0/0 at x% in _	pH (2%), if appli- cable	Concen- tration range in %	Tem- pera- ture range	Injection pressure in bar to app.	Density at 15 °C in kg/m ³
Cleaner									
RENOCLEAN VR 1021 CXV	Neutral cleaner for spray, flood and high-pressu- re cleaning	Fe, Al, Brass, Cu, Mg	Contains hydroxi- des, suitable for high pressure. VW approval A29 0976. High-pressu- re cleaning (200 bar, 300 short term), nearly foam- free from 30 °C upwards	Temporary, '2% / 10 °dH	9.8 ± 0.3	1 - 5	65 (30 - 80)	200 (300 short term)	1053 ± 10
RENOCLEAN C 20 K 1427	Neutral cleaner for spray appli- cation, salt-free	Fe, (Mg) ¹	Very good corrosi- on protection, low residue formation, salt-free. VW approval A29 2863. E. g.: can be used before heat treatment	Temporary, '1.5% / 10 °dH	10.2 ± 0.3	1 - 5	65 (40 - 80)	~ 15	1044 ± 10
RENOCLEAN SPEZIAL 2000	Emulsifying uni- versal cleaner for immersion, ultrasonic and manual cleaning of commercial vehicles, tarpau- lins, halls and workshops.	All ma- te- rials ¹	Contains phospha- tes Specs • FORD 800 51 007. Suitable for all manual cleaning, for immersion, steam jet and floor cleaning equip- ment	–	10.9 ± 0.4 at 3%	2 - 20	35 (20 - 80)	–	1045 ± 10
RENOCLEAN GSO 3001	Cleaner for transport con- tainers (KLT) for spraying and manual applica- tion	All ma- te- rials ¹	For removing oil, grease, abrasion and transport dust. Designed for con- tainer cleaning sys- tems	–	8.5 ± 0.5 (100%)	1 - 10	60 (20 - 80)	5	1004 ± 10
RENOCLEAN GXA 4014	Universal cleaner for floors, halls and vehicles	All ma- te- rials ¹	Lime scent. For the mechanical and manual cleaning of workshop, vehicle fleet, etc.	–	11.7 ± 0.5 (1%)	1 - 20	20 (20 - 80)	–	1036 ± 10

Cleaner

RENOCLEAN

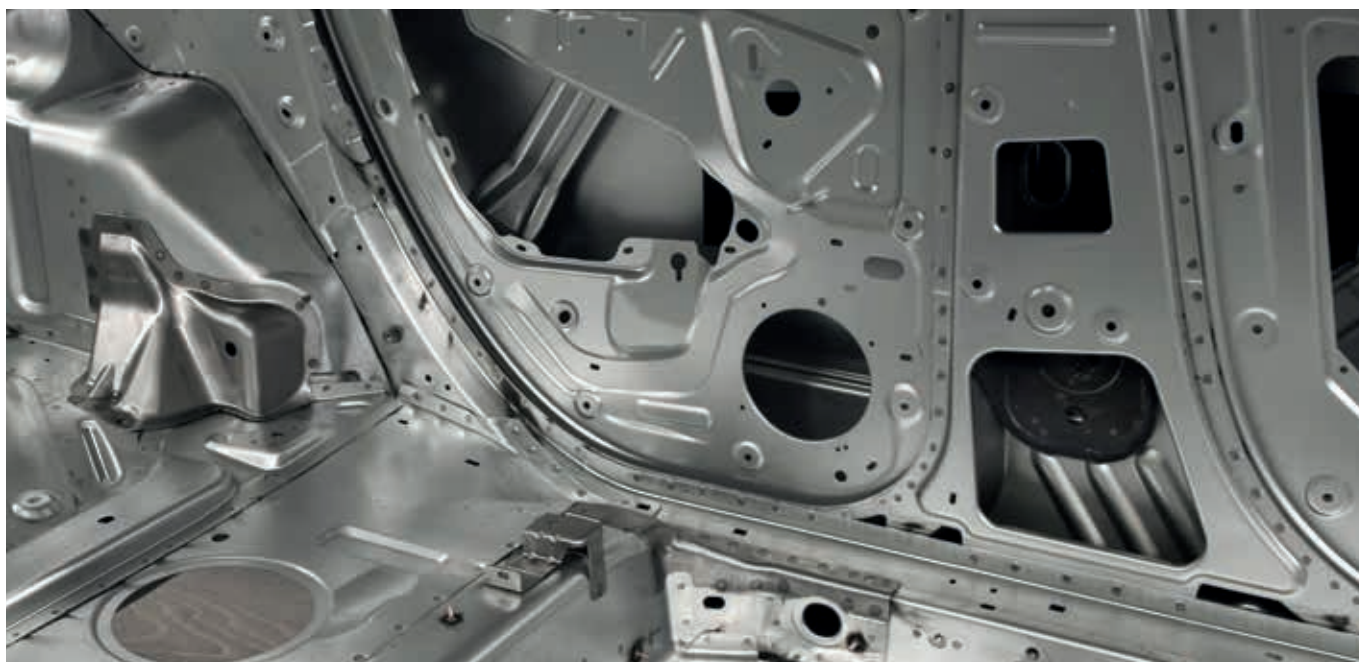
Product name	Function	Flash point	Boiling range	Density at 15 °C in kg/m³	Ma-terials	Comments
Cleaner						
RENOCLEAN KLV	Hydrocarbon cleaner, VOC- and aromatic-free	≥ 90 °C	217 - 255 °C	810 ± 15 kg/m³	All ma-terials, plastics¹	VOC-compliant, universal application, slow evaporation. VW approval A29 2819. Simple application, e. g. for removal of car wax preservation.
FUCHS MULTICLEAN	Hydrocarbon cleaner, low aromatic, environmentally friendly, demulsifying	≥ 61 °C	180 - 330 °C	795 ± 10 kg/m³		Free of caustic and corrosive substances. Universal application in industry and commerce, can be applied with steam jet, good corrosion protection properties.

Fitting Product

Product name	Function	Ma-terials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if appli-cable	Concen-tration range in %	Tem-pera-ure range	Injection pressure in bar to app.	Density at 15 °C in kg/m³
Fitting Product									
RENOCLEAN 431	Industrial assembly aid for rubber and elastomers	–	Lubricant, e. g. for fitting window seals made of rubber, hoses etc. Parts are fixed after drying, no more sliding effect	–	7 ± 1 (100%)	10 - 30	15 - 30	–	1017 ± 10

Corrosion Preventives

ANTICORIT



Product name	Description	Kin. visc. at 40 °C [mm²/s] DIN 51562	Density at 15 °C [KG/m³]	Con- sump- tion [l/m²]	Film weight [g/m²]	Shed storage [Mon.]	Hall storage [Mon.]
Spray Cans							
ANTICORIT 5F	Rust preventative spray forming a thin film with active water displacement	3.7 at 20 °C	813	–	2.5	6-12	12-24
ANTICORIT BW 366	Solvent-based and durable high performance corrosion protection wax	FT 4mm nozzle = 60s	885	–	50	12-36	12-36
ANTICORIT DFG	Classic anti-corrosive oil and contact spray, multipurpose	84	887	–	5	6-12	12-24
ANTICORIT RPC	Rust preventative spray, after evaporation a highly viscous film is formed	84	887	–	5	6-12	6-24
ANTICORIT CPX 3373	Solvent-free*) and durable high performance corrosion protection wax	Dyn. visc. at 300 1/min = 350m*Pas	1005	–	50	>36	>36
ANTICORIT SYNTH	Synthetic multipurpose oil	102	834	–	15	3-6	6-12
RENOCLEAN E	Highly effective degreaser for multipurpose use	1.7 at 20 °C	800	–	0	–	–
ANTICORIT RP 4107 S	Thixotropic corrosion protection oil, meets VDA 230-213	35	887	–	11	6-12	12-20

*) Value of pure product

INDUSTRIAL OILS

Many processes in the industry work perfectly only with specially tailored lubricant solutions.

For example, in the transmission of energy by pressure media (hydraulic fluids), in the gearing of driving forces (gear oils), in the power generation in power plants (turbine oils), at refrigeration (refrigeration oils) or compressed air production (air compressor oils) the respective industrial oils have a significant task.

In addition, FUCHS industrial lubricants can make a significant contribution to a improved productivity in many other applications. They can increase efficiency significantly and reduce energy consumption and associated CO₂ emissions.

Low Varnish turbine oils e.g. ensure trouble-free operation of power plants. Refrigeration oils adjusted to environmentally neutral refrigerants improve the environmental balance in the cold chain. Rapidly biodegradable lubricants are a powerful alternative to hydrocarbon-based lubricants.



Industrial Oils

Hydraulic Oils	68-76
Gear and Circulating Oils	77-82
Slideway Oils	83
Paper Machine Oils	84-85
Turbine Oils	86
Oils for Transformers	87
Compressor Oils	88-90
Refrigeration Oils	91-94
Environmentally Friendly Industrial Oils	95-97
Cylinder Oils, Tacky Oils, Heat Transfer Oils, Special Sealing Oils for Gasometers, IRM Reference Fluids	98-99

Industrial Oils



Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Machine Oils: AR								
RENOLIN AR 14	Range RENOLIN AR General lubricating oils based on mineral oil. Exceeds the requirements of L-AN lubricating oils according to DIN 51501.	884	250	64	8.2	96	-10	For lubrication systems without special requirements regarding ageing resistance, cold temperature behaviour, etc. Oil temperature should not exceed 70 °C. Lowest inlet temperature of the oil should be 5 °C above the pourpoint.
RENOLIN AR 19		883	260	100	11.0	94	-15	
RENOLIN AR 22		888	240	150	14.6	96	-12	
	AR 14: AN 68 AR 19: AN 100 AR 22: AN 150							

RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
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Demulsifying Circulating, Spindle and Hydraulic Oils: HL / CL

RENOLIN DTA 2	Range RENOLIN DTA Hydraulic and lubrication oils based on selected base oils with additives to improve ageing stability and corrosion protection.	805	100	2.2	–	–	-27	For thermally-stressed bearings, gears and hydraulic systems with peak temperatures up to 120 °C. Lubrication oils without AW/EP additives.
RENOLIN DTA 5		837	120	4.6	1.6	106	-40	
RENOLIN DTA 7	All RENOLIN DTA products are DIN 51524-1: HL hydraulic oils and DIN 51517-2: CL circulating oils based on mineral oil, demulsifying (water-separation), zinc-free.	839	155	7.4	2.2	103	-27	Also suitable for hydrodynamic drives if HL or CL lubrication fluids are required.
RENOLIN DTA 10		851	174	10	2.6	92	-27	
RENOLIN DTA 15	ISO 6743-4: HL, ISO 6743-6 and ISO 12925-1: CKB.	856	195	15	3.4	98	-27	VOITH Turbo couplings type T and S.
RENOLIN DTA 22		865	210	22	4.2	94	-27	
RENOLIN DTA 32		874	222	32	5.4	102	-24	Suitable for Landis Lund machine tool spindles (without AW/EP).
RENOLIN DTA 46		874	228	46	6.8	101	-24	
RENOLIN DTA 68		882	250	68	8.7	99	-18	Demulsifying type
RENOLIN DTA 100		881	248	100	11.2	97	-18	
RENOLIN DTA 150		889	266	150	15.5	94	-15	
RENOLIN DTA 220		893	280	220	18.8	95	-12	
RENOLIN DTA 320		898	280	320	24.0	95	-12	
RENOLIN DTA 460		904	315	460	30.4	95	-12	

Zinc-containing Hydraulic Oils: HLP

RENOLIN B 3 VG 10	Range RENOLIN B Lubrication and hydraulic oils with additives to improve the ageing and oxidation stability. Good wear protection, demulsifying (good water separation), good air release properties, zinc-containing AW/EP additive system.	850	178	10	2.6	95	-42	Universal applicable hydraulic fluids if good ageing resistance, good wear protection and demulsifying properties are required.
RENOLIN B 5 VG 22		863	200	22	4.4	107	-27	
RENOLIN B 10 VG 32	The RENOLIN B range meets and surpasses the minimum requirements of HLP hydraulic oils acc. to DIN 51524-2. ISO 6743-4: HM ISO 6743-6: CKC ISO 11158: HM B 3: HLP 10 B 5: HLP 22 B 10: HLP 32 B 15: HLP 46 B 20: HLP 68 B 30: HLP 100	876	205	32	5.5	109	-24	Universal hydraulic fluids; synergistic acting and robust additives ensure good wear protection in stationary and mobile hydraulic systems, even at high load and high temperature.
RENOLIN B 15 VG 46		875	210	46	6.9	105	-24	
RENOLIN B 20 VG 68		881	224	68	8.8	100	-24	DENISON HFO approval Bosch Rexroth
RENOLIN B 30 VG 100		883	232	100	11.1	96	-18	

Industrial Oils

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Zinc-containing Hydraulic Oils								
RENOLIN B 32 HP	Range RENOLIN B HP Hydraulic oils with additives to improve ageing and oxidation stability, excellent AW/EP wear protection even at high loads and temperature; demulsifying. Surpass HLP requirements. HLP hydraulic oils according to DIN 51524-2 and ISO 6743-4: HM.	880	205	32	5.48	107	-24	Suitable for all hydraulics especially if an approval according to BOSCH Rexroth RDE 90245 is required. Mineral oils for HP - high-pressure application. Demulsifying type
RENOLIN B 46 HP		880	210	46	6.93	106	-24	
RENOLIN B 68 HP		880	225	68	8.8	102	-24	
RENOLIN B HP 32 PLUS	Range RENOLIN B HP PLUS Hydraulic oils, based on high-quality, hydrated base oils group II. Contains additives for excellent ageing and oxidation stability, the zinc-containing AW/EP additive system protects against wear at high pressure and load. Extended oil drain intervals are possible. Hydraulic oils according to DIN 51524-2: HLP and ISO 6743-4: HM.	860	216	32	5.5	110	-39	Suitable for all hydraulics especially if an approval according to BOSCH Rexroth RDE 90235/ RDE 90245 is required. Group II base oil (Hydrogenated base oil), for HP-high-pressure application. Demulsifying type
RENOLIN B HP 46 PLUS		870	236	46	6.94	110	-36	
RENOLIN B HP 68 PLUS		870	236	68	9.05	109	-33	
RENOLIN B 15 HVI	Range RENOLIN B HVI Hydraulic and lubricating oils (machine oils) with a high viscosity index and additives to improve ageing stability, corrosion protection and wear protection. The products of the RENOLIN B HVI range are HVLP hydraulic and circulating oils according to DIN 51524-3, mineral oil based, demulsifying and zinc-containing AW/EP additives. DIN 51524-3: HVLP ISO 6743-4: HV ISO 11158: HV Denison HF0, HF1, HF2	859	180	15	3.8	151	-45	RENOLIN B HVI oils are suitable for all hydraulic systems, especially when a high viscosity index is required, reduced viscosity during cold start-up, high viscosity at operating temperature. High VI provides multigrade characteristics. Energy saving through high volumetric efficiency. Demulsifying type
RENOLIN B 22 HVI		866	178	22	4.9	151	-45	
RENOLIN B 32 HVI		871	178	32	6.3	152	-48	
RENOLIN B 46 HVI		879	186	46	8.1	150	-45	
RENOLIN B 68 HVI		868	240	68	11.0	153	-36	
RENOLIN D 2 VG 7	Range RENOLIN D Detergent lubrication and hydraulic oils with additives to improve ageing resistance, corrosion protection and wear protection. Good viscosity temperature behaviour. Zinc-containing AW/EP additives system. The RENOLIN D range meets and surpasses the minimum requirements of HLPD hydraulic oils. HLPD according to DIN 51524-2. ISO 6743-4: HM with DD-properties.	844	155	7,2	2.2	99	-27	RENOLIN D oils are used as lubricating and hydraulic oils when good ageing resistance, good wear protection, detergent and dispersant properties are required. Universal hydraulic oils for all hydraulic systems, even if thermally stressed.
RENOLIN D 3 VG 10		852	178	10	2.8	96	-30	
RENOLIN D 5 VG 12		871	200	22	4.3	96	-27	
RENOLIN D 10 VG 32		875	210	32	5.3	99	-24	
RENOLIN D 15 VG 46		879	224	46	6.8	100	-27	
RENOLIN D 20 VG 68		883	232	68	8.7	99	-24	
RENOLIN D 46 HVI VG 100	As RENOLIN D with additional additives for improved viscosity-temperature behaviour. HVLPD 46. DIN 51524-3: HVLP-D ISO 6743-4: HV	876	186	46	8.2	151	-45	Multigrade fluid for general hydraulic systems working at a wide temperature window in addition to the requirements above.

RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Zinc-containing Hydraulic Oils								
RENOLIN XtremeTemp 32	Range RENOLIN XtremeTemp Universal, high performance hydraulic oils with high viscosity index and excellent shear stability (VI 180). Based on special hydro-generated base oils, very good ageing behaviour, long lifetime, excellent corrosion protection and very good wear protection, fulfils and surpasses DIN 51524-3: HVLP ISO 6743-4: HV ISO 11158: HV zinc-containing AW/EP additive system Denison HF0, HF1, HF2. RENOLIN XtremeTemp Plus with additional Anti Stick-Slip additives	845	216	32	6.9	180	-33	Universal high performance multigrade hydraulic oil for stationary and mobile hydraulic systems, improved efficiency, increasing oil change intervals. Multigrade characteristics through high, shear-stable viscosity index. Energy and fuel saving through high volumetric efficiency. Approvals: Denison HF0, HF1, HF2 Bosch Rexroth RD90235 and RDE90245
RENOLIN XtremeTemp 46		853	230	48	9.3	180	-34	
RENOLIN XtremeTemp 32 Plus	Range RENOLIN XtremeTemp Plus As RENOLIN XtremeTemp, but with additives which helps to avoid stick-slip phenomena. For high-pressure applications; reduce friction especially in mixed friction conditions DIN 51524-3: HVLP(D) ISO 6743-4: HV According Denison and Bosch Rexroth requirements	861	216	32	6.9	183	-33	Slightly detergent, HVLP (D) high performance multigrade hydraulic oil for stationary and mobile hydraulic systems surpass HVLPD acc. to DIN 51524-3, wide temperature window, excellent shear stability. Helps to avoid stick-slip problems, especially at low speed and high load. Energy and fuel saving through high volumetric efficiency.
RENOLIN XtremeTemp 46 Plus		855	234	48	9.3	181	-34	
RENOLIN LIFT 22	Range RENOLIN LIFT Special detergent type of hydraulic oils for elevators and hydraulic conveyors, fork lifters. Reliably prevents stick-slip, especially at high loads and low speeds. HLPD hydraulic oils according to DIN 51524-2; ISO 11158: HM; ISO 6743-4: HM	869	210	22	4.3	100	-30	Fork lifters, elevators, hydraulic transport mechanisms, stationary and mobile hydraulics. Protection against stick-slip.
RENOLIN LIFT 32		877	210	32	5.3	96	-30	
RENOLIN LIFT 46		881	210	46	6.8	101	-27	

Industrial Oils

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Zinc-containing Hydraulic Oils								
RENOLIN MR 0 VG 2	Range RENOLIN MR RENOLIN MR products are special HLPD lubricating and hydraulic fluids according to DIN 51502 with outstanding corrosion protection and powerful cleaning and dirt carrying capacity. Zinc-containing, detergent and dispersant. RENOLIN MR oils are used in many hydraulic systems as problem solvers, especially when standard oils cannot fulfil all requirements. RENOLIN MR oils fulfil and surpass the requirements of HLPD hydraulic oils according to DIN 51524-2. ISO 6743-4: HM with high DD-performance.	807	75	2,2	–	–	-42	<u>RENOLIN MR 3:</u> For machine tool spindles and roller bearing spindles in the textile industry.
RENOLIN MR 1 VG 5		837	85	5	1.7	83	-36	
RENOLIN MR 3 VG 10		852	166	10	2.6	91	-30	
RENOLIN MR 5 VG 22		868	165	22	4.3	100	-30	<u>RENOLIN MR 5, 10, 15 and 20:</u> Universal hydraulic oils with outstanding corrosion protection up to continuous temperatures of 100 °C. For smaller gear boxes, in particular with electrical multi-plate clutches. High DD performance
RENOLIN MR 10 VG 32		875	208	32	5.6	114	-30	
RENOLIN MR 15 VG 46		877	220	46	6.9	105	-27	
RENOLIN MR 20 VG 68		881	225	68	8.9	105	-24	<u>RENOLIN MR 30, 40:</u> For larger gear boxes. As running-in and anticorrosion oil. Allows oil changes to be extended.
RENOLIN MR 30 VG 100		883	248	100	11.4	100	-18	
RENOLIN MR 40 VG 150		889	250	150	14.8	98	-18	
RENOLIN MR 310	Hydraulic and lubricating oils with extremely high viscosity index as well as outstanding cleaning properties and sludge carrying capacity. HVLPD according to DIN 51502 together with DIN 51524-3. ISO 6743-4: HV	855	118	15	5.4	360	-48	<u>MR 310, 520 and 1030:</u> For all hydraulic systems which are subject to a wide temperature range or which are operated outdoors, e.g. in flood gates, machines or for low application temperatures.
RENOLIN MR 520		886	154	32	8.0	270	-60	
RENOLIN MR 1030		873	214	68	11.0	154	-36	
RENOLIN MR 22 MC	Range RENOLIN MR MC Universal lubricating and hydraulic oils based on MC base oils with high viscosity index (shear-stable). Excellent oxidation stability and outstanding cleaning properties and sludge carrying capacity. HVLP according to DIN 51524-3 MR 22 MC: HVLPD 22 MR 32 MC: HVLPD 32 MR 46 MC: HVLPD 46 MR 68 MC: HVLPD 68	856	200	22	4.9	153	-54	Same application as for RENOLIN MR in addition to those which require oils with high viscosity index. Allow oil change intervals to be extended, grades to be rationalized. Multigrade characteristics. Very wide operating temperature window. Energy saving through high volumetric efficiency. MC base oils = hydrotreated base oils (group III)
RENOLIN MR 32 MC		858	220	32	6.4	152	-48	
RENOLIN MR 46 MC		864	234	46	8.3	154	-48	
RENOLIN MR 68 MC		870	253	68	11.2	157	-42	
RENOLIN MRX 32	Range RENOLIN MRX Selected, and high quality special refined oil with additives to maximize ageing protection, reduce wear and friction. High detergent and sludge carrying capacity; excellent protection against corrosion: DIN 51524: HLPD MRX 32: HLPD 32 MRX 46: HLPD 46	878	228	32	5.5	108	-27	The RENOLIN MRX hydraulic and lubricating oils are especially recommended for systems which are exposed to a high risk of dust/dirt or water contamination, e.g. for mobile hydraulic systems, for running-in procedures or in agriculture and forestry applications.
RENOLIN MRX 46		884	232	46	6.9	103	-24	

RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Zinc- and Ash-free Hydraulic Oils (ZAF)								
RENOLIN MWB 46	Range RENOLIN MWB Selected solvent base oils with additives to improve oxidation and ageing resistance. Excellent corrosion and wear protection, good load carrying capacity and low friction. High performance reserves. Zinc-free AW/EP additive system HLPD according to DIN 51524-2 MWB 46: HLPD 46 MWB 68: HLPD 68	882	218	46	6.9	105	-24	Heavy-duty HLPD hydraulic and circulating oils (CLP) for all highly stressed hydraulics. Excellent wear protection. High load carrying capacity. High load capacity according to Bruggen of ≥50 N/mm ² , e.g. hydraulic presses in the automotive industry.
RENOLIN MWB 68		879	224	68	8.7	99	-18	
RENOLIN ZAF B 5 HT	Range RENOLIN ZAF B HT Zinc- and ash-free, demulsifying hydraulic and gear oils with good ageing stability and oxidation resistance. Excellent wear protection for gears (FLS > 12) and roller bearings. High corrosion protection, even in the presence of water, excellent non-ferrous metal compatibility.	824	130	4,6	1.6	105	<-54	Demulsifying, zinc- and ash-free HLP hydraulic and CLP lubricating oils with good ageing resistance for all hydraulic systems, hydraulic presses or machine tools. Bruggen ≥ 30N/mm ²
RENOLIN ZAF B 10 HT		848	170	10	2.7	100	<-54	
RENOLIN ZAF B 22 HT		863	210	22	4.4	106	-33	
RENOLIN ZAF B 32 HT		875	220	32	5.4	96	-33	
RENOLIN ZAF B 46 HT	HLP according to DIN 51524-2 HM acc. to ISO 6743-4 HM acc. to ISO 11158 HM acc. to 6743-6 CLP acc. to DIN 51517-3 CKC acc. to ISO 6743-4 (DBL 6713-13: HLP, Daimler)	876	230	46	6.8	101	-27	Demulsifying type
RENOLIN ZAF B 68 HT		882	242	68	8.8	100	-21	
RENOLIN ZAF B 100 HT		882	240	100	11.3	99	-18	
RENOLIN ZAF 150 BB		893	225	150	14.6	94	-21	
RENOLIN ZAF 220 BB	Zinc- and ash-free, demulsifying lubrication and hydraulic oils with high ageing resistance. Contains additives to improve corrosion and anti-wear properties. Fulfills and surpasses requirements according to DIN 51524-2: HLP; HM acc. to ISO 6743-4	894	240	220	13.6	94	-9	
RENOLIN ZAF D 22 HT	Range RENOLIN ZAF D HT Zinc- and ash-free lubricating and hydraulic oils with detergent and dispersant properties. Good ageing resistance, excellent wear protection and oxidation stability, good air release properties. Fulfills and surpasses requirements acc. to DIN 51524-2: HLP-D ISO 6743-4: HM DIN 51517-3: CLPD ISO 6745-6: CKC	860	206	22	4.3	103	-33	Detergent, zinc- and ash-free hydraulic HLPD and lubrication oils CLP for all hydraulic drives even if thermally stressed. Also suitable for use as CLP lubricating oil. Bruggen ≥ 30N/mm ²
RENOLIN ZAF D 32 HT		870	220	32	5.3	97	-33	
RENOLIN ZAF D 46 HT		880	230	46	6.8	100	-27	
RENOLIN ZAF D 68 HT		880	>230	68	8.8	100	-27	

Industrial Oils

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Zinc- and Ash-free Hydraulic Oils (ZAF)								
RENOLIN ZAF D 46 HT PLUS	Universal zinc- and ash-free hydraulic fluid and lubricating oil, excellent ageing stability and high wear protection. Provides high deterging and dispersing properties. Passes and surpasses the requirements according to DIN 51524-2: HLPD ISO 6743-4: HM DIN 51517-3: CLP ISO 6743-6: CKC.	866	230	46	6.9	106	-39	Detergent zinc- and ash-free hydraulic oils based on hydro-treated group II base oils with improved oxidation stability at high thermal stresses, for hydraulic presses. Brugger ≥ 30 N/mm ² Extended lifetime, excellent air release, detergent/dispersant type
RENOLIN ZAF 46 D-White	Universal zinc- and ash-free detergent type of hydraulic fluid and industrial gear oil, excellent ageing stability, very high wear protection, latest base oil generation, hydrotreated base oils and low sulphur content. Passes and surpasses the requirements according to DIN 51524-2: HLP, HLPD ISO 6743-4: HM	865	>230	46	6.9	106	-39	Excellent for all applications in mobile and stationary hydraulic systems, recommended according to DIN 51524-2 (HLP). Based on hydrotreated group II base oils, "non-discoloration oil" . Detergent type
RENOLIN ZAF 5 DT	Range RENOLIN ZAF DT Selected solvent extracts with special additives to improve corrosion protection and wear protection. High load carrying capacity acc. to Brugger. Detergent and dispersant. Fulfil and surpass DIN 51524-2: HLPD (except detergent / dispersant). ISO 11158: HM CLP acc. to DIN 51517-3 (detergent / dispersant) CKC acc. to ISO 6743-6	847	116	5	1.7	99	-40	Heavy-duty hydraulic and circulating oils with outstanding detergent and dispersant properties. Very good ageing resistance, good corrosion protection and excellent load carrying capacity. Daimler DBL 6721 for machine tools Brugger value ≥ 50 N/mm ² Detergent type
RENOLIN ZAF 10 DT		848	154	10	2.7	108	-30	
RENOLIN ZAF 15 DT		865	190	15	3.3	86	-27	
RENOLIN ZAF 22 DT		866	198	22	4.4	109	-27	
RENOLIN ZAF 32 DT		876	210	32	5.4	102	-24	
RENOLIN ZAF 46 DT		876	218	46	6.8	101	-24	
RENOLIN ZAF 68 DT		879	224	68	8.9	104	-18	
RENOLIN ZAF 100 DT		882	220	100	11.3	99	-18	
RENOLIN ZAF 150 DT		887	222	150	14.6	96	-15	
RENOLIN ZAF 32 MC	Range RENOLIN ZAF MC Lubricating and hydraulic oils based on group III base oils and selected additives. Very good oxidation and ageing stability, very good corrosion protection and high wear protection. High viscosity index (shear stable). Fulfil and surpass DIN 51524-2: HLP DIN 51524-3: HVLP ISO 6743-4: HM ISO 6743-4: HV DIN 51517-3: CLP ISO 6743-6: CKC DBL 6713: HLP, HVLP	840	246	35	6.7	149	-45	Shear stable, zinc- and ash-free hydraulic and circulating oils with high viscosity index. Based on MC hydrotreated group III base oils . Oil drain intervals might be extended and grades can be rationalized (multigrade characteristics). Energy saving through high efficiency. Denison HFO approval Bosch Rexroth approval RDE 90245 and RD 90235 Brugger value ≥ 50 N/mm ²
RENOLIN ZAF 46 MC		843	238	46	8.0	148	-45	
RENOLIN ZAF 68 MC		854	238	68	10.6	146	-42	

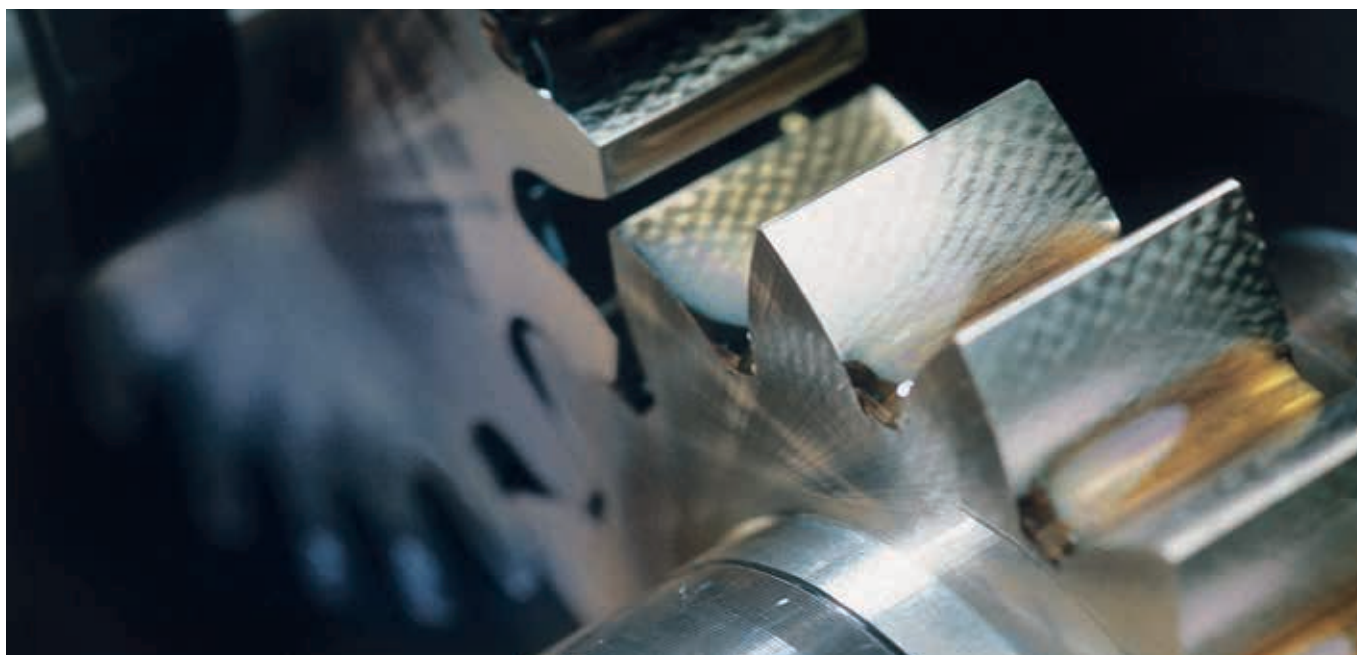
RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Zinc- and Ash-free Hydraulic Oils (ZAF)								
RENOLIN ZAF 520	Zinc- and ash-free special hydraulic and lubricating oil with extreme high viscosity index. Thus very good viscosity-temperature behaviour. Fulfills and surpasses DIN 51524-3: HVLP; ISO 6743-4: HV (detergent)	868	160	34	9.2	267	-30	For all hydraulic systems with high temperature variations also for low-temperature applications.
RENOLIN ZAF 15 LT	Range RENOLIN ZAF LT Zinc- and ash-free hydraulic oils with very high viscosity index for low-temperature applications. Demulsifying with additives to improve ageing stability and corrosion protection. Surpass the requirements on DIN 51524-3: HVLP; ISO 6743-4: HV	873	>90	14	5.3	387	<-60	Developed for the use in applications with very low ambient temperatures in mobile and stationary equipment; latest additive technology. (ZAF)
RENOLIN ZAF 32 LT		869	155	31	8.7	281	<-60	Demulsifying type
RENOLIN HighPress 46 DLC	Range RENOLIN HighPress DLC Zinc- and ash-free high performance EP hydraulic oil for Ortlinghaus lamellar clutch systems (hydraulic presses). Excellent detergent and dispersant properties, very good wear protection (FZG failure load stage 12 / Bruger value 50 N/mm ²). Fulfills and surpasses the requirements on hydraulic oils HLPD acc. to DIN 51524-2 and ISO 11158: HM.	877	212	46	6.8	100	–	Especially suitable for the use in systems with Ortlinghaus lamellar clutches. Defined friction coefficients are proved in use (static and dynamic). Müller Weingarten DT 55005 Ortlinghaus lamellar clutches ON 9.2.19 Also suitable for the use in circulation and bearing lubrication in all hydraulic presses.
RENOLIN PG 32	Range RENOLIN PG Fully-synthetic hydraulic and lubricating oils based on polyglycols for highest requirements regarding thermal stability, high viscosity index. Not miscible or compatible with mineral oils, water-soluble. Classification acc. to VDMA 24 569 PG 32: HEPG 32 PG 46: HEPG 46 Exceed ISO 15380 HEPG. Fulfil and surpass the requirements on hydraulic oils HVLP acc. to DIN 51524-3.	1022	220	32	7.1	194	-54	For highly loaded hydraulic and lubricating systems with extreme thermal load. Please consider change-over guidelines. Water-soluble PAG hydraulic oil, not miscible or compatible with mineral oils or PAO oils.
RENOLIN PG 46		1029	240	46	9.7	203	-48	

Industrial Oils

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Fire-resistant Hydraulic Fluids								
HYDROTHERM 46 M	Based on water-glycol; tested and approved acc. to 6th and 7th Luxemburg report. Good wear protection, very good corrosion protection, extreme ageing resistance. HFC hydraulic oil acc. to DIN 51502 and VDMA 24 317, ISO 12922: HFC 46.	1048	–	46	9.5	195	-42	For all hydraulic systems in fire hazard areas (mining, steel industry, aluminium industry, foundry, forging, glass industry). Suitable for all materials, paintings and elastomers which are resistant to water-glycol. Monoethylene-free and amine-free.
RENOSAFE DU 46	Water-free fire-resistant fluid based on special esters. Voith-Turbo Approval HFDU acc. to ISO 12922	922	>250	48	9.7	188	-45	Fire-resistant hydraulic fluid based on special organic esters - HFDU. Optimized for turbo couplings. Compatible with mineral oils. Compatibility with sealings, tubes and paintings has to be checked.
RENOSAFE TURBO 46 HF NEW	Water-free, fire-resistant, special, thermally stable phosphoric acid esters. Good demulsibility (water separation), low foaming tendency, high oxidation stability. ISO 12922: HFDR46	1150	>250	44	5.0	-35	-24	Hydraulic fluid in fire hazard areas. For electro hydraulic control circulations in steam turbines, bearing lubrication for steam- and gas turbines, phosphoric ester. New HFDR technology.
RENOSAFE FireProtect 46	Range RENOSAFE FireProtect Water-free, fire-resistant hydraulic fluids based on latest ester and additive technology, type HFDU. Highest oxidation and thermal stability, excellent non-ferrous metal compatibility, hydrolytic stability and very robust and reliable wear protection. Multigrade characteristics by high, shear stable viscosity index. Biodegradable acc. to OECD 301 B >60%. Surpasses the requirements on HFDU oils acc. to ISO 12922.	920	270	50	10.4	203	-42	For the use as fire-resistant hydraulic oils based on organic esters. Type HFDU for all hydraulic applications in fire hazard areas or glowing metal surfaces such as in die-casting machines, steel mills, continuous casting machines, hot rolling mills, coking plants and other mobile and stationary hydraulic systems, excellent lifetime, excellent yellow metal compatibility.
RENOSAFE FireProtect 68		919	280	68	12.6	188	-45	

RENOLIN



Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Gear and Circulating Oils								
RENOLIN CLP 68	Range RENOLIN CLP High performance gear and circulating oils with good ageing stability and additives to improve corrosion protection (also combat steel and non-ferrous metal corrosion caused by moisture). Outstanding antiwear characteristics – good EP / AW performance, excellent scuffing load carrying capacity and protection against micropitting, excellent FE8 roller bearing wear protection, good demulsifying properties, very good foaming behaviour, zinc-free and silicone oil-free. RENOLIN CLP oils fulfil and exceed the minimum requirements of CLP lubricating oils according to DIN 51517-3, ISO 6743-6 and ISO 12925-1: CKC,CKD. US Steel 224, David Brown S1.53.10. Approved by leading gearbox manufactures.	886	236	68	8.7	99	-24	Universal gear oils for industrial applications such as in bearings, joints, spur gears, bevel gears and worm gears and whenever the manufacturer recommends an mineral oil of type CLP. Approved by leading gearbox manufacturers. Mineral oil based Demulsifying
RENOLIN CLP 100		890	240	100	11.2	98	-21	
RENOLIN CLP 150		894	250	150	14.5	96	-24	
RENOLIN CLP 220		896	260	220	18.9	96	-24	
RENOLIN CLP 320		900	255	320	24.0	95	-12	
RENOLIN CLP 460		901	270	460	30.4	95	-12	
RENOLIN CLP 680		918	270	680	36.8	88	-10	

Industrial Oils

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Gear and Circulating Oils								
RENOLIN CLP 46 PLUS	Range RENOLIN CLP PLUS High performance gear and circulating oils offering excellent wear protection, good EP performance and excellent corrosion protection. Carefully selected antioxidants guarantee good ageing stability. Special detergent/dispersant additives offer very good cleaning properties and dirt carrying capacity. RENOLIN CLP PLUS oils fulfil and surpass the minimum requirements on lubricating oils acc. to DIN 51517-3, ISO 6743-6 and ISO 12925-1: CKC, CKD. CLP PLUS oils were developed especially for the extreme conditions, e.g. "raw material" industry, mining industry conveyors operate.	885	200	46	6.8	102	-27	Special gear oils for highly stressed mechanical industrial, spur gears, double-spur gears, bevel gears and worm gears. Long-life oils (tested and approved for 30,000 hours in brown coal open pit mining conveyors/gears). Increased oxidation stability. Mineral oil based Detergent/dispersant type
RENOLIN CLP 68 PLUS		888	236	68	8.7	100	-27	
RENOLIN CLP 100 PLUS		891	240	100	11.2	97	-24	
RENOLIN CLP 150 PLUS		895	250	150	14.8	97	-24	
RENOLIN CLP 220 PLUS		899	260	220	18.9	96	-24	
RENOLIN CLP 320 PLUS		899	255	320	24.0	95	-18	
RENOLIN CLP 460 PLUS		904	270	460	30.2	94	-14	
RENOLIN CLP 680 PLUS		908	270	680	39.6	95	-17	
RENOLIN AWD 68	Range RENOLIN AWD Special gear and circulating oils for highest requirements on wear protection. Special additives reduce friction and form reaction layers which offer excellent wear protection in extreme mixed friction and load conditions. Bruggen value >75 N/mm ² , excellent FE8 roller bearing wear protection, good dirt carrying capacity (detergent / dispersant), zinc- and silicone oil-free, high additive reserves. The RENOLIN AWD series surpasses the minimum requirements on industrial gear oils CLPD acc. to DIN 51517-3, ISO 6743-6 and ISO 12925-1: CKC, CKD. Approved by leading press manufacturers.	882	221	68	8.9	105	-24	For highly-stressed industrial gear boxes and circulating systems, especially when good load carrying capacity in extreme mixed friction is required, e.g. press lines in the automotive industry. High Bruggen value of >75 N/mm ² . Mineral oil based Detergent/dispersant type
RENOLIN AWD 100		886	222	100	11.2	97	-24	
RENOLIN AWD 150		894	208	150	14.6	96	-12	
RENOLIN AWD 220		896	210	220	18.7	95	-12	

RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Fully Synthetic Gear and Circulating Oils								
RENOLIN PG 32	Range RENOLIN PG Fully synthetic gear and lubricating oils based on special polyalkylene glycols (PAG) for applications with extreme thermal loads. High oxidation and ageing stability, high viscosity index (shear stable), good viscosity-temperature behaviour, excellent load carrying capacity, low coefficients of friction, high FZG, very good pitting and micropitting resistance, excellent FE8 performance. The oils of the RENOLIN PG series surpass the minimum requirements of CLP-PG lubricating oils according to DIN 51517-3, ISO 6743-6 and ISO 12925-1: CKC, CKD, CKE, (CKS), CKT. Approved by leading gearbox manufacturers.	1022	220	32	7.1	194	-54	For gear boxes operating in extreme thermal and mechanical conditions, such as worm gears and calander lubrication. Can also be used as compressor oils for process gases such as methane, ethane, propane, etc. due to low hydrocarbon gas solubility. Particularly suitable for steel / bronze sliding pairs in worm gears. Not miscible or compatible with mineral oils, ester oils and PAO-based oils.
RENOLIN PG 46		1029	240	46	9.7	203	-48	
RENOLIN PG 68		1035	240	68	13.8	212	-51	
RENOLIN PG 100		1043	260	100	19.6	220	-48	
RENOLIN PG 150		1051	240	145	27.0	224	-51	
RENOLIN PG 220		1075	240	220	36.8	218	-33	
RENOLIN PG 320		1075	240	320	54.4	237	-36	
RENOLIN PG 460		1075	280	460	75.1	245	-36	
RENOLIN PG 680		1075	280	680	110.3	261	-33	
RENOLIN PG 1000		1075	280	1000	162.0	281	-36	
RENOLIN UNISYN CLP 68	Range RENOLIN UNISYN CLP Fully-synthetic gear and circulating oils with excellent thermal and ageing stability, very high viscosity index (shear stable), outstanding low-temperature behaviour, very good cold-flow-properties, excellent air release and low foaming tendency, good micropitting resistance, excellent FE8 performance, good demulsibility, zinc-free and silicone oil-free. The oils of the RENOLIN UNISYN CLP series surpass the minimum requirements on gear oils CLP-HC acc. to DIN 51517-3, ISO 6743-6 and ISO 12925-1: CKC, CKD, CKE, AIST 224, David Brown S1.53.101. Approved by leading gearbox manufacturers.	848	240	68	10.7	147	-56	For the lubrication of bearings and gear boxes with high thermal loads. RENOLIN UNISYN CLP oils are also suitable for lubricated-for-life applications and for the use in gear boxes with extended oil change intervals. Miscible and compatible with mineral oils and ester oils. Excellent low-temperature characteristics, high, shear stable viscosity index.
RENOLIN UNISYN CLP 100		851	250	100	14.5	150	-53	
RENOLIN UNISYN CLP 150		853	250	150	19.6	150	-45	
RENOLIN UNISYN CLP 220		854	260	220	26.7	155	-42	
RENOLIN UNISYN CLP 320		860	260	320	35.0	155	-42	
RENOLIN UNISYN CLP 460		861	300	460	45.6	155	-39	
RENOLIN UNISYN CLP 680		862	300	680	62.2	160	-33	
RENOLIN UNISYN CLP 1000		864	300	1000	84.0	165	-27	

**Based on Polyglycol,
water soluble, PAG**

**Based on PAO
(Polyalphaolefins)**

*Further ISO VG grades available on request.

RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Special Gear and Circulating Oils								
RENOLIN HighGear Synth 150	Range RENOLIN HighGear Synth* RENOLIN HighGear Synth is based on synthetic polyalphaolefins (PAO). Special synergistic additives provide outstanding wear protection of these new high-tech gear oils. Highly effective tribo-protection layers reliably protect wetted machine components against wear. RENOLIN HighGear Synth oils have a high, natural and shear stable viscosity index and are suitable for both high and low temperature applications. High thermal and oxidation stability allow oil change intervals to be extended. DIN 51517-3: CLP-HC; ISO 6743-6 and ISO 12925-1: CKC, CKD, CKE.	871	220	150	18.0	133	-36	RENOLIN HighGear can be used both in pre-damaged gear boxes and machine components to increase service life as well as in new gear boxes (spur, bevel, planetary and worm gears) to reduce friction, wear and noise in extreme conditions. Synthetic PAO components help reduce friction, lower operating temperatures and can increase efficiency. Excellent low-temperature characteristics, high, shear stable viscosity index.
RENOLIN HighGear Synth 320		876	220	320	31.2	135	-34	
RENOLIN HighGear Synth 460		878	220	460	41.6	140	-27	
RENOLIN HighGear Synth 680		880	220	680	57.9	149	-27	
*Further ISO VG grades available on request.								
								Based on PAO (Polyalphaolefins)
RENOLIN MORGear 100	Range RENOLIN MORGear High performance circulating oils based on mineral oil, for the lubrication of MORGear bearings. Mild EP/AW additives provide good wear protection, synergistically acting additives ensure good ageing stability and excellent demulsibility (very good water separation). ISO 6743-6 and ISO 12925-1: CKB.	888	248	100	11.1	96	-19	For the lubrication of MORGear bearings. RENOLIN MORGear oils fulfil and surpass the requirements of DANIELI (Italy, 2000) and SMS (2005).
RENOLIN MORGear 220		895	255	226	19.2	96	-10	
RENOLIN MORGear 320		903	>260	320	24.0	95	-12	
RENOLIN MORGear 460		904	>270	470	31.1	96	-9	
RENOLIN MORGear 680		915	252	682	39.2	95	-7	
								Mineral oil based
RENOLIN SynGear 220 HT	Fully-synthetic high-temperature EP industrial gear oil and calander oil based on selected polyglycols (PAG). Excellent wear protection and ageing stability. DIN 51517-3: CLP-PG ISO 6743-6: CKC/CKD/CKT	1078	240	240	39.0	216	-36	For mechanically and thermally highly loaded wheel and worm gears / rolling and plain bearings. Especially for calanders in the paper and foil industry. Peak temperatures of 250 °C are allowed for a short time. Miscibility and compatibility properties with polyglycols of others manufacturers have to be checked.
								Based on PAG (Polyglycol)

Industrial Oils

Product name	Description	Densi- ty at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour- point °C	Main application area
Special Gear and Circulating Oils								
RENOLIN CLP 220 VCI	Range RENOLIN CLP VCI* Special industrial gear oils based on mineral oil with excellent corrosion protection properties. Reliable long-term corrosion protection in the oil phase as well as in the vapour phase. Excellent wear protection, high scuffing protection, good compatibility with industrial gear oils. Fulfil and surpass the requirements on CLP industrial gear oils acc. to DIN 51517-3: CLP; ISO 6743-6 and ISO 12925-1: CKC / CKD as well as AGMA 9005/E02: EP.	898	254	220	19.0	97	-24	Recommended for applications with highly loaded spur gears, bevel gears, and worm gears. Also suitable in highly loaded bearings, joint bearings and pressure spindles. Especially for gears and components which are not used for a longer period of time or are stored before they are used and therefore a conservation must be applied. Contain VCI-components (Vapor Corrosion Inhibitors). Mineral oil based (VCI type)
RENOLIN CLP 320 VCI		900	254	320	23.0	92	-14	
*Further ISO VG grades available on request.								
RENOLIN UNISYN GEAR 220 VCI	RENOLIN UNISYN GEAR 220 VCI* Fully-synthetic industrial gear oil based on PAO with excellent corrosion protection properties. Reliable long-term corrosion protection in the oil phase as well as in the vapour phase. Excellent wear protection, high scuffing protection, good compatibility with industrial gear oils. Fulfil and surpass the requirements on CLP industrial gear oils acc. to DIN 51517-3: CLP; ISO 6743-6 and ISO 12925-1: CKC / CKD as well as AGMA 9005/E02: EP.	855	260	220	26.0	160	-42	For the use in heavily loaded spur gears, bevel gears and worm gears with circulation oil system or oil injecting system. Contains VCI components (Vapor Corrosion Inhibitors). Based on PAO (VCI type)
*Further ISO VG grades available on request.								
RENOFLUID TF 1500	EP-hydraulic- and gear oil based on high performance base oils. With high ageing stability. FZG-Test A/8,3/90 Failure load stage > 12. DIN 51524-2: HLP ISO 6743-4: HM	870	224	32	5.4	102	-30	Power transmission oil for VOITH-turbo gears, hydraulic oils for VOITH-turbo couplings. Also suitable as low viscosity, high-pressure gear oil especially with hydraulic controls and combined oil system. Mineral oil based

RENOLIN, RENEP



Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Slideway Oils								
RENEP CGLP 68	Range RENEP CGLP With lubricity improvers and friction-reducing additives. Good EP performance. Protect against corrosion and prevent stick-slip. CGLP slideway oils according to DIN 51502. Demulsifying. RENEP CGLP 68: CGLP 68 RENEP CGLP 150: CGLP 150 RENEP CGLP 220: CGLP 220	879	220	68	8.6	99	-24	Advanced formulation. Excellent chemical compability with water-miscible metal working fluids. Slideway oils with very good demulsifying power, very low friction coefficient. HELLER approval. These slideway oils are especially suitable for the use with ECOCOL cutting fluids. Proven good compatibility with many water-miscible cutting fluids. Approved by leading machine tool manufacturers.
RENEP CGLP 150		892	230	150	14.8	98	-18	
RENEP CGLP 220		895	240	220	19.0	96	-15	
RENEP 2 K	Range RENEP K Solvent raffinates with special additives to reduce stick-slip especially for machine tools. Good detergency. Emulsifying. Detergent/dispersant type RENEP 2 K: CGLP 68 RENEP 4 K: CGLP 100 RENEP 5 K: CGLP 220	882	230	68	9.2	112	-27	RENEP K series products are universal products suitable for all slideway applications. They offer good EP performance, good anti-wear properties and pronounced corrosion protection. RENEP K series products display good compatibility with slide materials, very good ageing and oxidation stability and reliably combat stick-slip.
RENEP 4 K		885	240	100	11.8	107	-24	
RENEP 5 K		900	248	220	19.9	104	-12	
RENEP KN 68	Range RENEP KN Excellent adhesion provided by special additives which increase the adhesion to metal and plastic surfaces - "tacky" effect. Good EP performance. Protect against corrosion and prevent stick-slip. Advanced formulation. CGLP slideway oils according to DIN 51502. Demulsifying. RENEP CGLP 68: CGLP 68 RENEP CGLP 150: CGLP 150 RENEP CGLP 220: CGLP 220	882	220	67	9.1	110	-29	Excellent chemical compability with water-miscible metal working fluids. Slideway oils with very good demulsifying properties, low friction coefficient. Proven good compatibility with many water-miscible cutting fluids. Approved by leading machine tool manufacturers.
RENEP KN 220		895	238	224	19.5	100	-17	

Industrial Oils



Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Paper Machine Oils								
RENOLIN PA 150	Range RENOLIN PA Mineral oil based paper machine oils based on specially selected base oils in combination with zinc-containing EP-additives which provide an excellent wear protection. RENOLIN PA oils fulfil and exceed the minimum requirements on CLP gear oils acc. to DIN 51517-3 and the requirements of paper machine oils for the wet end and dryer section acc. to Voith VN 108.	878	>230	150	15.0	100	-30	Recommended the use in wet end and dryer sections in paper machines, also in gear boxes, bearings in central lubricating systems as well as in applications where a lubricating oil with high thermal stability and very good ageing stability is needed, demulsifying type. Mineral oil base
RENOLIN PA 220		886	>230	220	19.3	99	-18	
RENOLIN NF PRESS 100	Mineral oil based hydraulic oil based on hydrogenated mineral oils in combination with specially selected, zinc and ash-free additive technology. Specially developed for the use in hydraulic presses in paper machines. Exceeds the requirements on hydraulic oils acc. to Voith VN 108.	867	260	100	11.5	103	-36	For the use in hydraulic presses in paper machines, e.g. Voith shoe presses. Hydrogenated. Mineral oil base (group II)

RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Paper Machine Oils								
RENOLIN UNISYN CLP 150 PA	Range RENOLIN UNISYN CLP PA Fully-synthetic, high performance paper machine oils based on polyalphaolefins. Excellent demulsibility (excellent water separation), high ageing stability, excellent wear protection and very good corrosion protection. High natural, shear stable viscosity index. Fulfil and exceed the minimum requirements of gear oils CLP HC acc. to DIN 51517-3 and the specifications of the manufacturers FAG, Valmet, SKF and Voith VN 108.	857	>200	150	19.8	152	-39	For the use in circulating lubrication of the wet end and dryer section in paper machines, also in gear boxes and central lubricating systems.
RENOLIN UNISYN CLP 220 PA		859	230	220	26.5	154	-36	RENOLIN UNISYN CLP 220 PA Fulfil and exceed the minimum requirements of the companies SKF, FAG, Voith 108 and Metso RAU4L00659,06EN
RENOLIN UNISYN CLP 320 PA		964	>240	320	34.2	151	-32	
RENOLIN UNISYN CLP 460 PA		866	>240	460	46.0	156	-27	Based on PAO

Industrial Oils



Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Turbine Oils								
RENOLIN ETERNA 32	Range RENOLIN ETERNA Turbine oils of the latest generation for lubrication of gas and steam turbines and turbo compressors (also with gear boxes, FZG ≥ 10). Based on high-quality, hydrocracked base oils. High ageing resistance, excellent protection against sludge formation. Turbine oils according to DIN 51515-1: L-TDP and DIN 51515-2: L-TGP. Approved by SIEMENS, MAN and many other turbine manufacturers and power station operators.	842	220	32	5.8	126	-15	For the lubrication of steam and gas turbines and generators, turbo compressors, pumps and transmissions. Furthermore used as lubricating and barrier oil in water-cooled generators. Surpass TDP and TGP according to DIN 51515-1/2. AW/EP turbine oils: FZG≥10.
RENOLIN ETERNA 46		846	220	46	7.6	132	-15	
RENOLIN ETERNA 68		851	230	68	9.9	120	-15	
RENOLIN ETERNA 32 SGV	Range RENOLIN ETERNA SGV Turbine oils of the latest generation for lubricants of gas and steam turbine as well as for turbo compressor without gear boxes. Exceeds the requirements of DIN 51515-1: TD; DIN 51515-2: TG. Approved by SIEMENS, MAN and many other turbine manufacturers and power station operators, EP/ AW-free	838	220	32	5.8	126	-15	For the use in gas and steam turbines as well as in turbo compressors. Especially suitable for the compression of synthesis gases and ammonia. EP/AW-free, highest thermal stability. Surpass TD and TG according to DIN 51515-1/2.
RENOLIN ETERNA 46 SGV		846	220	46	7.6	132	-15	

RENOLIN



Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Oils for Transformers								
RENOLIN E 10	High quality, inhibited insulating oil based on naphthenic base oils which can be used in transformers, switches, choking coils, condensers and converters. Excellent dielectric properties and high oxidation stability. Fulfills and surpasses the requirements for insulating oils according to EN 60296 as well as RWE Power Specification class I.	872	152*	10.0	—	—	-48	RENOLIN E 10 is used as insulating oil in transformers, switches, choking coils, condensers, converters and similar aggregates, also at low outdoor temperatures (e.g. in outdoor units).
RENOLIN ELTEC	Mineral oil-based insulating oil which can be used in transformers, converters and switch gears. Fulfills the requirements on insulating oils acc. to EN 60296.	869	149*	9.9	2.4	59	-48	RENOLIN ELTEC is used as insulating oil in transformers, switch gears, inductance coils, capacitors, instrument transformers, and similar devices, even at low ambient temperatures (e.g. in outdoor installations).
RENOLIN E 3	Inhibited switchgear oil based on naphthenic base oils. Especially for the use in outdoor units. Fulfills the requirements according to EN 60296.	861	100*	3.2	—	—	<-70	RENOLIN E 3 is primarily used in power switches in outdoor units. Even at low ambient temperatures RENOLIN E 3 ensures an excellent flowability. Hence any additional electric heating is not necessary.

* Acc. to Pensky Martens (P.M.)

Industrial Oils



Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Compressor Oils								
RENOLIN 208	Range RENOLIN 200 Ageing-resistant lubricating oils with good viscosity-temperature behaviour for normally stressed compressors, drive units as well as plain and rolling bearings. C lubricating oils according to DIN 51517 and VB lubricating oils according to DIN 51506. 208: C 100, VB 100 210: C 150, VB 150 212: C 220, VB 220 213: C 320, VB 320 215: C 460, VB 460	883	260	100	11.0	94	-15	Oils for all air compressors which require a DIN 51506 VB lubricant. Also suitable as a type C circulating oil according to VDI-guideline 2202. VB => up to 140 °C compression temperature.
RENOLIN 210		886	274	150	14.2	91	-9	
RENOLIN 212		880	290	220	18.1	90	-9	
RENOLIN 213		900	275	320	24.0	95	-7	
RENOLIN 215		904	310	510	32.5	96	-10	

RENOLIN

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Compressor Oils								
RENOLIN 503	Range RENOLIN 500 Special ageing-resistant lubricating oils offering minimal coking. Contain additives to improve corrosion protection and ageing stability. VDL lubricating oils according to DIN 51506. For compressor outlet temperatures up to +220 °C. 503: VDL 68 504: VDL 100 505: VDL 150 506: VDL 220	861	250	68	9.1	109	-18	Compressor oils with excellent anti-ageing behaviour and extremely low coking tendency. For air compressors with end temperatures up to 220 °C. Also for other thermally loaded circulation lubrication systems.
RENOLIN 504		866	280	100	11.9	109	-21	
RENOLIN 505		875	275	150	15.0	100	-15	
RENOLIN 506		890	280	230	18.7	90	-12	
RENOLIN VDL 100 DD	Range RENOLIN VDL-DD Lubricating oils for air compressors. Contain additives to increase corrosion protection and ageing resistance and reduce deposits (detergent/dispersant (DD) additives). VDL lubricating oils according to DIN 51506. Surpasses intensified ageing test VDL 100 DD: VDL 100 VDL 150 DD: VDL 150	882	250	98	11.0	110	-24	Oils for all highly-stressed air compressors which require a VDL oil with DD additives, good dirt carrying capacity. Self-cleaning performance.
RENOLIN VDL 150 DD		880	260	152	15.0	100	-12	
RENOLIN SC 32	Range RENOLIN SC Premium-quality, oxidation- and ageing-resistant special cuts with corrosion protection and Anti-Wear additives. Screw compressor fluids	871	218	32	5.4	100	-15	Mineral oil-based screw compressor oils for normal oil change intervals. For maximum discharge temperatures up to 110 °C.
RENOLIN SC 46		875	236	46	6.7	100	-12	
RENOLIN SC 68		879	251	68	8.7	99	-9	
RENOLIN SC 46 MC	Range RENOLIN SC MC Screw compressor oils based on MC oils with a high, natural viscosity index for extended oil change intervals.	858	230	46	6.7	100	-18	Based on hydrogenated base oils (MC). Screw compressor oils for extended oil change intervals. For maximum discharge temperatures up to 110 °C.
RENOLIN SC 68 MC		852	240	71	11.8	160	-24	
RENOLIN COOL +	Semi-synthetic screw compressor oil. Group III base oils combined with highly-efficient additive technology.	854	206	50	8.0	130	-18	High performance screw compressor oil. Extended oil change intervals even when subject to high thermal loads and/or extreme working conditions.
RENOLIN VAC 100 F	Special vacuum pump lubricant based on highly refined mineral oils. Does not contain any additives. Extremely low evaporation losses. Suitable for high vacuum.	887	270	102	12.1	109	-15	Can be used in minimum final pressure range from 10-3 up to 10-4 mbar. Suitable for different compressor types for example piston and rotary compressors.

Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Compressor Oils								
RENOLIN UNISYN OL 32	Range RENOLIN UNISYN OL Fully-synthetic cooling oils for piston and screw compressors based on polyalphaolefins with excellent oxidation stability, outstanding wear protection, good demulsification and excellent viscosity-temperature behaviour. High viscosity index. Excellent air release. Allow service intervals to be extended. Lubricating oils VDL according to DIN 51506 and synthetic hydraulic oils according to DIN 51524-2/3.	838	240	32	6.1	142	<-60	Fully-synthetic screw compressor oils based on PAO for extended oil change intervals even when subject to high thermal loads. Also suitable for highly loaded hydraulic systems. Excellent air release properties. Extended oil drain intervals. Based on PAO
RENOLIN UNISYN OL 46		843	260	46	7.9	146	<-60	
RENOLIN UNISYN OL 68		845	260	68	10.6	144	-54	
RENOLIN UNISYN OL 100		849	260	100	14.2	146	-54	
RENOLIN UNISYN OL 150		849	250	150	19.4	148	-47	
RENOLIN SE 68	Range RENOLIN SE Fully-synthetic air compressor oils based on advanced synthetic ester technology. Fulfils the requirements according to VDL DIN 51506	927	264	68	9.2	111	-36	High temperature stable ester oil for use in vane type and reciprocating compressors, even under severe conditions e.g. high temperatures. Especially suited for compressors where the use of a mineral oil can lead to coking and varnish. Based on Di-Ester
RENOLIN SE 100		971	268	100	11.1	97	-36	
RENOLIN LPG 100	Range RENOLIN LPG Synthetic gas compressor oils based on polyalkylene glycols (PAG). Suitable for process gases, refinery gases (petroleum gases) and other hydrocarbon-based gases (propane, propylene, butane, etc.) and their blends. Attention: For RENOLIN LPG 100 and LPG 185 a drying process has to be applied prior to using them as refrigeration oils.	1002	270	100	16.2	175	-39	RENOLIN LPG 100 and LPG 185 are characterized by a low solubility of hydrocarbon gases in the oil. Due to the use of special PAG base oils, the dilution of the lubricant in operation (drop in viscosity) is minimized. Thus, reliable wear protection and excellent lubricating properties are guaranteed. Selected additives provide additional security in terms of thermal-oxidative stability and wear protection of the lubricant under gas atmosphere. Based on PAG
RENOLIN LPG 185		1012	280	185	29.0	197	-36	
RENOLIN SynAir	High performance synthetic air compressor fluid, excellent biodegradability according to OECD 301C > 60%. Excellent thermal and oxidation stability.	992	271	48	8.7	161	-50	For use in flooded or oil-injected screw air compressors. For applications at high temperatures to reduce oil-related residues, varnish and sludge. Extended oil drain intervals. Biodegradable acc. to OECD 301 C >60%. Based on synthetic components

RENOLIN, RENISO



Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Refrigeration Oils								
RENISO WF 5 A	Range RENISO WF Special refrigeration oils for use with the refrigerant isobutane (R600a) – highly refined, low flocculation point with R600a, containing additives to improve wear protection and ageing stability. High energy efficiency. DIN 51503: KC, KE.	827	134	5.0	1.7	95	-45	RENISO WF refrigeration oils are recommended for the lubrication of hermetic refrigerator compressors with the refrigerant isobutane (R600a). Due to special additive systems, the RENISO WF refrigeration oils ensure the formation of a wear-protecting lubricating film at all operating temperatures. RENISO WF refrigeration oils are fully miscible with R600a and also with all other hydrocarbon refrigerants like R290.
RENISO WF 7 A		832	158	7.2	2.2	97	-42	
RENISO WF 10 A		835	172	9.6	2.6	97	-42	
RENISO WF 15 A		883	164	15	3.1	–	-51	
RENISO KM 32	Range RENISO K Highly refined, naphthenic mineral oils with high ageing stability, low pourpoint, excellent low-temperature behaviour and particularly good compatibility with the following refrigerants: ammonia (NH ₃), HCFCs (e.g. R22), hydrocarbons (e.g. propane R290, propylene R1270). DIN 51503: KAA, KC, KE.	881	202	32	4.9	63	-45	For all refrigeration systems using ammonia (NH ₃) or HCFC refrigerants. RENISO KES 100 is suitable for applications with high evaporation and condensation temperatures, such as air conditioning applications, heat pumps - especially recommended for turbo compressors.
RENISO KS 46		894	204	46	5.8	47	-42	
RENISO KC 68		894	223	68	7.4	58	-39	
RENISO KES 100		912	218	100	8.4	20	-33	

Industrial Oils

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Refrigeration Oils								
RENISO SP 32	Range RENISO S/SP Fully synthetic refrigeration oils based on chemically and thermally stable alkyl benzenes. RENISO SP 32, 46, 100 and 220 contain highly effective AW additives (not suitable for NH₃ applications). Excellent miscibility and excellent stability with HCFC refrigerants (e.g. R22). DIN 51503: KC, KE.	881	172	32	4.6	31	-39	Particularly good miscibility with HCFC refrigerants, such as R22. Suitable for very low evaporation temperatures down to -80 °C. RENISO SP products are also recommended for use with Drop-In refrigerants (R402A/B, R401A/B, etc.). Due to their excellent stability RENISO S/SP – products are suitable for the lubrication of highly stressed refrigerant compressors. RENISO SP 220 is especially designed for the lubrication of screw compressors.
RENISO SP 46		875	199	46	5.6	26	-42	
RENISO SP 100		871	190	100	7.9	11	-24	
RENISO SP 220		872	192	220	13.2	13	-27	
RENISO S 3246	RENISO S 3246 and RENISO S 68 do not contain AW additives and are suitable for use with HCFC refrigerants, hydrocarbons and NH ₃ . DIN 51503: KAA, KC, KE.	877	180	40	5.1	17	-39	RENISO S 3246 and RENISO S68 – suitable for R22, hydrocarbons as well as NH ₃ applications.
RENISO S 68		869	188	68	6.2	-30	-33	
RENISO TRITON SEZ 22	Range RENISO TRITON SE/SEZ Fully synthetic refrigeration oils based on synthetic polyol esters - especially suitable for non-ozone depleting FC/HFC refrigerants, such as R134a, R404A, R507, R410A, R407C. Also suitable for hydrocarbon refrigerants. As polyol ester oils strongly tend to absorb water (hygroscopic behaviour), the contact of these lubricants with air (atmospheric humidity) has to be limited to a minimum. DIN 51503: KD, KE.	1003	248	20	4.4	133	-57	The RENISO TRITON SE/SEZ products are perfectly suited for all refrigeration circuits in which chlorine-free refrigerants (HFCs / FCs), e.g. R134a are used. RENISO TRITON SE/SEZ-refrigeration oils are recommended for hermetic, semi-hermetic and open piston compressors, as well as for screw and turbo compressors (depending on viscosity). Comprehensive tests have been performed on the use of RENISO TRITON SE/SEZ products with new refrigerants designed to replace R22, such as R422A/D and R417A.
RENISO TRITON SEZ 32		1004	250	32	6.1	141	-57	
RENISO TRITON SE 55		1009	286	55	8.8	137	-48	
RENISO TRITON SEZ 68		970	258	68	8.9	104	-39	
RENISO TRITON SEZ 80		992	251	82	10.4	115	-39	
RENISO TRITON SEZ 100		970	266	100	11.4	100	-30	
RENISO TRITON SE 170		972	260	173	17.1	106	-27	
RENISO TRITON SE 220		976	294	220	19.0	98	-27	
RENISO TRITON SEZ 320		1016	278	310	33.0	148	-42	
RENISO TRITON SEZ 35 SC		1015	256	34	6.3	138	-51	
								RENISO TRITON SEZ 35 SC has a specific performance specification which is aligned on the use in scroll compressors. Suitable for all HFC/FC and HFO refrigerants.

RENISO

Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Refrigeration Oils								
RENISO SYNTH 68	Synthetic refrigeration oil based on polyalphaolefins (PAO). For NH ₃ applications and hydrocarbon refrigerants. Also suitable for CO ₂ (not miscible with CO ₂). DIN 51503: KAA, KB, KE. NSF-H1-approved acceptable as a lubricant with incidental food contact, for use in and around food processing areas.	835	260	68	10.5	142	-57	RENISO SYNTH 68 has been developed especially for the lubrication of highly stressed NH ₃ compressors. Excellent stability with NH ₃ . Excellent low temperature flowability, suitable for evaporation temperatures below -50 °C. Very good thermal stability. Very good lubricity also in hydrocarbon (propane R290, propylene R1270, etc.) and CO ₂ applications (not miscible with CO ₂). Based on PAO
RENISO UltraCool 68	Refrigeration oil based on synthetic hydrocarbons. Particularly developed for ammonia applications. DIN 51503: KAA.	854	250	62	9.1	124	-48	RENISO UltraCool 68 combines high thermal stability (no varnish, no sludge) and low evaporation rate (low oil carry-over/ low oil loss) with good elastomer compatibility (CR, HNBR, NBR).
RENISO GL 68	Fully synthetic refrigeration oil based on polyalkylene glycols (PAG), miscibility gap 10% oil / 90% NH ₃ : -22°C. NH ₃ – partly miscible refrigeration oil (Linde), also suitable for hydrocarbon applications. DIN 51503: KAB, KE.	1010	270	68	10.5	140	-42	RENISO PG 68 and GL 68 are ultra-dried, synthetic refrigeration oils based on PAG for NH ₃ systems which operate on the principle of direct expansion. They differ in their miscibility with NH ₃ . Suitable for screw and reciprocating piston compressors. RENISO PG 68 and GL 68 are also recommended for the use with hydrocarbon refrigerants.
RENISO PG 68	Fully synthetic refrigeration oil based on polyalkylene glycols (PAG), miscibility gap 10% oil / 90% NH ₃ : -35 °C. NH ₃ – partly miscible refrigeration oil, also suitable for hydrocarbon applications. DIN 51503: KAB, KE.	1044	250	70	14.0	210	-52	Based on PAG Warning: PAG oils are not compatible / miscible with mineral oil. PAG oils are hygroscopic. Avoid any contamination with water. Please contact our FUCHS application engineers.
RENISO PAG 46	Synthetic refrigeration oils based on special polyalkylene glycols (PAG) for automotive air conditioning units with R134a. Also suitable for hydrocarbon applications. DIN 51503: KAB, KD, KE.	992	240	55	10.6	187	-45	Refrigeration oils based on polyalkylene glycols for application with the refrigerant R134a used in car and truck air conditioning systems (a/c systems). RENISO PAG 100 is especially suitable for vane compressors. Based on PAG
RENISO PAG 100		996	240	120	21.0	202	-45	
RENISO PAG 1234	Synthetic refrigeration oil on the basis of double-end-capped polyalkylene glycols (PAG). For vehicle a/c systems with R1234yf. Also suitable for R134a. DIN 51503: KD.	993	224	44	9.8	218	-45	RENISO PAG 1234 has been newly developed for car air conditioning systems with R1234yf. The product combines both good miscibility properties and high thermo-chemical stability in contact with the refrigerant. Basic fluid and additivation of RENISO PAG 1234 guarantee best lubrication properties and wear protection.

Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Refrigeration Oils								
RENISO PAG 220 C “Ultra dry”	Synthetic refrigeration oil based on special, double-end capped PAGs for trans-critical CO ₂ applications (industrial and commercial applications). DIN 51503: KB.	1077	250	226	39.1	226	-39	Refrigeration oil based on thermally very stable, double-end capped PAGs for industrial transcritical CO ₂ applications (particularly for air conditioning and heat pump applications). Contains special additives to improve wear protection and ageing stability.
RENISO ACC 68	Range RENISO ACC Synthetic refrigeration oil based on special, double-end capped PAGs for trans-critical CO ₂ applications (industrial and commercial applications). DIN 51503: KB.	992	>220	68	14.1	215	-42	Refrigeration oil based on thermally very stable, double-end capped PAGs for industrial transcritical CO ₂ applications (particularly for air conditioning and heat pump applications). Contains special additives to improve wear protection and ageing stability.
RENISO ACC HV	Based in special PAG’s	991	229	65	13.5	216	-45	RENISO ACC HV was developed in close collaboration with leading compressor manufacturers and OEMs specific for CO ₂ air conditioning systems in vehicles. RENISO ACC HV is based on chemical and thermal extremely stable double end-capped PAG fluids with efficient additivation – especially with regard to wear protection.
RENISO C 55 E	Range RENISO C Synthetic refrigeration oils based on special polyol esters with anti-wear additives for use with the refrigerant CO ₂ (subcritical and transcritical applications). Also suitable for HFC / FC refrigerants. DIN 51503: KB, KD.	1009	286	55	8.8	137	-48	The RENISO C products were especially developed for use in applications with the refrigerant CO ₂ . Application fields: supermarket refrigeration equipment (subcritical deep-freeze stage of cascade systems & transcritical applications), ship cooling, as well as nearly all fields of industrial and commercial refrigeration.
RENISO C 85 E		993	246	80	10.6	118	-42	
RENISO C 170 E		976	286	178	18.5	116	-33	
Based on Polyolester								

RENISO, PLANTO



Product name	Description	Density at 15 °C kg/m ³	Flash point Clev. °C	Kin. visc. at 40 °C mm ² /s	Kin. visc. at 100 °C mm ² /s	VI	Pour-point °C	Main application area
Environmentally Friendly Industrial and Hydraulic Oils – Ester								
PLANTOHYD 15 S*	Range PLANTOHYD S Synthetic ester oils with additives to increase ageing stability. Rapidly biodegradable acc. OECD 301 B > 60%. High wear protection (FZG stage 12). Miscible and compatible with conventional, mineral oil-based hydraulic oils. HVLP according to DIN 51524-3. Designation according to ISO 15380: "HEES". 15 S: DE / 027 / 154 22 S: DE / 027 / 155 32 S: DE / 027 / 156 46 S: DE / 027 / 157 68 S: DE / 027 / 158 Awarded the EU Ecolabel (EEL).	893	200	15	4.1	191	-33	Universally recommended for hydraulic systems from -30 °C to +90 °C (oil sump temperature). The changeover guidelines according to ISO 15380 must be observed.
PLANTOHYD 22 S*		901	200	22	5.4	198	-33	
PLANTOHYD 32 S*		910	206	32	7.1	194	-36	
PLANTOHYD 46 S*		920	300	46	9.2	187	-45	
PLANTOHYD 68 S*		924	300	68	12.3	181	-36	

Industrial Oils

Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Environmentally Friendly Industrial and Hydraulic Oils								
PLANTOSYN 32 HVI*	Range PLANTOSYN HVI Environmentally friendly hydraulic and circulating oils based on synthetic saturated esters . Rapidly biodegradable acc. OECD 301 B > 60%. High wear protection, good seal and non-ferrous metal compatibility, excellent oxidation stability. Fulfils the requirements of HEES hydraulic oils according to DIN ISO 15380 and HVLP according to DIN 51524-3. Awarded the EU Ecolabel (EEL). 32 HVI: DE / 027 / 104 46 HVI: DE / 027 / 105 68 HVI: DE / 027 / 106	915	220	32	6.2	148	-46	Suitable for all mobile and stationary hydraulic systems for which the use of a rapidly biodegradable HEES hydraulic oil according to DIN ISO 15380 is recommended (e.g. in agriculture and forestry). Can be used where unsaturated, synthetic esters have failed. Extension of oil changing intervals possible. Oil sump temperature: -30°C to 100 °C or higher. Observe DIN ISO 15380 when making changeovers. Approvals: MANNESMANN REXROTH Sauer SUNDSTRAND
PLANTOSYN 46 HVI*		913	280	46	8.2	150	-36	
PLANTOSYN 68 HVI*		916	280	68	10.6	143	-27	
PLANTOLUBE POLAR 15 S	Range PLANTOLUBE POLAR S PLANTOLUBE POLAR S oils are environmentally friendly, rapidly biodegradable fluids with extremely low pour point. Thanks to their very high VI they can be used in a wide temperature range. POLAR S oils offer outstanding protection against corrosion and wear. Highly ageing resistant. Surpass the requirements of DIN 51524-3. Miscible and compatible with mineral oil. POLAR 15 S: HVLP 15, HEES 15 POLAR 22 S: HVLP 22, HEES 22 Designation according to DIN ISO 15380	899	156	15	4.1	199	<-48	Gears, bearings, actuators used at extremely low temperatures (e.g. polar regions). Hydraulic systems operated under low temperatures can also be run with oils from the POLAR S range. The changeover guidelines according to DIN ISO 15380 must be observed.
PLANTOLUBE POLAR 22 S		908	166	22	5.7	200	<-51	
Environmentally Friendly Synthetic Circulating and Gear Oils								
PLANTOGEAR 100 HVI*	Range PLANTOGEAR HVI Environmentally friendly circulating and EP gear oils based on special saturated synthetic ester with high ageing stability, good load carrying capacity and excellent wear protection. The products PLANTOGEAR 100 HVI and 150 HVI meet and exceed the requirements according to DIN 51517-3: CLP and AGMA 9005 / E02: EP Awarded the EU Ecolabel (EEL): 100 HVI: DE / 027/177 150 HVI: DE / 027/178	927	>270	100	–	138	-33	Universal CLP gear oils. The products are used in spur, bevel, planetary and worm gears specially in environmentally sensitive areas as well as for lubrication of drives in water protection areas, where by oil leaks groundwater and surface water could be endangered.
PLANTOGEAR 150 HVI*		928	>270	150	–	145	-30	

PLANTO

Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Environmentally Friendly Synthetic Circulating and Gear Oils								
PLANTOGEAR 220 S*	Range PLANTOGEAR S Rapidly biodegradable high performance gear oils on the basis of special, saturated esters. Extremely high thermal and ageing stability, high viscosity index, good viscosity-temperature behaviour. For low-temperature applications. Excellent self- cleaning power due to polar ester structures, reduced friction, excellent wear protection. Good FZG scuffing load carrying capacity, good protection against micropitting, outstanding FE8 performance. The PLANTOGEAR S series surpass the requirements of CLP-E lubricating oils according to DIN 51517-3 together with DIN 51502; AGMA 9005/E02: EP; ISO 6743-6 and ISO 12925-1: CKC, CKD, CKE. The PLANTOGEAR HVI range and PLANTOGEAR S range have been awarded the EU Ecolabel. 100 HVI: DE / 027 / 177 150 HVI: DE / 027 / 178 220 S : DE / 027 / 102 320 S : DE / 027 / 103 460 S : DE / 027 / 107 680 S : DE / 027 / 108	938	280	220	26.2	152	-30	For highly stressed spur, bevel, planetary and worm gears - above all in areas where leakages could present a hazard to soil and to ground or surface water. For both high and low application temperatures. High, shear-stable viscosity index. Can be used as a self-cleaning gear oil.
PLANTOGEAR 320 S*		943	280	320	35.1	155	-30	
PLANTOGEAR 460 S*		951	280	460	48.0	163	-30	
PLANTOGEAR 680 S*		958	280	680	66.0	170	-30	
Environmentally Friendly Slideway Oils / Lubrication Oils								
PLANTOLUBE CGLP 68 S	Range PLANTOLUBE CGLP Slideway oil based on synthetic esters with very good biodegradability. Prevents stick-slip. Load carrying capacity and wear protection are outstanding.	916	280	68	12.1	170	-33	PLANTOLUBE CGLP 68 / 220 S are designed for the use in combination with PLANTOCOOL and PLANTOCUT.
PLANTOLUBE CGLP 220 S		938	280	220	26.2	152	-33	
PLANTOTAC HV 220 N	Range PLANTOTAC HV High-quality adhesive oils based on vegetable oil, environmentally friendly and rapidly biodegradable. Adhesive oils from the PLANTOTAC HV range offer very good VT behaviour and adhesive properties and excellent wear protection. 220 N: CG 220 320 N: CG 320 460 N: CG 460	955	>250	249	31.5	169	-36	Predominantly for so-called loss lubrication, such as on non-oiltight bearings, saw frames, guide ways, joints, bolts, etc.
PLANTOTAC HV 320 N		958	264	381	42.4	166	-27	
PLANTOTAC HV 460 N		977	260	460	43.3	146	-30	
PLANTOTAC HV 100 S	PLANTOTAC HV-N oils are based on ageing-stable synthetic esters. 100 S: CG 100	924	300	100	17.5	193	-36	
PLANTO SCHALUNGSÖL N*	Based on vegetable oil. Rapidly biodegradable. With additives to increase ageing stability. Awarded the EU Ecolabel (EEL): DE / 027 / 150	904	194	12.04	–	–	-15	Primarily used for steel shutterings in the concrete and plastics industry. Flattening the cement surface. Special attention must be paid to compatibility with paintings and elastomers.
PLANTOLUBE SCHALUNGSÖL S	Synthetic ester oil with additives to increase ageing stability.	886	180	4.9	–	–	-18	

Industrial Oils



Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Cylinder Oils								
RENOLIN CH 500	Range RENOLIN CH High-quality, mineral oil-based cylinder oils. Good thermal stability and low coking. Exceed the requirements of Z lubricating oils according to DIN 51510.	929	318	965	44.0	84	-6	For steam temperatures up to 340 °C in stationary equipments, for steam machines up to 325 °C.
RENOLIN CH 700		927	290	2020	81.0	98	-15	For highest steam temperatures up to 380 °C, intermittent working steam machines above 325 °C. Specially for old steam locomotives.
Tacky Oils								
RENOTAC 343	Range RENOTAC High-quality raffinates with lubricity improvers and anti-wear agents. Good EP and adhesive performance (tackiness). Lubricants for all total-loss applications (plain bearings, slideways, guides etc.).	881	230	100	11.3	93	-21	Lubricants for point of loss lubrication, for example slideways, guide ways, slide bearings at wood, packaging and textile machines.
RENOTAC 344		886	245	150	15.0	100	-21	
RENOTAC 345		890	250	220	19.7	100	-15	
RENOTAC 347		899	260	321	24.5	98	-15	

RENOLIN

Product name	Description	Density at 15 °C kg/m³	Flash point Clev. °C	Kin. visc. at 40 °C mm²/s	Kin. visc. at 100 °C mm²/s	VI	Pour-point °C	Main application area
Heat Transfer Oils								
RENOLIN THERM 250	Range RENOLIN THERM Heat transfer oils based on mineral oils with high thermal stability. High heat transfer coefficients.	892	154	10	2.4	50	-42	Application range: -20 °C to 250 °C (film temperature)
RENOLIN THERM 320		870	225	44	6.5	98	-12	Application range: -10 °C to 320 °C (film temperature)
RENOLIN THERM 330 S	Synthetic heat transfer oil with very high thermal stability. Mixture of low volatile alkylbenzenes.	864	225	21	4.1	87	-55	Application range: until 320 °C (film temperature)
RENOLIN THERM 380 S	Synthetic heat transfer oil. Extremely high thermal stability. Minimum coking tendency.	1043	200	17	–	–	-34	Application range: until 380 °C (film temperature)
Special Sealing Oils for Gasometers								
RENOLIN GAS 68	Range RENOLIN GAS RENOLIN GAS are special sealing oils for gasometers. They are based on carefully chosen base oils and contain efficient additives to protect the oils against oxidation and to guarantee a reliable corrosion protection. RENOLIN GAS oils show high compatibility with various gases and contain efficient anti stick-slip components.	898	232	68	7.9	78	-36	RENOLIN GAS oils can be used in various applications. They have a high pumpability and good cold flow behaviour (low pourpoints). Moreover they display very good anti stick-slip characteristics and have low friction coefficients. Especially developed for the use as sealing oils in gasometers.
RENOLIN GAS 70		867	245	68	9.1	113	-39	
RENOLIN GAS 150		880	266	150	15.4	104	-33	
IRM Reference Fluids								
Reference Oil IRM 901	Reference oils for laboratories	882	243	231	19,1	93	-12	In exchange for old ASTM test oils.
Reference Oil IRM 902		935	243	441	18,8	–	–	In exchange for old ASTM test oils.
Reference Oil IRM 903		920	171	29,5	15,4	104	-33	For laboratory tests; principally for elastomer compatibility tests.

GREASES

Greases are viscous, tough to solid lubricants. By selecting suitable oils, thickeners and additives, the properties of the lubricating greases can be optimally adjusted for the most diverse applications with the corresponding experience and know-how.

For example, there are greases for high or very low temperatures, for applications in vacuum, particularly water-resistant and weatherproof, particularly pressure-resistant or capable of creep, rapidly biodegradable or particularly adhesive greases.

With the RENOLIT and PLANTO lubricating greases from FUCHS, you have one of the largest grease ranges on the market - for almost all applications and requirements and for the best possible technical and economical solutions.






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Greases



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Multipurpose / Longlife Greases								
PLANTOGEL ECO 2 FS	—	Li/Ca synth. ester	•	2	200	-30 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease with solid lubrications for lubrication of plain and roller bearings, e.g. commercial vehicles and construction machinery.
PLANTOGEL ECO 2 S (Spray can: PLANTO MULTISPRAY S)	—	Li/Ca synth. ester	—	2	105	-40 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease for plain and roller bearing lubrication, e.g. water turbines or in agriculture and forestry. Good pumpability in central lubricating systems.
PLANTOGEL ECO 402 S	—	Ca synth. ester	—	2	390	-40 / +120	EU Ecolabel 	High performance bio-grease, water (salt water) resistant.
RENOLIT CA-LZ (Spray can: RENOLIT CA-LZ SPRAY)	KP2K-30 ISO-L-X-CCHB2	Calcium Mineral oil	—	2	700	-30 / +120	—	Strongly adhesive, protects from wear even under extreme conditions, very resistant to water wash-out from metallic surfaces, long-term lubrication of passenger cars and commercial vehicles, construction industry, industrial and agricultural machines.
RENOLIT DURAPLEX EP 1	—	Li-X Mineral oil	—	1	105	-30 / +160	—	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO.

PLANTO, RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Multipurpose / Longlife Greases								
RENOLIT DURAPLEX EP 2	–	Li-X Mineral oil	–	2	105	-30 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO, wheel bearings of commercial vehicles, machine tools.
RENOLIT DURAPLEX EP 3	–	Li-X Mineral oil	–	3	105	-20 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO, wheel bearings of commercial vehicles.
RENOLIT FEP 1	KP1N-20 ISO-L-X-BDEB 1	Lithium Mineral oil	–	1	200	-20 / +140	–	Steel mills, quarries, construction equipment and forging presses.
RENOLIT FEP 2	KP2N-20 ISO-L-X-BDEB 2	Lithium Mineral oil	–	2	200	-20 / +140	–	Steel mills, quarries, construction equipment and forging presses, machine tools.
RENOLIT FEP 25	KP2-3N-20 ISO-L-X-BDEB 2-3	Lithium Mineral oil	–	2-3	200	-20 / +140	–	Steel mills, quarries, construction equipment and forging presses.
RENOLIT FLM 2	KPF2N-30 ISO-L-X-CDEB 2	Lithium Mineral oil	•	2	100	-30 / +140	MAN 285 LI-PF 2	For mechanically loaded lubricating points, grease with MoS ₂ , agricultural machines, commercial vehicles, construction industry, quarries and mining, rubber and concrete factory.
RENOLIT GP 1	K1K-30 ISO-L-X-CCEA 1	Lithium Mineral oil	–	1	110	-30 / +120	–	Ageing resistant multipurpose grease with good corrosion protection properties for lubrication of plain and roller bearings, easily pumpable in central lubricating systems.
RENOLIT GP 2	K2K-30 ISO-L-X-CCEA 2	Lithium Mineral oil	–	2	110	-30 / +120	–	Ageing resistant multipurpose grease with good corrosion protection properties for lubrication of plain and roller bearings, easily pumpable in central lubricating systems.
RENOLIT GP 3	K3K-30 ISO-L-X-CCEA 3	Lithium Mineral oil	–	3	110	-30 / +120	–	Ageing resistant multipurpose grease with good corrosion protection properties for lubrication of plain and roller bearings, easily pumpable in central lubricating systems.
RENOLIT LX-PEP 2	KP2N-30 ISO-L-X-CDEB 2	Li-X Mineral oil	–	2	170	-30 / +150	MAN 284 Li-H2, MB 265.1, ZF TE-ML 12, Schaeffler Gruppe, VW TL 52 147 X, Interprecise (IDC-Bearings), Deutsche Bahn	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, needle bearings of cardan shafts, plain and roller bearings, ventilator grease.

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Approvals, re- commendations	Main application area
Multipurpose / Longlife Greases								
RENOLIT LX-PEP 3	KP3N-30 ISO-L-X- CDEB 3	Li-X Mineral oil	–	3	170	-30 / +150	Interprecise (IDC-Bearings)	Multipurpose grease, wheel bearings of motor vehicles, rol- ler bearings of e-motors, plain and roller bearings, ventilator grease.
RENOLIT MP	KP2K-40 ISO-L-X- DCEB 2	Lithium Mineral oil	–	2	35	-40 / +120	DBL 6804.00 MB-Sheet 267.0	Multipurpose grease for lubrica- ting points in passenger cars, commercial vehicles, engines, where constant temperature does not exceed 100 °C, sliding speeds are very low and which are not exposed to high mecha- nical loads.
RENOLIT MP PLUS	KP2K-30 ISO-L-X- CCEB 2	Lithium Mineral oil	–	2	100	-30 / +120	–	High quality EP multipurpose grease with high adhesiveness for the lubrication of plain and roller bearings. Only available in SR cartridges.

RENOLIT, PLANTO



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Plain and Roller Bearings								
PLANTOGEL ECO 2 FS	—	Li/Ca synth. ester	•	2	200	-30 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease with solid lubrications for lubrication of plain and roller bearings, e.g. commercial vehicles and construction machinery.
PLANTOGEL ECO 2 S (Spray can: PLANTO MULTISPRAY S)	—	Li/Ca synth. Ester	—	2	105	-40 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease for plain and roller bearing lubrication, e.g. water turbines or in agriculture and forestry. Good pumpability in central lubricating systems.
PLANTOGEL ECO 402 S	—	Ca synth. ester	—	2	390	-40 / +120	EU Ecolabel 	High performance bio-grease, water (salt water) resistant.
RENOLIT CA-LZ (Spray can: RENOLIT CA-LZ SPRAY)	KP2K-30 ISO-L-X-CCHB2	Calcium Mineral oil	—	2	700	-30 / +120	—	Strongly adhesive, protects from wear even under extreme conditions, very resistant to water wash-out from metallic surfaces, long-term lubrication of passenger cars and commercial vehicles, construction industry, industrial and agricultural machines.
RENOLIT CSX 15	—	CaSX Mineral oil	—	1-2	440	-20 / +180	—	For steel mills, wood pellet presses, paper mills and construction machinery etc. Optimisation regarding pumpability.

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Plain and Roller Bearings								
RENOLIT CX-EP 1	KP1N-30 ISO-L-X-CDEB 1	Ca-X Mineral oil	–	1	110	-30 / +140	–	In general suitable for high thermal and mechanical loads, especially in the chemical, rubber, tire, steel, quarry and excavation industry. Good water and salt water resistance, also resists to weak acids and caustic solutions. Easily pumpable in central lubricating systems.
RENOLIT CX-EP 2	KP2N-30 ISO-L-X-CDEB 2	Ca-X Mineral oil	–	2	110	-30 / +140	Hoesch Rothe Erde	In general suitable for high thermal and mechanical loads, especially in the chemical, rubber, tire, steel, quarry and excavation industry. Good water and salt water resistance, also resists to weak acids and caustic solutions. Easily pumpable in central lubricating systems.
RENOLIT CX-HT 0	–	CaSX Mineral oil	•	0	400	-20 / +160	–	Lubrication of highly loaded roller and friction bearings at high temperatures and where extremely high demands are made on corrosion protection and wear protection; e.g. construction machinery, steel mills
RENOLIT CX-HT 2 (Spray can: RENOLIT UNILOAD)	–	CaSX Mineral oil	•	2	400	-20 / +200	–	Lubrication of highly loaded roller and friction bearings at high temperatures and where extremely high demands are made on corrosion protection and wear protection; e.g. construction equipment, steel mills or tunnel kiln cars
RENOLIT CX-TOM 15	–	CaSX semisynth. base oil	–	1-2	100	-40 / +160	SEW- Eurodrive	Industrial gear bearings, belt conveyors, paper machines, machine tools, mining
RENOLIT CXI 2	–	CaSX Mineral oil	–	2	350	-20 / +160	Ford ESA-M1C 172-A	Steel mills, mining, construction equipment; good resistance against water, weak acids and caustic solutions.
RENOLIT DURAPLEX EP 1	–	Li-X Mineral oil	–	1	105	-30 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO
RENOLIT DURAPLEX EP 2	–	Li-X Mineral oil	–	2	105	-30 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO, wheel bearings of commercial vehicles, machine tools
RENOLIT DURAPLEX EP 3	–	Li-X Mineral oil	–	3	105	-20 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO, wheel bearings of commercial vehicles
RENOLIT FAP 502	KP2N-20 ISO-L-X-BDEB 2	Li/Ca Mineral oil	–	2	500	-20 / +140	–	For high loaded plain and roller bearings with slow sliding speeds.
RENOLIT FEP 1	KP1N-20 ISO-L-X-BDEB 1	Lithium Mineral oil	–	1	200	-20 / +140	–	Steel mills, quarries, construction equipment and forging presses

RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm ² /s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Greases for Plain and Roller Bearings								
RENOLIT FEP 2	KP2N-20 ISO-L-X- BDEB 2	Lithium Mineral oil	–	2	200	-20 / +140	–	Steel mills, quarries, construction equip- ment and forging presses, machine tools
RENOLIT FEP 25	KP2-3N-20 ISO-L-X- BDEB 2-3	Lithium Mineral oil	–	2-3	200	-20 / +140	–	Steel mills, quarries, construction equip- ment and forging presses
RENOLIT FLM 0	–	Lithium Mineral oil	•	0	100	-30 / +120	–	For mechanically loaded lubricating points, grease with MoS ₂ , and additives to improve corrosion protection, EP and AW
RENOLIT FLM 2	KPF2N-30 ISO-L-X- CDEB 2	Lithium Mineral oil	•	2	100	-30 / +140	MAN 285 LI-PF 2	For mechanically loaded lubricating points, grease with MoS ₂ , agricultural machines, commercial vehicles, const- ruction industry, quarries and mining, rubber and concrete factory
RENOLIT FLM 502	KPF2N-20 ISO-L-X- BDEB 2	Li/Ca Mineral oil	•	2	500	-20 / +140	–	For high and very high loaded roller and friction bearings, slow sliding speeds
RENOLIT GP 1	K1K-30 ISO-L-X- CCEA 1	Lithium Mineral oil	–	1	110	-30 / +120	–	Ageing resistant multipurpose grease with good corrosion protection proper- ties for lubrication of plain and roller bearings, easily pumpable in central lubricating systems
RENOLIT GP 2	K2K-30 ISO-L-X- CCEA 2	Lithium Mineral oil	–	2	110	-30 / +120	–	Ageing resistant multipurpose grease with good corrosion protection proper- ties for lubrication of plain and roller bearings, easily pumpable in central lubricating systems
RENOLIT GP 3	K3K-30 ISO-L-X- CCEA 3	Lithium Mineral oil	–	3	110	-30 / +120	–	Ageing resistant multipurpose grease with good corrosion protection proper- ties for lubrication of plain and roller bearings, easily pumpable in central lubricating systems
RENOLIT H 443-HD 88	–	Lithium Mineral oil	–	2-3	110	-30 / +140	RWE Rheinbraun Flender Siemens	Roller and friction bearings operating under specific high strain, in particular strain produced by shocks and vibra- tions e.g. in unbalanced motors, vibra- ting screens, vibrators, soil tampers and electrical machines. Lubrication of fricti- on bearings via Stauffer grease cups, lubricating nipples or central lubricating systems. High loads within a wide speed range
RENOLIT HI-SPEED 2	KHCE2K-40 ISO-L-X- DCEA 2	Lithium synth. base oil	–	2	18	-40 / +120	–	For high-speed bearings, n x dm = 1,4 Mio, machine tools and textile spindles, electrical motor, linear guiding
RENOLIT HI-TEMP 100	KPHC2N-50 ISO-L-X-ED- FB 2	Li-X PAO	–	2	100	-50 / +140	–	Used in a wide temperature range for lubrication of plain and roller bearings of, e.g., electric motors, traction motors, bearings and cardan shafts in polar regions.

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Plain and Roller Bearings								
RENOLIT HI-TEMP 220	KPHC2N-40 ISO-L-X-DDFB 2	Li-X PAO	–	2	220	-40 / +140	–	Used in a wide temperature range for lubrication of plain and roller bearings of , e.g. paper mills (wet sector), truck hub units, and cardan shafts.
RENOLIT HI-TEMP 460	KPHC2N-40 ISO-L-X-DDFB 2	Li-X PAO	–	2	460	-40 / +140	–	Lubrication of plain and roller bearings of conveyor gears (e.g. in open cast mining), pellet presses, paper mills, and for lifetime lubrication in trucks and construction machines.
RENOLIT HLT 2	KPHC2N-40 ISO L-X-DDEB 2	Lithium PAO	–	2	105	-40 / +140	–	For lubricating points at changing ambient temperatures and high requirements, e. g. lifetime lubrication of pneumatic applications, centrifuges, plain and roller bearings.
RENOLIT JP 1619	–	Lithium synth. base oil	–	1	25	-50 / +120	DBL 6804.70 VW TL 52 168 Dana Spicer Bosch MAN	EP-grease with additive for improve corrosion protection, ageing resistance and adhesiveness, lubrication of friction points requiring very good sliding behaviour, low start-up resistance, also at low temperature, e.g. rack and pinion steerings, prop shafts, high-speed bearings.
RENOLIT LX-PEP 1/2	KP1-2N -30 ISO-L-X-CDEB 1-2	Li-X Mineral oil	–	1-2	170	-30 / +150	–	High speed gears for power tools, e.g. power drill, circular hand saw, jigsaw, etc., needle cups and length adjustments of cardan shafts, plain and roller bearings.
RENOLIT LX-PEP 2	KP2N-30 ISO-L-X-CDEB 2	Li-X Mineral oil	–	2	170	-30 / +150	MAN 284 Li-H2, MB 265.1, ZF TE-ML 12, Schaeffler Gruppe, VW TL 52 147 X, Interprecise (IDC-Bearings), Deutsche Bahn	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, needle bearings of cardan shafts, plain and roller bearings, ventilator grease.
RENOLIT LX-PEP 3	KP3N-30 ISO-L-X-CDEB 3	Li-X Mineral oil	–	3	170	-30 / +150	Interprecise (IDC-Bearings)	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, plain and roller bearings, ventilator grease.
RENOLIT LZR 2 H	KP2N-30 ISO-L-X-CDIB 2	Lithium Mineral oil	–	2	200	-30 / +140	Baier & Köppel	Premium multipurpose grease, long-term rust prevention, sealing grease, central lubricating systems, sugar refineries, roof tile factories, paper industry, prevent standstill corrosion, hytrel compatible.

RENOLIT


Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm ² /s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Plain and Roller Bearings								
RENOLIT MP	KP2K-40 ISO-L-X-DCEB 2	Lithium Mineral oil	–	2	35	-40 / +120	DBL 6804.00 MB-Blatt 267.0	Multipurpose grease for lubricating points in passenger cars, commercial vehicles, engines, where constant temperature does not exceed 100°C, sliding speeds are very low and which are not exposed to high mechanical loads.
RENOLIT MP PLUS	KP2K-30 ISO-L-X-CCEB 2	Lithium Mineral oil	–	2	100	-30 / +120	–	High quality EP multipurpose grease with high adhesiveness for the lubrication of plain and roller bearings. Only available in SR cartridges.
RENOLIT POLAR BLACK	–	Lithium PAO	•	1-2	84	-50 / +140	–	Fully synthetic heavy duty all-season grease with solid lubricants for plain and roller bearings of construction machines and mining vehicles exposed to changing ambient temperatures.
RENOLIT PU-FH 300	KP2R-20	PU Mineral oil	–	2	500	-20 / +180	–	Lubricating points exposed to high thermal loads and bearings with slow sliding speeds (asphalt pavers).
RENOLIT PU-MA 2	KPFH-C2R-40 ISO-L-X-DFEB 2	PU PAO	•	2	100	-40 / +180	–	Lubrication of electric motors, hot-air blowers, tumble dryers, black-rubber mixers, paper industry dryers, calander bearings, etc.
RENOLIT S 2	KE1-2G-60 ISO-L-X-EBEA 1-2	Lithium synth. ester	–	1-2	14	-60 / +100	–	Low temperature e.g. electrical motors, instruments, air traffic control systems, refrigerators, air conditioners and transmitter equipment.
RENOLIT SI 400 L	KSI1R-30 ISO-L-X-EFEA 1-2	Lithium Silicone oil	–	1	80	-30 / +180	–	For slightly to normally loaded roller and friction bearings in electric motors, for joints, conveyor chains, ventilators, dryers, controlling equipment, and household appliances. RENOLIT SI 400 L guarantees a good lubrication to metal/plastic pairings.
RENOLIT SI 400 M	KSI2R-30 ISO-L-X-EFEA 2	Lithium Silicone oil	–	2	80	-30 / +180	–	For slightly to normally loaded roller and friction bearings in electric motors, for joints, conveyor chains, ventilators, dryers, controlling equipment, and household appliances. RENOLIT SI 400 M guarantees a good lubrication to metal/plastic pairings.
RENOLIT SI 511 F	–	PU Silicone oil	–	0	80	-40 / +200	–	Especially suitable for re-lubrication of RENOLIT SI 511 L and SI 511 M at very high temperature.
RENOLIT SI 511 L	–	PU Silicone oil	–	1	80	-40 / +200	–	High temperature grease, plain and roller bearings, e.g. electric motors, conveyor chains, furnace carriages, drying equipment, bearing pairs: metal/metal, metal/plastic, plastic/plastic.
RENOLIT SI 511 M	–	PU Silicone oil	–	2	80	-30 / +220	–	High temperature grease, plain and roller bearings, e.g. electric motors, conveyor chains, furnace carriages, drying equipment, bearing pairs: metal/metal, metal/plastic, plastic/plastic.

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm ² /s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Greases for Plain and Roller Bearings								
RENOLIT ST-FTM 0-1	–	PTFE PFPE	–	1	335	-40 / +250	–	For the lubrication of plain and roller bearings and guidances at high temperatures. Also for the lubrication of ejectors of plastic injection moulding machines and tyre heating presses. Do not mix with mineral oil products or other lubricants. The surfaces to be lubricated shall be free of residual oil and grease.
RENOLIT ST-FTM 2	–	PTFE PFPE	–	2	335	-40 / +250	–	For the lubrication of plain and roller bearings and guidances at high temperatures. Also for the lubrication of ejectors of plastic injection moulding machines, tyre heating presses and paint finishing systems. Do not mix with mineral oil products or other lubricants. The surfaces to be lubricated shall be free of residual oil and grease.
RENOLIT ST 8-081/2	–	PTFE PFPE	–	2	510	-20 / +260	–	Do not mix with other lubricants! Surfaces must be free from residual oil and grease! Fully synthetic, thermally stable, resistant to solvents (exception: halocarbon refrigerants), oxidation stable, high load carrying abilities; plain and roller bearings of all industrial sectors, e.g. enamelling lines, drying stoves, machines in the packaging industries, calander bearings, bearings of hot air and smoke gas flaps in power plants
RENOLIT UNITEMP 2	–	Synt. NaX PAO	–	2	180	-50 / +180	–	Plain and roller bearings at high temperatures

RENOLIT, PLANTO









Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Gear boxes								
PLANTOGEL ECO 000 S	—	Li/Ca synth. ester	—	00-000	55	-40 / +120	EU Ecolabel 	Rapidly biodegradable semi-fluid grease for lubrication of plain and roller bearings in commercial vehicles and construction machinery with central lubrication systems. also for gear systems which are exposed to low to medium loads.
RENOLIT CX-EP 0	GPON-30	Ca-X Mineral oil	—	0	120	-30 / +140	—	In general suitable for high thermal and mechanical loads, especially in the chemical, rubber, tire, steel, quarry and excavation industry. Good water and salt water resistance, also resists to weak acids and caustic solutions. Easily pumpable in central lubricating systems.
RENOLIT CX-HT 0	—	CaSX Mineral oil	•	0	400	-20 / +160	—	Lubrication of highly loaded roller and friction bearings at high temperatures and where extremely high demands are made on corrosion protection and wear protection; e.g. construction equipment or steel mills
RENOLIT CX-HT 2 (Spray can: RENOLIT UNILOAD)	—	CaSX Mineral oil	•	2	400	-20 / +200	—	Lubrication of highly loaded roller and friction bearings at high temperatures and where extremely high demands are made on corrosion protection and wear protection; e.g. construction equipment, steel mills or tunnel kiln cars

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm ² /s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Greases for Gear boxes								
RENOLIT EPLITH 00	GP00K-10	Lithium Mineral oil	–	00	420	-10 / +120	Müller- Weingar- ten Schuler	Lubrication of worm gears, bevel gears, spiral-toothed and straight-toothed gears, e.g. forming presses, machine tools, industrial gears
RENOLIT FLM 0	–	Lithium Mineral oil	•	0	100	-30 / +120	–	For mechanically loaded lubricating points, grease with MoS ₂ , and additives to improve corrosion protection, EP and AW
RENOLIT LZR 000	GP00- 000G-40	Li/Ca Mineral oil	–	00-000	43	-40 / +110	MB-Sheet 264.0 MAN 283 LI-P 00/000	Semi-fluid grease for central lubricating systems of commercial vehicles
RENOLIT SF 7-041	GP000K-30	Lithium Mineral oil	–	000	110	-30 / +120	–	Machine tools, labelling and packaging machines with central lubrication sys- tems, industrial gears.
RENOLIT SO-GFB	GP00H-30	Sodium Mineral oil	–	00	250	-30 / +100	–	Fast rotating gears, gear motors, drum motors
RENOLIT SO-GFO 35	GP0H-30	Sodium Mineral oil	–	0	250	-30 / +100	–	Fast rotating gears, agricultural machi- nes

RENOLIT, PLANTO



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm ² /s]	Temperature range [°C]	Approvals, recommendations	Main application area
Biodegradable Greases								
PLANTOGEL ECO 1 N	—	Calcium Rape seed oil	—	1	36	-20 / +70	EU Ecolabel 	Rapidly biodegradable lubricating grease with Ecolabel, e.g. for lock gates or in agriculture and forestry.
PLANTOGEL ECO 2 N	—	Calcium Rape seed oil	—	2	36	-20 / +70	EU Ecolabel 	
PLANTOGEL ECO 000 S	—	Li/Ca synth. ester	—	00-000	55	-40 / +120	EU Ecolabel 	Rapidly biodegradable semi-fluid grease for lubrication of plain and roller bearings in commercial vehicles and construction machinery with central lubrication systems. also for gear systems which are exposed to low to medium loads.
PLANTOGEL ECO 2 FS	—	Li/Ca synth. ester	•	2	200	-30 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease with solid lubrications for lubrication of plain and roller bearings, e.g. commercial vehicles and construction machinery.
PLANTOGEL ECO 2 S (Spray can: PLANTO MULTISPRAY S)	—	Li/Ca synth. ester	—	2	105	-40 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease for plain and roller bearing lubrication, e.g. water turbines or in agriculture and forestry. Good pumpability in central lubricating systems.
PLANTOGEL ECO 402 S	—	Ca synth. ester	—	2	390	-40 / +120	EU Ecolabel 	High performance bio-grease, water (salt water) resistant.

Greases



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Greases for Machine Tools								
RENOLIT CHUCK PASTE	–	Li/Ca Mineral oil	•	2-3	166	-30 / +155	–	Chucks for machine tools and as mounting aide for gears and electrical motors, etc., ejectors of plastic injection moulding machines (up to +100 °C), prevent corrosion and fretting corrosion
RENOLIT CX-EP 2	KP2N-30 ISO-L-X- CDEB 2	Ca-X Mineral oil	–	2	110	-30 / +140	Hoesch Rothe Erde	In general suitable for high thermal and mechanical loads, especially in the chemical, rubber, tire, steel, quarry and excavation industry. Good water and salt water resistance, also resists to weak acids and caustic solutions. Easily pumpable in central lubricating systems.
RENOLIT CX-TOM 15	–	CaSX semisynth. base oil	–	1-2	100	-40 / +160	SEW- Eurodrive	Industrial gear bearings, belt conveyors, paper machines, machine tools, mining
RENOLIT DURAPLEX EP 2	–	Li-X Mineral oil	–	2	105	-30 / +160	–	Roller bearings, electric motor bearings, coupling bearings in the automotive sector, construction machines, forging presses by EUMUCO, wheel bearings of commercial vehicles , machine tools
RENOLIT EPLITH 00	GP00K-10	Lithium Mineral oil	–	00	420	-10 / +120	Müller- Weingarten Schuler	Lubrication of worm gears, bevel gears, spiral-toothed and straight-toothed gears, e.g. forming presses, machine tools, industrial gears
RENOLIT FEP 2	KP2N-20 ISO-L-X- BDEB 2	Lithium Mineral oil	–	2	200	-20 / +140	–	Steel mills, quarries, construction equipment and forging presses, machine tools

RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Greases for Machine Tools								
RENOLIT HI-SPEED 2	KHCE2K-40 ISO-L-X- DCEA 2	Lithium synth. base oil	–	2	18	-40 / +120	–	For high-speed bearings, n x dm = 1,4 Mio, machine tools and textile spindles, electrical motor, linear guiding
RENOLIT PASTE PW	–	CaSX Mineral oil	•	2	350	-20 / +1,200	–	Assembly paste for prevent fretting cor- rosion , e.g. gears, electrical motors, etc., chucks, superheated steam valves, bearing seats on knuckle pins, or spline connections in length adjusters of car- dan shafts
RENOLIT SF 7-041	GP000K-30	Lithium Mineral oil	–	000	110	-30 / +120	–	Machine tools, labelling and packaging machines with central lubrication sys- tems, industrial gears.

Greases



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Rail Vehicles								
RENOLIT HLT 2	KPHC2N-40 ISO L-X- DDEB 2	Lithium PAO	–	2	105	-40 / +140	–	For lubricating points at changing ambient temperatures and high requirements, e. g. lifetime lubrication of pneumatic applications, centrifuges, plain and roller bearings
RENOLIT LX-PEP 1/2	KP1-2N -30 ISO-L-X- CDEB 1-2	Li-X Mineral oil	–	1-2	170	-30 / +150	–	High speed gears for power tools, e.g. power drill, circular hand saw, jigsaw, etc., needle cups and length adjustments of cardan shafts, plain and roller bearings
RENOLIT LX-PEP 2	KP2N-30 ISO-L-X- CDEB 2	Li-X Mineral oil	–	2	170	-30 / +150	MAN 284 Li-H2, MB 265.1, ZF TE-ML 12, Schaeffler Gruppe, VW TL 52 147 X, Interprecise (IDC-Bearings), Deutsche Bahn	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, needle bearings of cardan shafts, plain and roller bearings, ventilator grease
RENOLIT LX-PEP 3	KP3N-30 ISO-L-X- CDEB 3	Li-X Mineral oil	–	3	170	-30 / +150	Interprecise (IDC-Bearings)	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, plain and roller bearings, ventilator grease

RENOLIT



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Extreme High Temperatures								
RENOLIT PU-FH 300	KP2R-20	PU Mineral oil	–	2	500	-20 / +180	–	Lubricating points exposed to high thermal loads and bearings with slow sliding speeds (asphalt pavers)
RENOLIT PU-MA 2	KPFH-C2R-40 ISO-L-X-DFEB 2	PU PAO	•	2	100	-40 / +180	–	Lubrication of electric motors, hot-air blowers, tumble dryers, black-rubber mixers, paper industry dryers, calender bearings, etc.
RENOLIT SI 400 L	KSI1R-30 ISO-L-X-EFEA 1-2	Lithium Silicone oil	–	1	80	-30 / +180	–	For slightly to normally loaded roller and friction bearings in electric motors, for joints, conveyor chains, ventilators, dryers, controlling equipment, and household appliances. RENOLIT SI 400 L guarantees a good lubrication to metal/plastic parings.
RENOLIT SI 400 M	KSI2R-30 ISO-L-X-EFEA 2	Lithium Silicone oil	–	2	80	-30 / +180	–	For slightly to normally loaded roller and friction bearings in electric motors, for joints, conveyor chains, ventilators, dryers, controlling equipment, and household appliances. RENOLIT SI 400 M guarantees a good lubrication to metal/plastic parings.
RENOLIT SI 511 F	–	PU Silicone oil	–	0	80	-40 / +200	–	Especially suitable for re-lubrication of RENOLIT SI 511 L and SI 511 M at very high temperature

Greases



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Extreme High Temperatures								
RENOLIT SI 511 L	–	PU Silicone oil	–	1	80	-40 / +200	–	High temperature grease, plain and roller bearings, e.g. electric motors, conveyor chains, furnace carriages, drying equipment, bearing pairs: metal/metal, metal/plastic, plastic/plastic
RENOLIT SI 511 M	–	PU Silicone oil	–	2	80	-30 / +220	–	High temperature grease, plain and roller bearings, e.g. electric motors, conveyor chains, furnace carriages, drying equipment, bearing pairs: metal/metal, metal/plastic, plastic/plastic
RENOLIT ST-FTM 0-1	–	PTFE PFPE	–	1	335	-40 / +250	–	For the lubrication of plain and roller bearings and guidances at high temperatures. Also for the lubrication of ejectors of plastic injection moulding machines and tyre heating presses. Do not mix with mineral oil products or other lubricants. The surfaces to be lubricated shall be free of residual oil and grease.
RENOLIT ST-FTM 2	–	PTFE PFPE	–	2	335	-40 / +250	–	For the lubrication of plain and roller bearings and guidances at high temperatures. Also for the lubrication of ejectors of plastic injection moulding machines, tyre heating presses and paint finishing systems. Do not mix with mineral oil products or other lubricants. The surfaces to be lubricated shall be free of residual oil and grease.
RENOLIT ST 8-081/2	–	PTFE PFPE	–	2	510	-20 / +260	–	Do not mix with other lubricants! Surfaces must be free from residual oil and grease! Fully synthetic, thermally stable, resistant to solvents (exception: halocarbon refrigerants), oxidation stable, high load carrying abilities; plain and roller bearings of all industrial sectors, e.g. enamelling lines, drying stoves, machines in the packaging industries, calander bearings, bearings of hot air and smoke gas flaps in power plants
RENOLIT UNITEMP 2	–	Synt. NaX PAO	–	2	180	-50 / +180	–	Plain and roller bearings at high temperatures

RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm ² /s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Extreme Low Temperatures								
RENOLIT HI-TEMP 100	KPHC2N-50 ISO-L-X-ED-FB 2	Li-X PAO	–	2	100	-50 / +140	–	Used in a wide temperature range for lubrication of plain and roller bearings of, e.g., electric motors, traction motors, bearings and cardan shafts in polar regions.
RENOLIT JP 1619	–	Lithium synth. base oil	–	1	25	-50 / +120	DBL 6804.70 VW TL 52 168 Dana Spicer Bosch MAN	EP-grease with additive for improve corrosion protection, ageing resistance and adhesiveness, lubrication of friction points requiring very good sliding behaviour, low start-up resistance, also at low temperature, e.g. rack and pinion steerings, prop shafts, high-speed bearings
RENOLIT POLAR BLACK	–	Lithium PAO	•	1-2	84	-50 / +140	–	Fully synthetic heavy duty all-season grease with solid lubricants for plain and roller bearings of construction machines and mining vehicles exposed to changing ambient temperatures.
RENOLIT S 2	KE1-2G-60 ISO-L-X-EBEA 1-2	Lithium synth. ester	–	1-2	14	-60 / +100	–	Low temperature e.g. electrical motors, instruments, air traffic control systems, refrigerators, air conditioners and transmitter equipment
RENOLIT SI 300 M	MSI2P-70	Lithium Silicone oil	–	2	75	-70 / +160	DBL 6812.10 VW TL 767 X	Low temperature grease for electric and electronic equipment, precision machines, sealing grease for radial waves sealing rings, groove rings, sealing-rings; lubrication of sealing bellows
RENOLIT SI 300 S	MSI3P-70	Lithium Silicone oil	–	3	75	-70 / +160	–	Low temperature grease for electric and electronic equipment, precision machines, sealing grease for radial waves sealing rings, groove rings, sealing-rings
RENOLIT UNITEMP 2	–	Synt. NaX PAO	–	2	180	-50 / +180	–	Plain and roller bearings at high temperatures

Greases




Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm ² /s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases for Central Lubricating Systems								
PLANTOGEL ECO 000 S	–	Li/Ca synth. ester	–	00-000	55	-40 / +120	EU Ecolabel 	Rapidly biodegradable semi-fluid grease for lubrication of plain and roller bearings in commercial vehicles and construction machinery with central lubrication systems. also for gear systems which are exposed to low to medium loads.
PLANTOGEL ECO 2 S (Spray can: PLANTO MULTISPRAY S)	–	Li/Ca synth. ester	–	2	105	-40 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease for plain and roller bearing lubrication, e.g. water turbines or in agriculture and forestry. Good pumpability in central lubricating systems.
RENOLIT LX-PEP 2	KP2N-30 ISO-L-X-CDEB 2	Li-X Mineral oil	–	2	170	-30 / +150	MAN 284 Li-H2, MB 265.1, ZF TE-ML 12, Schaeffler Gruppe, VW TL 52 147 X, Interprecise (IDC-Bearings), Deutsche Bahn	Multipurpose grease, wheel bearings of motor vehicles, roller bearings of e-motors, needle bearings of cardan shafts, plain and roller bearings, ventilator grease
RENOLIT LZR 000	GP00-000G-40	Li/Ca Mineral oil	–	00-000	43	-40 / +110	MB-Sheet 264.0 MAN 283 LI-P 00/000	Semi-fluid grease for central lubricating systems of commercial vehicles

PLANTO, RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm ² /s]	Tem- pera- ture range [°C]	Approvals, recommenda- tions	Main application area
Greases for Central Lubricating Systems								
RENOLIT LZR 2 H	KP2N-30 ISO-L-X- CDIB 2	Lithium Mineral oil	–	2	200	-30 / +160	Baier & Köppel	Premium multipurpose grease, long-term rust prevention, sealing grease, central lubricating systems, sugar refineries, roof tile factories, paper industry, prevent standstill corrosion, hytrel compatible
RENOLIT POLAR BLACK	–	Lithium PAO	•	1-2	84	-50 / +140	–	Fully synthetic heavy duty all-season grease with solid lubricants for plain and roller bearings of construction machines and mining vehicles exposed to changing ambient temperatures.
RENOLIT SF 7-041	GP000K-30	Lithium Mineral oil	–	000	110	-30 / +120	–	Machine tools, labelling and packaging machines with central lubrication systems, industrial gears.

Greases



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases with Solid Lubricants								
PLANTOGEL ECO 2 FS	—	Li/Ca synth. ester	•	2	200	-30 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease with solid lubrications for lubrication of plain and roller bearings, e.g. commercial vehicles and construction machinery.
RENOLIT CX-HT 0	—	CaSX Mineral oil	•	0	400	-20 / +160	—	Lubrication of highly loaded roller and friction bearings at high temperatures and where extremely high demands are made on corrosion protection and wear protection; e.g. construction machinery, steel mills
RENOLIT CX-HT 2 (Spray can: RENOLIT UNILOAD)	—	CaSX Mineral oil	•	2	400	-20 / +200	—	Lubrication of highly loaded roller and friction bearings at high temperatures and where extremely high demands are made on corrosion protection and wear protection; e.g. construction equipment, steel mills or tunnel kiln cars
RENOLIT EP X1	—	Lithium Mineral oil	•	1	1050	-15 / +120	Renk CMD	Heavy duty gear coupling grease
RENOLIT FLM 2	KPF2N-30 ISO-L-X-CDEB 2	Lithium Mineral oil	•	2	100	-30 / +140	MAN 285 LI-PF 2	For mechanically loaded lubricating points, grease with MoS ₂ , agricultural machines, commercial vehicles, construction industry, quarries and mining, rubber and concrete factory
RENOLIT FLM 502	KPF2N-20 ISO-L-X-BDEB 2	Li/Ca Mineral oil	•	2	500	-20 / +140	—	For high and very high loaded roller and friction bearings, slow sliding speeds

PLANTO, RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Greases with Solid Lubricants								
RENOLIT FOL 2	—	Lithium PAO	•	2	110	-10 / +21	MPA Stuttgart approved	Very aging resistant, grease for sliding films in engineering, low sliding speed
RENOLIT LX-OTP 2	—	Li-X Polyglycol	•	1-2	360	-40 / +160	MAN	Lubrication of MAN knuckle pins
RENOLIT POLAR BLACK	—	Lithium PAO	•	1-2	84	-50 / +140	—	Fully synthetic heavy duty all-season grease with solid lubricants for plain and roller bearings of construction machines and mining vehicles exposed to changing ambient temperatures.
RENOLIT PU-MA 2	KPFH- C2R-40 ISO-L-X- DFEB 2	PU PAO	•	2	100	-40 / +180	—	Lubrication of electric motors, hot-air blowers, tumble dryers, black-rubber mixers, paper industry dryers, calander bearings, etc.
RENOLIT TFL 2	—	Lithium PAO	•	2	110	-40 / +140	—	With PTFE, for slide-pairs with and without plastic components


Greases



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Perfluorinated Pastes								
RENOLIT ST-FTM 0-1	–	PTFE PFPE	–	1	335	-40 / +250	–	For the lubrication of plain and roller bearings and guidances at high temperatures. Also for the lubrication of ejectors of plastic injection moulding machines and tyre heating presses. Do not mix with mineral oil products or other lubricants. The surfaces to be lubricated shall be free of residual oil and grease.
RENOLIT ST-FTM 2	–	PTFE PFPE	–	2	335	-40 / +250	–	For the lubrication of plain and roller bearings and guidances at high temperatures. Also for the lubrication of ejectors of plastic injection moulding machines, tyre heating presses and paint finishing systems. Do not mix with mineral oil products or other lubricants. The surfaces to be lubricated shall be free of residual oil and grease.
RENOLIT ST 8-081/2	–	PTFE PFPE	–	2	510	-20 / +260	–	Do not mix with other lubricants! Surfaces must be free from residual oil and grease! Fully synthetic, thermally stable, resistant to solvents (exception: halocarbon refrigerants), oxidation stable, high load carrying abilities; plain and roller bearings of all industrial sectors, e.g. enamelling lines, drying stoves, machines in the packaging industries, calender bearings, bearings of hot air and smoke gas flaps in power plants

RENOLIT, PLANTO



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Greases in Spray Cans or Rattle Cans								
DUOTAC ZAHNRADSPRAY	—	Wax Mineral oil	•	—	—	-20 / +150	—	Dry, tenacious lubricating film. Open gears, gear rims, racks, chains, outer lubrication of wire ropes in crane installations, excavators, agricultural machines, rack and pinion railways; to be applied in cold condition, for open toothed-wheel gearing, transportation and conveying systems in the metallurgical industry and roller mills, lubrication/conservation of drag ropes and chains, e.g. in non-metallic mineral processing, solid lubricating film up to +300 °C; Bitumen-free special lubricant with graphite
PLANTO MULTISPRAY S (Grease: PLANTOGEL ECO 2 S)	—	Li/Ca synth. ester	—	2	105	-40 / +120	EU Ecolabel 	Rapidly biodegradable EP multipurpose grease for plain and roller bearing lubrication, e.g. water turbines or in agriculture and forestry. Good pumpability in central lubricating systems.
RENAX GLEITSPRAY (Grease: RENOLIT GL 1)	—	Lithium Semi-synth. base oil	—	1	—	-30 / +140	—	Very adhesive, reduces friction and wear, protects from corrosion, temperature stable, noise-suppressing, suitable for plain and roller bearings and for gear boxes, bowden cables, guide rails, sun roofs, etc.

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Appro- vals, re- commen- dations	Main application area
Greases in Spray Cans or Rattle Cans								
RENOLIT CA-LZ SPRAY (Grease: RENOLIT CA-LZ)	KP2K-30 ISO-L-X- CCHB2	Calcium Mineral oil	–	2	700	-30 / +120	–	Strongly adhesive, protects from wear even under extreme conditions, very resistant to water wash-out from metallic surfaces, long-term lubrication of passenger cars and commercial vehicles, construction industry, industrial and agricultural machines
RENOLIT UNILOAD (Grease: RENOLIT CX-HT 2)	–	CaSX Mineral oil	•	2	400	-20 / +200	–	Lubrication of highly loaded roller and friction bearings at high temperatures and where extremely high demands are made on corrosion protection and wear protection; e.g. construction equipment, steel mills or tunnel kiln cars

RENOLIT



Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubricants	NLGI grade	Base oil viscosity at 40 °C [mm²/s]	Temperature range [°C]	Approvals, recommendations	Main application area
Assembly Pastes								
RENOLIT AS	—	Lithium synth. base oil	—	1	3000	-20 / +140	—	Lubricating and sealing grease, reduces friction, and vibration, prevents stick-slip, resists many liquids and gases, protects from corrosion; pump bearings, ventilators, conveyors, printing machines, cleaning equipment and painting lines
RENOLIT CHUCK PASTE	—	Li/Ca Mineral oil	•	2-3	166	-30 / +155	—	Chucks for machine tools and as mounting aide for gears and electrical motors, etc., ejectors of plastic injection moulding machines (up to +100 °C), prevent corrosion and fretting corrosion
RENOLIT LX-PG 2	—	Li-X Polyglycol	—	1-2	380	-40 / +160	VW TL52150	Plain and roller bearings, guides, gears, assembly aid for brake actuator boots made of EPDM
RENOLIT PASTE PW	—	CaSX Mineral oil	•	2	350	-20 / +1,200	—	Assembly paste for prevent fretting corrosion , e.g. gears, electrical motors, etc., chucks, superheated steam valves, bearing seats on knuckle pins, or spline connections in length adjusters of cardan shafts
RENOLIT SI 300 M	MSI2P-70	Lithium Silicone oil	—	2	75	-70 / +160	DBL 6812.10 VW TL 767 X	Low temperature grease for electric and electronic equipment, precision machines, sealing grease for radial waves sealing rings, groove rings, sealing-rings; lubrication of sealing bellows

Ca-X: Calcium complex; CaSX: Calcium sulfonate complex; HDK: Gel thickener; Li/Ca: Lithium/Calcium; Li-X: Lithium complex; PU: Polyurea; Synth. NaX: Synthetic sodium complex; PFPE: Perfluoropolyether

Greases

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Approvals, recommen- dations	Main application area
Assembly Pastes								
RENOLIT SI 300 S	MSI3P-70	Lithium Silicone oil	–	3	75	-70 / +160	–	Low temperature grease for electric and electronic equipment, precision machines, sealing grease for radial waves sealing rings, groove rings, sealing-rings
RENOLIT SI 708	–	HDK Silicone oil	–	2-3	310	-40 / +200	–	Assembly aid for sealings, insulation grease

RENOLIT

Product name	Classification DIN 51502 ISO 6743-9	Thickener Base oil	Solid lubri- cants	NLGI grade	Base oil viscosi- ty at 40 °C [mm²/s]	Tem- pera- ture range [°C]	Approvals, recommen- dations	Main application area
Greases for Special Applications								
RENOLIT FOL 2	–	Lithium PAO	•	2	110	-10 / +21	MPA Stuttgart approved	Very ageing resistant, grease for sliding films in engineering, low sliding speed
RENOLIT GL 1	–	Lithium Semi- synth. base oil	–	1	–	-30 / +140	–	Very adhesive, reduces friction and wear, protects from corrosion, temperature stable, noise-suppressing, suitable for plain and roller bearings and for gear boxes, bowden cables, guide rails, sun roofs, etc.
RENOLIT SI 300 M	MSI2P-70	Lithium Silicone oil	–	2	75	-70 / +160	DBL 6812.10 VW TL 767 X	Low temperature grease for electric and electronic equipment, precision machines, sealing grease for radial waves sealing rings, groove rings, sealing-rings; lubrication of sealing bellows
RENOLIT SI 300 S	MSI3P-70	Lithium Silicone oil	–	3	75	-70 / +160	–	Low temperature grease for electric and electronic equipment, precision machines, sealing grease for radial waves sealing rings, groove rings, sealing-rings
RENOLIT SI 410 M	KSI2K-55 ISO-L-X- ECEA 2	Calcium Silicone oil	–	2	750	-55 / +120	UBA (D), eurofins (F)	Beer tap grease for lubrication of taps, bearings and sealings of fermentation and filling plants for beverages, food plants and packaging
RENOLIT TFL 2	–	Lithium PAO	•	2	110	-40 / +140	–	With PTFE, for slide-pairs with and without plastic components
SILICONFETT 300 MITTEL BLQ	MSI2P-70	Lithium Silicone oil	–	2	75	-35 / +21	MPA Stuttgart approved	Bridge bearing quality (DIN EN 1337-2)

METAL PROCESSING LUBRICANTS

Today cutting fluids or forming lubricants for non-cutting metalworking have to meet a vast variety of requirements. For example, metalworking fluids must be efficient, economical, and free from environmental and health-damaging ingredients. They must comply with all legislative requirements and ensure stable and reliable manufacturing processes.

In the further production steps, adapted solutions for cleaning the workpieces as well as process-compatible and reliable corrosion preventives are crucial for manufacturing reliability and further product quality.

FUCHS does not only offer a complete and high performance lubricant, hardening media, cleaner and corrosion protection program to you and for your metalworking. In addition, we also offer you the process expertise you need to optimally meet the specific requirements of all machining operations in metalworking.



Metal Processing Lubricants

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Cutting Fluids – Water-miscible



Product name	Con-vent. Emul-sion	Semi synth. Emul-sion	Solution Fully synthetic	Densi-ty at 15 °C	pH Value 5%	Mixing water Hard-ness	Bo-ron-free	Material Recom-menda-tions	Main application area
Core Program									
ECOCOOL AFC 1515 BW	• (EP)	–	–	0.99	9.3	S, M, H	•	Steel alloyed steel, Al*	Multi-functional metalworking fluid, especially for difficult operations such as reaming and threading. DMG-Approval, GROB-Approval
ECOCOOL FERROSTAR MBF	–	• (ME EP)	–	0.97	9.8	S, M, H	•	Steel alloyed steel, Al*	Metalworking fluid for general machining, in particular for special cast alloys and high-alloy steels; good cooling, wetting and flushing properties; greater economy due to low drag-out losses. GROB-Approval
ECOCOOL AFC 1515	•	–	–	0.95	9.4	S, M, H	•	Steel alloyed steel, Al*	For roughing and precision machining, as well as the grinding of steel and aluminium materials; excellent lubricity
ECOCOOL R - 2030 IDM	• (EP)	–	–	1.01	9.5	M	–	Steel alloyed steel, cast iron, Al*	Metalworking fluid for general machining and grinding operations; very low foaming. DMG-Approval
ECOCOOL R - AFC 1515 L	•	–	–	0.99	9.6	M, H	–	Steel, alloyed steel, cast iron, Al*	Metalworking fluid for general and precision machining (such as reaming); low foaming; low misting and good abrasion sedimentation properties
ECOCOOL 68 CF 3-1	–	• (ME)	–	1.02	9.4	M, H	–	Steel alloyed steel, cast iron	Metalworking fluid for general machining and grinding; outstanding flushing; greater economy due to low drag-out losses

ECOCOOL

Product name	Con-vent. Emul-sion	Semi synth. Emul-sion	Solution Fully syn-thetic	Densi-ty at 15 °C	pH Value 5%	Mixing water Hard-ness	Bo-ron-free	Material Recom-menda-tions	Main application area
Core Program									
ECOCOOL R - GRINDSTAR	–	• (ME)	–	1.01	9.6	S, M	–	Steel, alloyed steel, cast iron, Al*	Metaworking fluid for general machining and grinding; very good flushing and high pH buffering properties; for soft water from 2° dH; greater economy due to low drag-out losses
ECOCOOL R - VHCM	–	• (ME)	–	1.01	9.6	M, H	–	Steel, cast iron	Metalworking fluid for general machining operations; greater economy due to low drag-out losses. DMG-Approval
ECOCOOL S-AERO G	–	–	• (EP)	1.06	8.3	S, M	•	Steel, Al*	Fully-synthetic metalworking fluid for the most difficult machining and grinding operations on steel and aluminium alloys; very low foaming; suitable for high pressures and soft water; greater economy due to low drag-out losses
ECOCOOL S-CP	–	–	• (EP)	1.06	9.4	S, M	•	Steel, cast iron, Al*	Fully-synthetic metalworking fluid for the grinding and machining of cast iron and steel; extremely low foaming; good wetting and flushing properties; does not leave sticky residues
ECOCOOL TN 2530	• (EP)	–	–	0.98	9.6	M, H	•	Steel, alloyed steel, Titan, Inconel, Al*	Metalworking fluid with EP additives; universally applicable for aluminium materials, titanium and stainless steels; stable at high pressures and low foaming
ECOCOOL S-CO 5 BF	–	–	•	1.10	8.8	S, M	•	Tungsten carbides, nonferros metals	Fully-synthetic metalworking fluid for the machining and grinding of tungsten carbides; reduces cobalt leaching; low drag-out losses
ECOCOOL VHCM	–	• (ME EP)	–	0.99	9.6	S, M	•	Steel, cast iron	Metalworking fluid for general machining and grinding operations; the boron-free equivalent to ECOCOOL R -VHCM; greater economy due to low drag-out losses
ECOCOOL ALUSTAR BF	•	–	–	0.95	8.0	M	•	Steel, alloyed steel, Al*, zinc- and lead-containing nonferrous materials	High-quality, universal metalworking fluid, especially for machining of zinc- and lead-containing nonferrous materials and critical aluminium alloys; pH neutral; outstanding lubricity; good wetting and flushing properties
ECOCOOL AL-PLUS B	•	–	–	0.93	9.3	S, M, H	•	Alloyed steel, nonferrous materials, Al*	High-quality, universal metalworking fluid, especially for the machining of zinc- and lead-free nonferrous metals and staining-prone aluminium; not suitable for gunmetal; outstanding lubricity

ME = Micro-emulsion; EP = EP additivation; ME EP = Micro-emulsion with EP additives; S = Water hardness: Soft; M = Water hardness: Medium; H = Water hardness: Hard;

* = Check compatibility with critical alloys; • = Yes; – = No; (•) – conditional

Cutting Fluids – Water-miscible

Product name	Con-vent. Emul-sion	Semi synth. Emul-sion	Solution Fully syn-thetic	Densi-ty at 15 °C	pH Value 5%	Mixing water Hard-ness	Bo-ron-free	Material Recom-menda-tions	Main application area
Machining Aluminium									
ECOCOOL AL-PLUS B	•	–	–	0.93	9.3	S, M, H	•	Alloyed steel, nonferrous materials, Al*	High-quality, universal metalworking fluid, especially for the machining of zinc- and lead-free nonferrous metals and staining-prone aluminium; not suitable for gunmetal; outstanding lubricity
ECOCOOL AFC 1515 BW	• (EP)	–	–	0.99	9.3	S, M, H	•	Steel, alloyed steel, Al*	Multi-functional metalworking fluid, especially for difficult operations such as reaming and threading. DMG-Approval, GROB-Approval
ECOCOOL ALUSTAR BF	•	–	–	0.95	8.0	M	•	Steel, alloyed steel, Al*, zinc- and lead-containing nonferrous materials	High-quality, universal metalworking fluid, especially for machining of zinc- and lead-containing nonferrous materials and critical aluminium alloys; pH neutral; outstanding lubricity; good wetting and flushing properties
ECOCOOL AFC 1515	•	–	–	0.95	9.4	S, M, H	•	Steel alloyed steel, Al*	For roughing and precision machining, as well as the grinding of steel and aluminium materials; excellent lubricity; always maintain minimum concentration
ECOCOOL R - 2030 IDM	• (EP)	–	–	1.00	9.4	M	–	Steel, alloyed steel, cast iron, Al*	Metalworking fluid for general machining and grinding; very low foaming. DMG-Approval
ECOCOOL R - AFC 1515 L	•	–	–	0.99	9.6	M, H	–	Steel, alloyed steel, cast iron, Al*	Metalworking fluid for general and precision machining (for example, reaming); low foaming; low misting and good abrasion sedimentation properties
ECOCOOL S-AERO G	–	–	• (EP)	1.06	8.3	S, M	•	Steel, Al*	Fully-synthetic metalworking fluid for the most demanding machining and grinding operations on steel and aluminium alloys; extremely low foaming; suitable for soft water and high pressures; better economy due to low drag-out losses

ECOCOOL

Product name	Con-vent. Emul-sion	Semi synth. Emul-sion	Solution Fully syn-thetic	Densi-ty at 15 °C	pH Value 5%	Mixing water Hard-ness	Bo-ron-free	Material Recom-menda-tions	Main application area
Machining Cast Iron and Low-Alloy Steels									
ECOCOOL FERROSTAR MBF	–	• (ME EP)	–	0.97	9.8	S, M, H	•	Steel, alloyed steel, Al*	Metalworking fluid for general machining, especially for special cast iron alloys and high-alloy steels; excellent cooling, wetting and flushing; low drag-out losses. GROB-Approval
ECOCOOL 68 CF 3-1	–	• (ME)	–	1.02	9.4	M, H	–	Steel alloyed steel, cast iron	Metalworking fluid for general machining and grinding; outstanding flushing; greater economy due to low drag-out losses
ECOCOOL R - GRINDSTAR	–	• (ME)	–	1.01	9.6	S, M	–	Cast iron, steel, Al*	Metalworking fluid for general machining and grinding operations; very good flushing and high pH buffering capacity; for soft water from 2 °dH; low drag-out losses
ECOCOOL R - VHCM	–	• (ME)	–	1.01	9.6	M, H	–	Steel, cast iron	Metalworking fluid for general machining operations; low drag-out losses. DMG-Approval
ECOCOOL VHCM	–	• (ME EP)	–	0.99	9.6	S, M	•	Steel, cast iron	Metalworking fluid for general machining and grinding operations; boron-free equivalent to ECOCOOL R -VHCM; low drag-out losses
Machining High-Alloy Steels and Hot Strength Materials									
ECOCOOL R - AFC 1515 L	•	–	–	0.99	9.6	M, H	–	Steel, alloyed steel, cast iron, Al*	Metalworking fluid for general and precision machining (for example, reaming); low foaming; low misting and good abrasion sedimentation properties
ECOCOOL TN 2530	• (EP)	–	–	0.98	9.6	M, H	•	Steel, alloyed steel, Titan, Inconel, Al*	Metalworking fluid with EP additives; universally applicable for aluminium materials, titanium and stainless steels; high-pressure stable and low foaming.
ECOCOOL AFC 1515	•	–	–	0.95	9.4	S, M, H	•	Steel alloyed steel, Al*	For roughing and precision machining, as well as the grinding of steel and aluminium materials; excellent lubricity
ECOCOOL FERROSTAR MBF	–	• (ME EP)	–	0.97	9.8	S, M, H	•	Steel alloyed steel, Al*	Metalworking fluid for general machining, in particular for special cast alloys and high-alloy steels; good cooling, wetting and flushing properties; greater economy due to low drag-out losses. GROB-Approval

ME = Micro-emulsion; EP = EP additivation; ME EP = Micro-emulsion with EP additives; S = Water hardness: Soft; M = Water hardness: Medium; H = Water hardness: Hard;
 * = Check compatibility with critical alloys; • = Yes; – = No; (•) – conditional

Cutting Fluids – Water-miscible

Product name	Con-vent. Emul-sion	Semi synth. Emul-sion	Solution Fully syn-thetic	Densi-ty at 15 °C	pH Value 5%	Mixing water Hard-ness	Bo-ron-free	Material Recom-menda-tions	Main Application area
Machining Nonferrous Metals (Copper, Brass, Bronze)									
ECOCOOL AL-PLUS B	•	–	–	0.93	9.3	S, M, H	•	Alloyed steel, nonferrous metals, Al*	High-quality, universally applicable metalworking fluid, especially for the machining of zinc- and lead-free nonferrous metals and staining-prone aluminium; not suitable for gunmetal; excellent lubricity; good wetting and flushing
ECOCOOL ALUSTAR BF	•	–	–	0.95	8.0	M	•	Steel, alloyed steel, Al*, zinc- and lead-containing nonferrous materials	High-quality, universally applicable metalworking fluid, especially for the machining of zinc- and lead-containing nonferrous materials; pH neutral; outstanding lubricity; good wetting and flushing
Machining Magnesium									
ECOCOOL 2526 MG-DC	•	–	–	0.97	9.3	H	•	Al*, Mg	High-quality, universally applicable metalworking fluid; specially developed for the machining of magnesium; mixing water > 30 °dH; stable up to 200 °dH without deposits forming
Special Products									
ECOCOOL GS 2000	–	–	•	1.06	8-10	–	•	Cast iron, steel	Thread cutting medium for water pipes; approved by the German DVWG; dyed red
ECOCOOL S CO 5 BF	–	–	•	1.10	8.8	S, M	•	Nonferrous metals	Fully-synthetic metalworking fluid for the machining and grinding of tungsten carbides and nonferrous metals; reduces cobalt leaching and soap formation; low foaming; low drag-out losses

Service Additives for Cutting Fluids

ECOCOOL

Product name	Description/ Features	Application conc. (of the final dilution) [%]	Increased corrosion protection	Increase pH value	Main application area
Top-up Concentrate for Water-miscible Metalworking Fluids					
ECOCOOL AKTIV 78	EP top-up concentrate	0.5% addition to max. 2	–	–	Increases EP performance. Not for machining nonferrous metals and fully-synthetic products
ECOCOOL ALKALISATOR G	Primary alkano- lamine	0.1 - 0.5 steps	(•)	•	Increases pH value
ECOCOOL AKTIV CU	Copper deactivator	0.2 - 3	•	–	Combats the staining and greenish discolouration of nonferrous metals
ECOCOOL AKTIV ALU	Against alumin- ium staining	0.1 - 0.15	•	–	Avoids aluminium staining
NETZMITTEL 12	Wetting agent	0.05 - 0.2	–	–	Improves wetting properties
ECOCOOL AKTIV CPO	Corrosion protection	0.1 - 0.3	•	–	Increases the corrosion protection offered by emulsions and synthetic metalworking fluids
Defoamers, Synergetically Matched to ECOCOOL Water-miscible Metalworking Fluids					
ANTIFOAM 46	Si-organic compound	0.01 - 0.05 (of the concentrate)	–	–	Standard defoamer for emulsions and syn- thetic solutions
ANTIFOAM 46 W	Si-organic compound	0.001 - 0.01 (of the emulsion volume)	–	–	Equivalent to ANTIFOAM 46 but with solubili- zers, therefore mixes well
ANTIFOAM 48	Si-organic compound	0.01 - 0.05 (of the concentrate)	–	–	For use with emulsions and synthetic solutions
ANTIFOAM 51	Si-organic compound	0.01 - 0.05 (of the concentrate)	–	–	For use with emulsions and synthetic solutions
ANTIFOAM 51 G	Si-organic compound	0.001 - 0.01 (of the emulsion volume)	–	–	Equivalent to ANTIFOAM 51 but with solubili- zers, therefore mixes well
ANTIFOAM LC 30 W	Si-organic compound	0.001 - 0.01 (of the emulsion volume)	–	–	Mixture of various defoamers; very broad range of applications
ANTIFOAM WS 1	Ca hardening compounds	0.01 (of the emulsion volume)	–	–	Agents to harden water; as a rule, 0.01% increases water hardness by about 1 °dH, to a max. of 30 °dH

Service Additives for Cutting Fluids

Product name	Application concentration (of the final dilution) [%]	Formaldehyde-free	Fungicide	Bactericide	pH value effect	Main application area
Bactericides and Fungicides for the Maintenance of ECOCOOL Water-miscible Metalworking Fluids						
ACTICIDE OX	0.1 - 0.15	–	–	•	•	Formaldehyde-release agent
TROY SHIELD PA 10	0.1 - 0.2	•	•	–	–	Fungicide for emulsions
ACTICIDE WB 200	0.02 - 0.05 max. 0.1	•	•	–	–	Fungicide for emulsions and synthetic solutions
ACTICIDE MBS	0.1 - 0.2	•	•	•	–	Combination of fungicide and bactericide for emulsions and synthetic solutions

Neat Cutting Fluids

ECOCUT



Product name	Kin. visc. at 40 °C [mm²/s]	Density at 15 °C	Flash point [°C]	Steel	High- Alloy Steel	Alumi- nium	Copper, Copper Alloys	Main application area
ECOCUT 3000 Series								
ECOCUT 3010	11	0.84	160	•	–	•	•	Multipurpose cutting oil; low misting; cop- per inactive; for general machining; univer- sally applicable for cutting and grinding; Vis- cosities 32 and 46 also suitable as hydraulic oils
ECOCUT 3022	22	0.86	180	•	–	•	•	
ECOCUT 3032	32	0.87	210	•	–	•	•	
ECOCUT 3046	45	0.88	220	•	–	•	•	
ECOCUT HFN Series								
ECOCUT HFN 5 LE-HC	4	0.83	136	•	–	•	•	Multipurpose cutting oil; low evaporation and low misting; copper-inactive; for grin- ding and cutting operations with geometri- cally-defined cutting-tools. The low-viscosity versions (5 and 10) are also suitable for honing; the higher viscosities can be used as multi-functional oils (HLP hydraulic oils)
ECOCUT HFN 10 LE-HC	10	0.84	170	•	–	•	•	
ECOCUT HFN 16 LE	15	0.86	200	•	–	•	•	
ECOCUT HFN 22 LE	22	0.85	212	•	–	•	•	
ECOCUT HFN 32 LE	30	0.85	200	•	–	•	•	

Neat Cutting Fluids

Product name	Kin. visc. at 40 °C [mm²/s]	Density at 15 °C	Flash point [°C]	Steel	High- Alloy Steel	Alumi- nium	Copper, Copper Alloys	Main application area
ECOCUT FT Series Containing GTL-Base Oil								
ECOCUT FT 10 HFN	10	0.82	181	•	–	•	•	Special machining oils containing GTL base oils (Fischer- Tropsch process) for grinding and for chip-forming machining operations. Particularly high flashpoint and low evaporation
ECOCUT FT 10 HES	10	0.83	196	•	•	(•)	(•)	
ECOCUT FT 13 HFN	13	0.83	194	•	–	•	•	
ECOCUT 500 Series								
ECOCUT 515	15	0.90	158	•	•	–	–	Cutting oils with high EP additive content for machining operations and especially thread cutting on high-alloy steels (stainless steels). Lower viscosities highly suitable for deep hole drilling
ECOCUT 522	24	0.90	204	•	•	–	–	
ECOCUT 532 LE	30	0.88	200	•	•	–	–	
ECOCUT 600 Series								
ECOCUT 610 A	10	0.85	160	•	•	–	–	Neat cutting oils universally applicable for the most machining operations with definde edge in alloyed steels. Special additives with geometrically-defined cutting edges reduce the friction and increase the tool life. Low misting, chlorine- and zinc-free.
ECOCUT 615 LE	16	0.88	210	•	•	–	–	
ECOCUT 615 A	17	0.87	200	•	•	–	–	
ECOCUT 628 LE	26	0.86	210	•	•	–	–	
ECOCUT 700 Series								
ECOCUT 710 LE	10	0.87	158	•	•	–	–	High performance oils with high EP additive content and universally applicable for opera-tions on high-alloy steels (Cr-Ni steels) in gear machining such as gear hobbing, broaching and deep hole drilling. Low misting, chlorine- and zinc-free
ECOCUT 715 LE	17	0.89	200	•	•	–	–	
ECOCUT 717 LE	17	0.89	200	•	•	–	(•)	
ECOCUT 720 LE	21	0.89	210	•	•	–	–	
ECOCUT 732 LE	32	0.88	190	•	•	–	–	
ECOCUT 800 Series								
ECOCUT 832	29	0.92	180	•	•	–	–	Broaching and special oils for very difficult machining processes and operations on high-alloy (also stainless) steels; particularly for the vertical and horizontal broaching of gear teeth and keyways. Low-misting; zinc-free; high EP additive content
ECOCUT 8532	32	0.94	210	•	•	–	–	
ECOCUT 8535 S	36	0.97	200	•	•	–	–	

ECOCUT, PLANTO

Product name	Kin. visc. at 40 °C [mm ² /s]	Density at 15 °C	Flash point [°C]	Steel	High- Alloy Steel	Alumi- nium	Copper, Copper Alloys	Main application area
PLANTOCUT Series – Environmentally Friendly Metalworking Fluids								
PLANTOCUT 10 SR	10	0.86	206	•	•	•	•	Rapidly biodegradable, ester-based cutting oil. High EP additive content, therefore particularly suitable for operations with geometrically-defined cutting edges such as turning, milling, drilling, etc. Low evaporation and low misting; H304-free
PLANTOCUT 22 SR	22	0.90	215	•	•	•	•	
PLANTOCUT 40 SR	40	0.92	216	•	•	•	•	
PLANTOCUT 18 S-CS	38	0.93	200	•	•	–	–	

Product name	Kin. visc. at 40 °C [mm ² /s]	Density at 15 °C	Flash point [°C]	Steel	High- Alloy Steel	Alumi- nium	Copper, Copper Alloys	Main application area
Minimum Quantity Lubrication (MQL)								
PLANTO Micro 40 SR	40	0.92	216	•	•	•	•	Rapidly biodegradable, ester-based, high EP level minimum quantity lubrication oil, universally applicable for all materials including titanium and titanium alloys. Low evaporation and low misting; can be used with diverse application systems
PLANTO Micro UNI	15	0.88	200	•	•	•	•	
ECOCUT Micro PLUS 20	27	0.84	188	•	•	•	•	Minimum quantity lubrication oils based on fatty alcohols; evaporate with almost no residues. Suitable for all application systems
ECOCUT Micro PLUS 82	20	0.84	172	•	•	•	•	

Neat Cutting Fluids

Product name	Kin. visc. at 40 °C [mm²/s]	Density at 15 °C	Flash point [°C]	Cutting alloy	HSS Steel	Main application area		
Specific Application – Tool grinding								
ECOCUT 7WSE	7.7	0.83	166	•	(•)	Mineral oil-based grinding oil, universally applicable for the grinding and sharpening of HSS and tungsten carbide tools; low aromatic content; combats cobalt solubility; suitable for micro-filtering systems		
ECOCUT HS	5.5	0.80	160	•	(•)	PAO-based machining fluid, universally applicable for the grinding and sharpening of HSS and tungsten carbide tools; low aromatic content; combats cobalt solubility, suitable for micro-filtering systems		
Product name	Kin. visc. at 40 °C [mm²/s]	Density at 15 °C	Flash point [°C]	Steel	High- Alloy Steel	Alumi- nium	Copper, Copper Alloys	Main application area
Specific Application – Gear Machining								
ECOCUT 628 LE	26	0.86	210	•	•	–	–	Universally applicable for all gear machining operations (shaving, hobbing, shaping, etc)
ECOCUT 720 LE	21	0.89	210	•	•	–	–	
ECOCUT HFN 13 LE UNI	13	0.85	194	•	•	•	•	Universally applicable for gear machining and grinding. Approved by the leading grinding machine manufacturers; low misting and low evaporation; available in other viscosities on request. Available in a H 304 version as ECOCUT HFN 13 LE CLP
ECOCUT HSG 211 LE	11	0.84	172	•	•	•	•	High performance grinding oil for gear grinding. Approved by the leading grinding machine manufacturers. Low misting and low evaporation
Specific Application – Spark Erosion								
ECOCUT FE	4	0.81	134	•	•	•	•	Dielectric medium, especially for roughing; free of aromatics
ECOCUT 1520	2,3	0.82	101	•	•	•	•	Dielectric, can be used for roughing as well as for finishing. Despite lower viscosity high flash point >100 °C
Specific Application – Threading								
ECOCUT 522	24	0.89	204	•	•	–	(•)	Solvent raffinate with chlorine-free EP additives; low misting and zinc-free. Especially for the threading of stainless steels and other machining operations on high-alloy materials

ECOCUT

Product name	Kin. visc. at 40 °C [mm ² /s]	Density at 15 °C	Flash point [°C]	Steel	High- Alloy Steel	Alumi- nium	Copper, Copper Alloys	Main application area
Specific Applications – Honing, Finishing								
ECOCUT HFN 5 LE-HC	4	0.84	136	•	(•)	•	•	Honing oil for steel and cast iron; also suitable for super-finishing and high performance honing operations
ECOCUT GBS 5	5	0.83	150	•	(•)	•	•	For grinding and honing of balls and races in the roller bearing industry
ECOCUT FE	4	0.81	134	•	•	•	•	Machining medium for honing and finishing; based on white oils and free of aromatics
Specific Application – Lapping								
ECOCUT HO 74	4	0.84	128	•	•	•	•	Universal lapping oil for all materials and for use with commonly-used lapping powders
Specific Application – Deep Hole Drilling								
ECOCUT MX 10	10	0.86	178	•	•	•	•	Mineral oil-based machining medium with EP additives for deep hole drilling; also suitable for nonferrous metals; conducting a suitability trial is recommended
ECOCUT 717 LE	17	0.89	200	•	•	–	•	
ECOCUT MXB 18	16	0.90	180	•	•	–	–	Mineral oil-based, low-misting machining medium with EP and AW additives for deep hole drilling; especially for the most difficult- to-machine materials; also suitable for drilling fuel injection holes; not suitable for nonferrous metals

Service Additives for Neat Cutting Fluids

Product name	Kin. visc. at 40 °C [mm ² /s]	Copper active	Application concentration [%]	Main application area
Adjusting Concentrate for Cutting Oils				
ECOCUT PLUS AN- NTN	75	–	1 - 2	Adjusting concentrate to reduce oil misting
ECOCUT PLUS KWU	36	•	1 - 100	Adjusting concentrate to improve cutting performance, tool life and surface finish
ECOCUT PLUS 800	27	•	1 - 100	Adjusting concentrate to improve cutting performance, tool life and surface finish; especially for the ECOCUT 800 Series
ECOCUT PLUS HK	32	–	1 - 100	Special adjusting concentrate for the PLANTOCUT Series when copper-inactivity is necessary

Quenching Fluids



Product name	Kin. Visc. at 40 °C mm ² /s	Density at 15 °C	Flash- point	Temperature range Bath temperature [°C]	Main application area
Bright Quenching Oils					
THERMISOL QB 32	31	0.87	225	50 – 90	For heat treatment of tool steels and for quenching process following the nitrocarburizing (Tenifer treatment) in salt baths.
THERMISOL QB 46	41	0.88	220	50 – 100	Heat treatment of alloyed tool and case hardening of steels selected for their ease of hardening. Mainly used in open quenching baths.
High Performance Products based on Mineral Oil					
THERMISOL QH 10	11	0.85	178	50 – 80	Tempering of forged components and semi-finished parts; mainly used in open baths
THERMISOL QH 25	21	0.86	196	50 – 100	Universal hardening oils for the heat treatment of alloyed and unalloyed case-hardening, tempering and tool steels. For open and closed baths
THERMISOL QH 40	42	0.87	216	50 – 110 (max. 150)	
THERMISOL QH 55	48	0.87	220	50 – 110 (max. 150)	For the hardening of tool steels and high-alloy tempering steels. Suitable for open and closed lines

THERMISOL

Product name	Kin. Visc. at 40 °C mm ² /s	Density at 15 °C	pH value 5%	Refracto- meter Factor	Main application area
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High Performance, Hydrocracked-based Products

THERMISOL QH 10 MC	11	0.83	162	50 – 80	Hardening and case-hardening of forged components and semi-finished parts. Mainly used in continuous, open bath lines
THERMISOL QH 30 MC	26	0.84	220	50 – 100 (max. 150)	For the hardening of alloyed and unalloyed case-hardening, tempering and tool steels. Suitable for use in continuous, open and closed bath lines for continuous process
THERMISOL QH 35 MC	36	0.85	230	50 – 100 (max. 150)	For the hardening of alloyed and unalloyed case-hardening, tempering and tool steels. Suitable for use in continuous, open and closed bath lines for charged or continuous process
THERMISOL QH 40 MC	40.7	0.84	236	50 – 110 (max. 170)	For the hardening of tool steels and high-alloy heat-treatable steels. Suitable for use in continuous process in open and closed bath lines

Tempering Oils

THERMISOL QH 80	78	0.88	242	50 – 160 (max. 190)	High performance, warm-bath quenching oils. For the hardening of tool steels and high-alloy heat-treatable steels. Suitable for open and closed lines
THERMISOL QH 120	120	0.90	252	50 – 170 (max. 200)	
THERMISOL QWA 460	467	0.90	300	150 – 200 (max. 275)	

Synthetic High Performance Quenching Oils and High Performance Hot-bath Quenchants

THERMISOL QHY 10	11	0.87	204	50 – 130	Heat treatment of, for example, screws, springs, chains, hand tools, gearbox components, roller bearings and bulk components which are difficult to harden. Also for diverse applications in open and closed lines
THERMISOL QHY 150	148	0.93	316	60 – 260	

Water-miscible Quenching Concentrates

THERMISOL QZS 700	125	1.1	9.0	1.7	Induction and flame hardening and for quenching by flooding. For free-cutting steels, low-alloy forged components as well as for low or unalloyed materials
THERMISOL QZS 700 K	159	1.1	8.9	1.6	
THERMISOL QZS 400	430	1.1	9.0	1.8	For induction and flame hardening and for the quenching by flooding or submersion of free-cutting steels, low-alloy forged components as well as for low or unalloyed materials. Can be used as a substitute for low-viscosity hardening oils. Good washability.
THERMISOL QZS 300 ALU	300	1.08	8.5	2.4	Polymer quenchant for induction and flame hardening of aluminium
THERMISOL QZS 150 MM	320	1.0	9.6 (10%)	4.5	Submersion quenching of free-cutting steels, low-alloy forged components and low or unalloyed materials. Can be used as a substitute for low-viscosity hardening oils. Good washability.
THERMISOL QZS 550	451	1.0	9.6 (10%)	4.6	Submersion quenching of high-alloy forged components and materials. Can be used as a substitute for high-viscosity hardening oils

Cleaner



Product name	Function	Materials	Comments	Corrosion protection, chip/filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m³
Neutral Cleaner									
RENOCLEAN VR 1948	Neutral cleaner for spray and high-pressure cleaning up to 300 bar, salt-free	Fe, Al, Zn, (Cu, Brass) ¹ , Plastics ¹	High pressure suitable; without turbidity point	Temporary, '3% / 10 °dH	8.3 ± 0.3 at 3.5%	1 - 5	60 (20 - 80)	300	1075 ± 10
RENOCLEAN WSO 3005	Neutral cleaner for spray application, salt-free	Fe, Al, Zn, (Cu, Brass) ¹ , Plastics ¹	Mild alkaline version of RC VR 1021! E. g.: can be used before heat treatment	Temporary, '4.0% / DIN water (20 °dH)	9.2 ± 0.3 at 4%	1 - 3	50 (30 - 80)	25	1045 ± 10
RENOCLEAN VR 1021 DGI	Neutral cleaner for spray and high-pressure application up to 600 bar, containing boron	Fe, Al, Brass, Cu	Contains phosphates and boramines, high pressure resistant VW approval A29 2936. Highly demulsifying, virtually foam-free from 25 °C upwards	Temporary, '2.5% / 10 °dH	9.2 at 3.5%	1 - 5	50 (10 - 80)	600	1076 ± 10
RENOCLEAN MSO 3011	Neutral cleaner for spray and high-pressure cleaning, deburring, salt-free	Fe, Al, Brass, Cu	High pressure suitable, boron-free new development for RC VR 1021 DGI! Highly demulsifying, virtually foam-free from 25 °C upwards	Temporary, '2.5% / 10 °dH	9.2 at 3.5%	1 - 5	50 (10 - 80)	600	1064 ± 10

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Product name	Function	Materials	Comments	Corrosion protection, chip/filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m³
Neutral Cleaner									
RENOCLEAN VR 1021 C	Spray cleaner for high-pressure cleaning and high-pressure deburring systems	Fe, Al	Contains phosphates, suitable for high-pressure applications VW approval A29 2862. Demulsifying adjusted, nearly foam-free from 30 °C	Temporary, '2.5% / 10 °dH	9,2 ± 0.3	1 - 5	65 (30 - 80)	30 / HD 350	1082 ± 12
RENOCLEAN MTO 3002	Neutral cleaner for spray, pressure flood, high-pressure cleaning and deburring, salt-free	Fe, Al, Brass, Cu, (Al, Mg) ¹	Residue formation very low, very good temporary corrosion protection. Neutral cleaner and corrosion protection "All-in-one", low-foam application from 20 °C, pressure-dependent	Temporary, '2% / 10 °dH	9.4 ± 0.4	1 - 5	60 (20 - 80)	500 (above 50 °C)	1090 ± 10
RENOCLEAN MTO 3001	Neutral cleaner for spray, immersion, pressure flood and ultrasonic cleaning, salt-free	Fe, Al, Zn, (Cu, Brass) ¹ , Plastics ¹	Residue formation very low, salt-free. Universally applicable, e. g. before heat treatment, low-foam application from 30 °C, sprayable from ~ 45 °C	Temporary, '2% / in DI water	9.6 ± 0.3	1 - 5	65 (30 - 80)	25	1027 ± 10
RENOCLEAN MSO 3004	Neutral cleaner for spray and high-pressure cleaning up to 500 bar, salt-free	Fe, Al, Brass, Cu	Suitable for microfiltration, salt-free, very low residue formation, suitable for high-pressure applications. E. g.: can be used before heat treatment, almost free of foam from 10 °C onwards	Temporary, '2% / in DI water	9.8 ± 0.4	1 - 5	60 (10 - 80)	500 (above 50 °C)	1038 ± 10
RENOCLEAN MSA 3011	Neutral cleaner for spray, pressure flood, high-pressure cleaning and deburring, salt-free	Fe, Al, Brass, Cu, Mg	Contains hydroxides, suitable for high pressure. PSA approval worldwide: MABEC-code Z 000 533 700. Foam-free from 20 °C, depending on pressure and temperature	Temporary, '2.5 % / 10 °dH	9.8 ± 0.3	1 - 5	60 (20 - 80)	500 (above 50 °C)	1046 ± 10
RENOCLEAN VR 1021 CXV	Neutral cleaner for spray, flood and high-pressure cleaning	Fe, Al, Brass, Cu, Mg	Contains hydroxides, suitable for high pressure. VW approval A29 0976. High-pressure cleaning (200 bar, 300 short term), nearly foam-free from 30 °C upwards	Temporary, '2% / 10 °dH	9.8 ± 0.3	1 - 5	65 (30 - 80)	200 (300 short term)	1053 ± 10

Cleaner

Product name	Function	Materials	Comments	Corrosion protection, chip/filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m³
Neutral Cleaner									
RENOCLEAN VR 1021 CXV+	Neutral cleaner for spray, flood and high-pressure cleaning	Fe, Al, Brass, Cu, Mg	Contains hydroxides, suitable for high pressure. VW approval A29 0976. High-pressure cleaning (100 bar, 200 short term), nearly foam-free from 30 °C	Temporary, '2% / 10 °dH	9.8 ± 0.3	1 - 5	65 (30 - 80)	100 (200 short term)	1049 ± 10
RENOCLEAN VR 1021	Neutral cleaner for spray application, salt-free	Fe, Mg, (Al, Cu, Brass) ¹	Residue formation very low, salt-free. E. g.: can be used before heat treatment	Temporary, '2% / 10 °dH	10.2 ± 0.3	1 - 5	65 (30 - 80)	~ 20	1040 ± 10
RENOCLEAN C 20 K 1427	Neutral cleaner for spray application, salt-free	Fe, (Mg) ¹	Very good corrosion protection, low residue formation, salt-free. VW approval A29 2863. E. g.: can be used before heat treatment	Temporary, '1.5% / 10 °dH	10.2 ± 0.3	1 - 5	65 (40 - 80)	~ 15	1044 ± 10
1-Component Products									
RENOCLEAN VR 2950	Spray cleaner for ferrous metals	Fe, cast iron, stainless steel	Contains amines, borates. Spray cleaner for bathtubs before enamelling	Temporary, '2% / 10 °dH	9.6 ± 0.4 in 10 ° DIN water	1 - 4	60 (30 - 80)	~ 20	1055 ± 10
RENOCLEAN MTA 3003	Spray cleaner, suitable for immersion and ultrasonic cleaning	Fe, Al, (Zn, Cu, Brass) ¹	Silicate-free, contains hydroxides, phosphates and amines. Universally applicable, e. g. for engine reconditioning	Temporary, '3% / 10 °dH	9.7 ± 0.3 (3%)	2 - 7	65 (40 - 80)	~ 15	1120 ± 10
RENOCLEAN MSA 3001	Spray cleaner, suitable for immersion and ultrasonic cleaning	Fe, Al, Brass, Cu, Zn	Silicate-free, contains hydroxides, phosphates and amines. Universally applicable, RC MTA 3003 precursor	Temporary, '2.5% / 10 °dH	9.7 ± 0.3 (3%)	2 - 7	60 (40 - 80)	~ 15	1070 ± 10
RENOCLEAN VR 3356	Spray and high-pressure cleaners, disposable in coolants	Fe, Plastics, (Al) ¹	Contains borates and amines. Foam-free from approx. 40 °C, depending on pressure and temperature	Temporary, '2 % / 10 °dH	9.8 ± 0.4	2 - 7	60 (40 - 80)	~ 300	1070 ± 10
RENOCLEAN VR 1798/2	Cleaner for immersion, ultrasonic and manual use	Fe, (Al, Cu, Brass) ¹	Contains phosphates, amines and silicates. Suitable for floor and manual cleaning from 20°C.	(Temporary) '9% / 10 °dH	10.8 ± 0.5	2 - 7	65 (20 - 80)	–	1050 ± 10
RENOCLEAN WSA 4002	Cleaner for spraying, immersion, ultrasonic and manual application	Fe, Al, (Mg) ¹	Contains hydroxides, amines and silicates. For heavily soiled parts and aggregates (e. g. railways, engine and chassis parts)	Temporary, '2.5% / 20 °dH	12.1 ± 0.4 at 2.5%	2 - 7	60 (30 - 70)	15	1085 ± 10

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Product name	Function	Materials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m ³
1-Component Products									
RENOCLEAN FDC 4001	Cleaner for immersion, ultrasonic and manual use	Fe, Mg, Titan, Plastics ¹	Contains phosphates, hydroxides. For cleaning tasks in medical technology, supports spot-free drying. Can be combined with RENOCLEAN MDT 3002.	–	12.1 ± 0.4	2 - 7	65 (50 - 80)	–	1090 ± 10
RENOCLEAN MDA 4002	Immersion and ultrasonic cleaner, sprayable	Fe, Fe galv., Mg, (Al) ¹	Silicate-free, contains hydroxides and phosphates. For cleaning of parts, e. g. with difficult to remove forming lubricants.	Temporary, '2.5 % / 20 °dH	12.2 ± 0.3	1 - 7	65 (40 - 80)	8	1145 ± 10
RENOCLEAN FSA 4017	Spray cleaner, suitable for immersion and ultrasonic cleaning	Fe, (Mg) ¹	Silicate-free, contains hydroxides, amines and phosphates. For cleaning of parts, e. g. with difficult to remove pigment dirt.	Temporary, '2 % / 20 °dH	12.3 ± 0.5	1 - 7	65 (35 - 85)	25	1168 ± 10
RENOCLEAN VR 2999	Spray and immersion cleaner, suitable for ultrasonic cleaning	Fe, cast iron, stainless steel	Contains hydroxide and phosphate. For cleaning of parts, e. g. with difficult to remove pigment dirt.	Temporary, '2% / 10 dH	12.4 ± 0.6	2 - 7	60 (40 - 80)	~ 10	1175 ± 10
Acid Cleaner									
RENOCLEAN FSO 2010	Neutral deruster for spraying, immersion and ultrasonic applications	Fe, (Al)	Chloride-free, applicable after thermal or electro-chemical deburring. Parts are metallically blank after treatment and therefore to be provided immediately with corrosion protection (RENOCLEAN or ANTICORIT products).	–	5.9 ± 0.5 at 5%	2 - 30	50 (20 - 75)	20	1265 ± 20
RENOCLEAN FTM 1001	Rust removal, descaling, phosphoric acid containing, for immersion, ultrasonic and manual application	Fe	Suitable for cleaning calcified and germ-infested cleaning systems. Integrated consumption indicator. Parts are metallically blank after treatment and therefore to be provided immediately with corrosion protection (RENOCLEAN or ANTICORIT products).	–	1.5 ± 0.5 in DI water	5 - 50	30 (20 - 60)	5	1360 ± 10

Cleaner

Product name	Function	Materials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m ³
Special Products									
RENOCLEAN SPEZIAL 2000	Emulsifying universal cleaner for immersion, ultrasonic and manual cleaning of commercial vehicles, tarpaulins, halls and workshops.	All materials ¹	Contains phosphates Specs • FORD 800 51 007. Suitable for all manual cleaning, for immersion, steam jet and floor cleaning equipment	–	10.9 ± 0.4 at 3%	2 - 20	35 (20 - 80)	–	1045 ± 10
RENOCLEAN GXA 3004	Floor, system and hall cleaner	All materials ¹	Odour neutral. For all manual and mechanical applications, especially suitable for floor cleaning devices	–	9.1 ± 0.5 (100%)	1 - 20	20 (20 - 40)	–	1047 ± 10
RENOCLEAN GXA 4014	Universal cleaner for floors, halls and vehicles	All materials ¹	Lime scent. For the mechanical and manual cleaning of workshop, vehicle fleet, etc.	–	11.7 ± 0.5 (1%)	1 - 20	20 (20 - 80)	–	1036 ± 10
RENOCLEAN GSO 3001	Cleaner for transport containers (KLT) for spraying and manual application	All materials ¹	For removing oil, grease, abrasion and transport dust. Designed for container cleaning systems	–	8.5 ± 0.5 (100%)	1 - 10	60 (20 - 80)	5	1004 ± 10
RENOCLEAN GTM 3001	Drying accelerator for spraying and immersion application	Plastics, (metals) ¹	Antistatic effect on plastic surfaces. Dosage in rinse tank e. g. for faster drying of plastic containers	–	8.7 ± 1	0.2 - 1.0	50 (20 - 80)	5	1017 ± 10
RENOCLEAN AKTIV DA	Demulsifier for the separation of emulsified oil	–	Demulsifier with defoaming action. Devices to remove the demulsified oil are necessary (oil separator etc.)	–	9.3 ± 0.5 (100%)	0.05 - 1.0	10 - 90	–	988 ± 10
RENOCLEAN GXM 3001	Defoamer, foam regulating additive especially for cleaning solutions	–	Based on paintable polysiloxanes. Immediate, long-lasting defoaming and de-aerating effect	–	7.4 ± 1 (100%)	0.01 - 0.25	10 - 90	–	998 ± 10
ENTSCHÄUMER W	Defoamer based on silicone oil, foam regulating additive for general use	–	Silicone oil based. May cause interference with subsequent coating	–	7.4 ± 1 (100%)	0.05 - 0.5	–	–	998 ± 10

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Product name	Function	Materials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m ³
Special Products									
RENOCLEAN 431	Industrial assembly aid for rubber and elastomers	–	Lubricant, e. g. for fitting window seals made of rubber, hoses etc. Parts are fixed after drying, no more sliding effect	–	7 ± 1 (100%)	10 - 30	15 - 30	–	1017 ± 10
RENOCLEAN MXO 3001	Vibratory grinding compound with synthetic corrosion protection, mild alkaline cleaner for immersion application	Fe, (Mg, Al, Cu, Brass) ¹	Suitable for all ferrous metals, after testing also for aluminium, zinc and magnesium materials	Temporary, '5% / in DI water	8.8 ± 0.5 (5 %)	2 - 5	20 - 80	–	1029 ± 10
RENOCLEAN FXM 3014	Ready-to-use synthetic welding release agent in finished application concentration	Fe	Forms a continuous moist film that prevents the adhesion of welding beads.	–	8.7 ± 0.5 (100%)	100	Room temperature	–	1032 ± 10

Cleaner

Product name	Function	Materials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m ³
Builder Components									
RENOCLEAN MTA 2001	Builder, neutral, for immersion, pressure flood, flood and spray application	Al, Cu, Brass, (Zn) ¹ , Plastics	Free of borate, silicate and surfactants, phosphate-containing, micro-filterable. *	–	7.8 ± 0.8	2 - 7	65 (20 - 80)	Applicable spraying pressure according to the surfactant component used!	1335 ± 20
RENOCLEAN MTA 4001	Builder, medium alkaline, for immersion, pressure flood, flood and spray application	Fe, (Mg, Al, Cu, Brass, Zn) ¹ , Plastics	Free of borate, silicate and surfactants, phosphate-containing, micro-filterable. *	–	10.0 ± 0.5	2 - 7	65 (20 - 80)		1568 ± 20
RENOCLEAN FTA 4002	Builder, highly alkaline, for immersion, pressure flood, flood and spray application	Fe, Mg, Plastics ¹	Free of borate, silicate and surfactants, containing hydroxide and phosphate, micro-filterable. *	–	12.5 ± 0.5	2 - 8	65 (20 - 80)		1435 ± 20
RENOCLEAN ENTFETTER 39	Builder, highly alkaline, contains silicate, for immersion, pressure flood, flood and spray application	Fe, Mg, Al, (Cu, Brass, Zn) ¹ , Plastics ¹	Borate-free, contains hydroxides, phosphates and silicates. *	–	12.6 ± 0.6	1 - 20	65 (20 - 80)		1370 ± 10
RENOCLEAN FTA 4001	Builder, highly alkaline, for immersion, pressure flood, ultrasonic and spray cleaning, electrolytic degreasing, dephosphating	Fe, Mg, (Cu, Brass) ¹ , Plastics ¹	Borate-free, contains hydroxides, microfilterable. *	–	12.9 ± 0.6 (1 %)	2 - 18	65 (20 - 80)		1433 ± 20
RENOCLEAN VR 3222	Builder with corrosion protection, recyclable, salt-free, for immersion, pressure flood, flood and spray application	All materials	Free of nitrite, borate, silicate and surfactants, amine-containing, micro-filterable, suitable for high-pressure applications. *	Temporary, '3.5% / 10 °dH	8.0 ± 0.4 (3.5%)	2 - 5	60 (20 - 80)		1079 ± 10
RENOCLEAN VR 2729 K	Builder with corrosion protection, recyclable, salt-free, for immersion, pressure flood, flood and spray application	Fe, Mg, (Zn) ¹ , Plastics	Nitrite, borate, silicate and surfactant-free, amine-containing, microfilterable. Protects against corrosion in the vapour phase. *	Temporary, '2 % / DI water	10.8 ± 0.5 (3 %)	2 - 5	60 (20 - 80)		1035 ± 10

Fe – steel, iron, cast iron and stainless steel

1 – to check first

* – Observe product information - use with appropriate surfactant components

RENOCLEAN

Product name	Function	Materials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m ³
Surfactant Components									
RENOCLEAN MST 2001	Cleaning booster for immersion, pressure flooding, ultrasonic and spray cleaning	All materials, Plastics ¹	Micro-filterable, strongly dependent on membrane and operating parameters! *	–	6.0 ± 1	0.3 - 3	65 (40 - 80) Spraying min. 50	5 (7,5 bei > 65)	1027 ± 10
RENOCLEAN MTT 2003	Cleaning booster for immersion, pressure flooding, ultrasonic and spray cleaning	All materials, Plastics ¹	Micro-filterable, strongly dependent on membrane and operating parameters! *	–	7.9 ± 1	0.3 - 3	60 (20 - 80) Spraying min. 40	15 (25 bei >60)	1024 ± 20
RENOCLEAN TENSID 161	Cleaning booster for immersion, ultrasonic and pressure flood cleaning	All materials, Plastics ¹	Micro-filterable, strongly dependent on membrane and operating parameters! *	–	8.6 ± 0.5	0.1 - 1	65 (40 - 80)	2 (>60)	1025 ± 10
RENOCLEAN VR 1500	Cleaning booster for spray cleaning, neutral cleaner	All materials, Plastics ¹	As a neutral cleaner free of corrosion protection components. *	–	8.5 ± 0.5	0.3 - 4	65 (30 - 80)	25	1047 ± 10
RENOCLEAN MDT 3002	Cleaning booster, emulsifying, for immersion, ultrasonic and pressure flood cleaning	All materials, Plastics ¹	Good ultrasonic support, high oil and fat absorption. *	–	9.8 ± 0.8 (3 %)	0.3 - 2	65 (20 - 80)	–	1050 ± 10

Fe – steel, iron, cast iron and stainless steel

1 – to check first

* – Compliance with Regulation (EC) No 648/2004 on detergents

Cleaner

Product name	Function	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Density at 15 °C in kg/m ³
System Cleaner						
GROTANOL FF 1 N	System cleaner for coolant supply systems, registered in most European countries!	Contact time 6 - 24h	–	app. 9 at 1%	1 - 3	~ 1012
RENOCLEAN SMC+	System Cleaner Complete Products for coolant supply systems, does not contain any formaldehyde separators	Contact time 8 - 24h	–	10.4 ± 0.3	1 - 2	1016 ± 10
RENOCLEAN FXM 4005	System cleaner free of biocides and fungicides, for coolant supply systems, basic system without biocide / fungicide	Contact time 8 - 24h	–	10.0 ± 0.5	1 - 2	1005 ± 10
ACTICIDE OX / MBS / WB 200	Biocides and fungicides for system cleaning, in combination with RENOCLEAN FXM 4005 for targeted dosage.	See Service Program Product Management 1 "Preservatives"	–	–	–	–

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Product name	Function	Flash point	Boiling range	Density at 15 °C in kg/m³	Materials	Comments
Solvents						
RENOCLEAN MTS 7001	Cleaning agent based on modified alcohols	≥ 61 °C	165 - 175 °C	880 ± 10 kg/m³	All materials, plastics ¹	Distillable and recyclable. Specially designed for closed cleaning systems!
RENOCLEAN MVS 8015	Hydrocarbon cleaner based on isoparaffin, aromatic-free	≥ 56 °C	179 - 197 °C	760 ± 5 kg/m³		Distillable and recyclable. Specially designed for closed cleaning systems!
RENOCLEAN MVS 8016	Hydrocarbon cleaner based on isoparaffin, aromatic-free	≥ 62 °C	184 - 206 °C	763 ± 10 kg/m³		Narrow boiling range, fast drying, distillable, recyclable. Specially designed for closed cleaning systems!
RENOCLEAN MVS 9014	Hydrocarbon cleaner with corrosion protection, VOC- and aromatic-free	91 ± 5 °C	217 - 255 °C	820 ± 20 kg/m³		Universal application, good corrosion protection due to very thin oil film, VOC-compliant. Good corrosion protection properties, for solvent cleaning systems without distillation.
RENOCLEAN KLV	Hydrocarbon cleaner, VOC- and aromatic-free	≥ 90 °C	217 - 255 °C	810 ± 15 kg/m³		VOC-compliant, universal application, slow evaporation. VW approval A29 2819. Simple application, e. g. for removal of car wax preservation.
FUCHS MULTICLEAN	Hydrocarbon cleaner, low aromatic, environmentally friendly, demulsifying	≥ 61 °C	180 - 330 °C	795 ± 10 kg/m³		Free of caustic and corrosive substances. Universal application in industry and commerce, can be applied with steam jet, good corrosion protection properties.
RENOCLEAN KU	Hydrocarbon cleaner based on isoparaffin, aromatic-free	≥ 61 °C	180 - 220 °C	762 ± 10 kg/m³		Gentle cleaning, for precision mechanics and cleaning of electronic parts, not irritating to the skin. Simple application, for solvent systems without permanent distillation.
RENOCLEAN E	Hydrocarbon cleaner emulsifying, especially low-temperature stable	≥ 63 °C	180 - 330 °C	800 ± 10 kg/m³		For the cleaning of engines, transmissions, chassis, as well as other aggregates and components. Easy application, also available as aerosol in spray can.
RENOCLEAN KAF	Hydrocarbon cleaner, aromatic-free	≥ 61 °C	160 - 245 °C	790 ± 25 kg/m³		Fine cleaning, fast drying. Simple application, suitable for solvent systems (without permanent distillation!)
RENOCLEAN MVS 9005	Wash oil for air cleaning systems	≥ 220 °C	–	840 ± 10 kg/m³		Washing oil for air cleaning systems in aluminium rolling mills, distillable, recyclable. Formerly PENTOWASH 30.

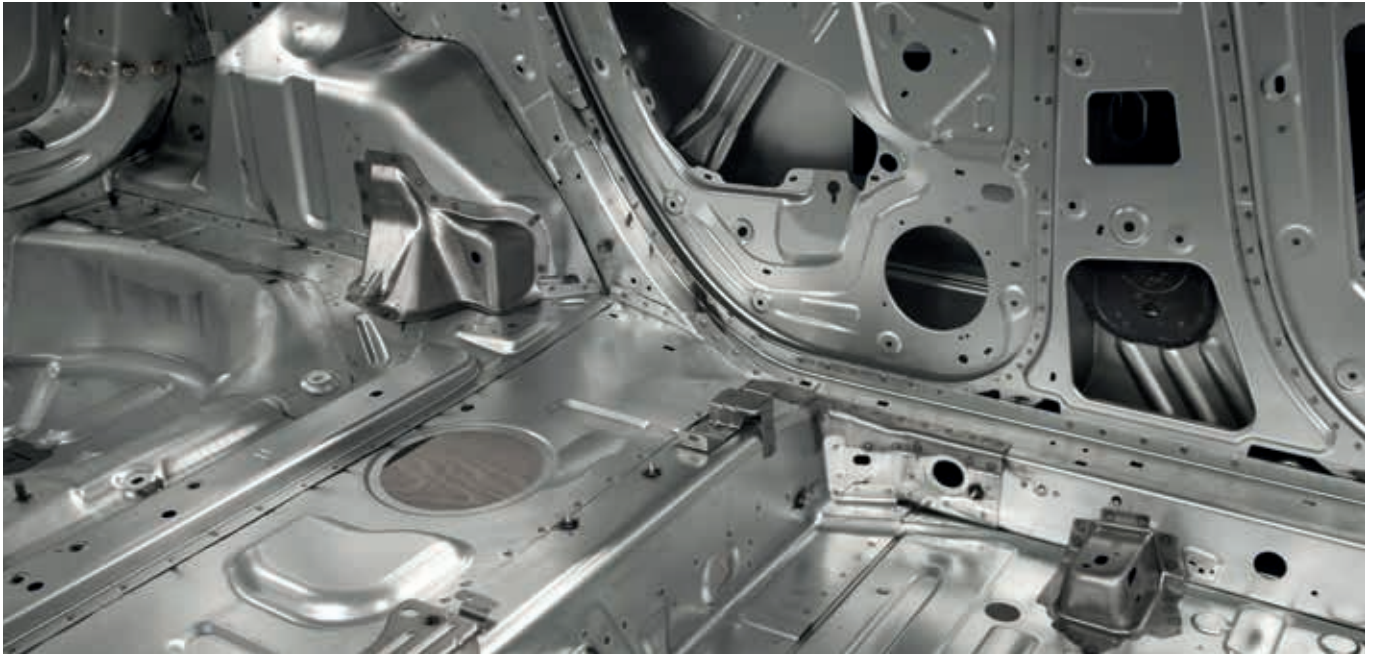
Cleaner

Product name	Function	Materials	Comments	Corrosion protection, chip/ filter test 0/0 at x% in _	pH (2%), if applicable	Concentration range in %	Temperature range	Injection pressure in bar to app.	Density at 15 °C in kg/m³
Corrosion Protection									
RENOCLEAN VR 3222	Temporary, mineral-oil-free corrosion protection for immersion, pressure flooding, flood and spray applications	All materials ¹	Nitrite- and borate-free, suitable for vibratory finishing. Water-miscible	Temporary, '3.5 % / 10 °dH	8.0 ± 0.4 (3.5%)	0.5 - 3	60 (20 - 80)	0.1 - ~100	1079 ± 10
ANTICORIT SKR 3001	Temporary, mineral-oil-free corrosion protection for immersion, pressure flooding, flood and spray applications	Fe, Mg, Al, Zn, (Cu, Brass) ¹	Nitrite-free, protects against corrosion in the vapour phase, suitable for vibratory finishing	Temporary, '2 % / 20 °dH	9.8 ± 0.3	0.5 - 5	60 (20 - 80)	0.1 - 3	1033 ± 10
RENOCLEAN VR 2729 K	Temporary, mineral-oil-free corrosion protection for immersion, pressure flooding, flood and spray applications	Fe	Nitrite-free, protects against corrosion in the vapour phase, suitable for vibratory finishing. Water-miscible	Temporary, '2 % / VE	10.8 ± 0.5 bei 3%	0.5 - 5	60 (20 - 80)	0.1 - ~300	1035 ± 10
ANTICORIT MKR 30	Emulsion cleaner, mineral oil containing corrosion protection emulsion for immersion and flood application	Fe, Al, Cu, Brass	Spray application only possible to a very limited extent, boron and monoethanolamine-free. Water-miscible	Good, '3 % / 20 °dH	8.8 ± 0.4	3 - 5	50 (20 - 60)	2	986 ± 15
RENOCLEAN 1895	Cooling, pressing off and corrosion protection liquid for immersion and filling applications	Fe	Boron, amine and fragrance containing, VVW approval A29 0481	Temporary, '3 % / 10 °dH	9.6 ± 0.3 (3%)	2 - 8	Application-specific	15	1140 ± 10
ANTICORIT SKR 40	Synthetic pressing water and corrosion protection concentrate for immersion and filling applications	Fe	Especially for pressing water applications, drinking water release is cancelled! Water-miscible	Temporary, '4 % / 20 °dH	9.4 ± 0.3 (10%)	3 - 10	20 (10 - 40)	10	1038 ± 10
ANTICORIT SKR 42	Synthetic hydraulic test and corrosion protection concentrate for immersion and filling applications	Fe	Stable against salt and alkali infiltration. Water-miscible	Temporary, '1.5 % / 20 °dH	10 ± 0.5 (10%)	1 - 5	20 (10 - 50)	10	1068 ± 10

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Product name	Function	Application	Comments	Available packaging units	Accessories
Skin Protection Prior to Work					
RENOCLEAN HAND PROTECT MULTI	Silicone-free, fingerprint-free, breathable and universally applicable skin protection cream	Before working with alternating substances (water-soluble and water-insoluble contaminants and irritants)	Forms a thin, invisible and protective film on the skin. Active support of cleaning after work	50 * 100 ml tube 6 * 1000 ml pouch bottle	RENOCLEAN DONA 2000K Dispenser (for pouch bottle)
RENOCLEAN HAND PROTECT PRO	Silicone-free, water-soluble skin protection cream	Before working with heavy non-water-miscible contaminants such as oils, greases, lubricants, metal abrasion, dust and soot.	Forms a non-slip, thin and protective microfilm on the skin. Contains special surfactants that are well tolerated by the skin and actively support the subsequent cleansing of the skin.	50 * 100 ml tube 6 * 1000 ml pouch bottle	
Skin Cleansing					
RENOCLEAN HAND WASH MILD	Mild, soap-free, unscented skin cleansing gel	For the cleansing of highly stressed and sensitive skin	Especially suitable where frequent hand washing is necessary. Free of perfume, dyes and preservatives	25 * 250 ml bottle 6 * 2000 ml pouch bottle	RENOCLEAN DONA 2000K Dispenser (for pouch bottle)
RENOCLEAN HAND WASH INTENSIVE	Hand cleaner with abrasive particles for heaviest soiling	Excellent for cleaning very dirty hands in repair workshops, mechanical engineering etc.	Contains plastic powder as scrubbing agent, slightly perfumed. Is pH-neutral and contains skin caring substances.	25 * 250 ml bottle 6 * 2000 ml pouch bottle	
Skin Care					
RENOCLEAN HAND CARE	Silicone-free skin care cream	After work, it is ideal as a care cream for hands whose natural protective barrier is damaged during work	Contains caring vegetable oils, beeswax and moisture regulating substances. Keeps the skin healthy and strong when used regularly	50 * 100 ml tube 6 * 1000 ml pouch bottle	RENOCLEAN DONA 2000K Dispenser (for pouch bottle)

Corrosion Preventives



Product name	Description	Kin. visc. at 40 °C [mm²/s] DIN 51562	Density at 15 °C [KG/m³]	Consumption [l/m²]	Film weight [g/m²]	Shed storage [Mon.]	Hall storage [Mon.]	FP [°C]	Thixotropic	VCI	Lubricating properties
Corrosion Protection Oils											
ANTICORIT RPO 1001	Conventional corrosion protection oil with low viscosity	8	839	0.002	2	2-4	4-8	146	–	–	–
ANTICORIT RPO 2001	Conventional corrosion protection oil with medium viscosity	15	839	0.005	4	2-4	4-8	194	–	–	–
ANTICORIT RPO 2002	Conventional corrosion protection oil with medium viscosity; improved corrosion protection	15	846	0.005	4	3-5	5-8	190	–	–	–
ANTICORIT RPO 3001	Conventional corrosion protection oil with high viscosity	30	847	0.011	9	3-6	6-9	190	–	–	–
ANTICORIT RPO 3002	Conventional corrosion protection oil with high viscosity; improved corrosion protection	30	851	0.011	9	3-6	6-8	226	–	–	–
ANTICORIT RPO 3003	Conventional corrosion protection oil with high viscosity	30	871	0.010	9	3-5	5-8	226	–	–	–
ANTICORIT RPO BGI 15	Corrosion protection oil with VCI; medium viscosity	14	865	0.006	5	3-6	9-15	155	–	•	•
ANTICORIT RPO BGI 21	Corrosion protection oil with VCI	20,5	902	0.006	6	3-6	9-15	150	–	•	•
ANTICORIT KL 7	Corrosion protection oil; medium viscosity	14	885	0.003	3	2-4	4-8	136	–	–	–

ANTICORIT

Product name	Description	Kin. visc. at 40 °C [mm ² /s] DIN 51562	Density at 15 °C [KG/m ³]	Con- sump- tion [l/m ²]	Film weight [g/m ²]	Shed stor- age [Mon.]	Hall stor- age [Mon.]	FP [°C]	Thix- otro- pic	VCI	Lubri- cating proper- ties
Corrosion Protection Oils											
ANTICORIT LBO 160 TT	Corrosion protection oil with very high viscosity, suitable for use in low temperature situations	160	920	0.038	35	3-6	6-9	150	–	–	•
ANTICORIT RPS 30 N	Corrosion protection oil with good environmental and work safety properties, designed for mill application	23	840	0.011	9	3-6	6-9	230	–	–	–
ANTICORIT RP 30 NT	Corrosion protection oil designed for steel mill application	30	889	0.010	9	3-6	6-9	172	–	–	–
ANTICORIT RPS 28	Corrosion protection oil designed for steel mill application	24	880	0.010	9	3-6	6-9	180	–	–	–
ANTICORIT RP 4107 A	Mid-viscous, non thixotropic modification of ANTICORIT RP 4107 S	15	870	0.010	9	3-6	6-9	130	–	–	–
ANTICORIT RP 4107 LV NT	Low-viscous, non thixotropic modification of ANTICORIT RP 4107 S	12	864	0.007	6	3-6	6-9	150	–	–	–
ANTICORIT PL 3802 39 LV 8	Low-viscous blank washing oil with advanced lubrication, non thixotropic	8	890	0.002	2	3-6	6-9	110	–	–	•
ANTICORIT PL 3802 39 NT	Non thixotropic modification of ANTICORIT PL 3802 39 S	26	880	0.009	8	3-6	6-9	n/a	–	–	•
ANTICORIT PL 39 LV 8	Low-viscous blank washing oil	8	880	0.002	2	3-6	6-9	116	–	–	•
ANTICORIT PL 39 LV 18	Mid-viscous blank washing oil	17	900	0.008	7	3-6	6-9	158	–	–	•
Oily Corrosion Preventative Concentrates											
ANTICORIT RPC 5000	Corrosion protection concentrate	85	887	De- pends on conc.	De- pends on conc.	De- pends on conc.	De- pends on conc.	248	–	–	–
ANTICORIT RPC 5002	Corrosion protection concentrate, low-viscous	45	863					160	–	–	–
ANTICORIT MPC 5000	Corrosion protection concentrate, advanced corrosion protection and lubrication performance; is compatible with chlorinated hydrocarbons	90	890					240	–	–	–
ANTICORIT 03 W C	High-viscous, thixotropic corrosion protection concentrate	160	912					150	•	–	–

Corrosion Preventives

Product name	Description	Kin. visc. at 40 °C [mm²/s] DIN 51562	Density at 15 °C [KG/m³]	Con- sump- tion [l/m²]	Film weight [g/m²]	Shed stor- age [Mon.]	Hall stor- age [Mon.]	FP [°C]	Thix- otro- pic	VCI	Lubri- cating proper- ties
Thixotropic Corrosion Protection Oils											
ANTICORIT BGO 15 X	Thixotropic corrosion protection oil with very good corrosion protection and lubrication properties	14	860	0.006	5	12-24	12-36	130	•	–	–
ANTICORIT LBO 18 X	Thixotropic corrosion protection oil and lubrication properties	15	860	0.006	5	12-18	12-24	130	•	–	–
ANTICORIT TX 11	Thixotropic corrosion protection oil with lubrication properties	40	883	0.034	30 at 60 °C	6-12	12-24	160	•	–	–
ANTICORIT TW 16	High-viscous corrosion protection oil for hot application	32 at 50 °C	883	0.012	11 at 85 °C	6-12	12-24	170	•	–	–
ANTICORIT LSB	Thixotropic corrosion protection oil	140	907	0.011	10 at 70 °C	4-8	8-16	196	•	–	–
ANTICORIT BGI 14 X	Thixotropic corrosion protection oil with VCI	30 at 20 °C	860	0.005	4	12-24	12-36	130	•	•	–
ANTICORIT RP 4107 S	Thixotropic corrosion protection oil for still mill application on body-in-white strips, meets VDA 230-213	35	887	0.012	11	6-12	12-20	210	•	–	–
ANTICORIT RP 4107 LV	Low-viscous modification of ANTICORIT RP 4107 S, meets VDA 230-213	12	865	0.002	2	4-8	8-16	150	•	–	–
ANTICORIT PL 3802 39 S	First generation thixotropic prelube, meets VDA 230-213	60	910	0.012	11	6-12	12-20	180	•	–	•
ANTICORIT PLS 100 T	Second generation thixotropic prelube, meets VDA 230-213	100	910	0.012	11	6-12	12-20	180	•	–	–
ANTICORIT PL 3802 39 LV	Low-viscous modification of ANTICORIT PL 3802 39 S, suitable as blank washing oil, meets VDA 230-213	15	891	0.007	6	4-8	8-16	150	•	–	–
ANTICORIT PL 39 SX	Hotmelt for mill application, meets VDA 230-213	20 at 60 °C	895	–	–	6-12	12-20	175	•	–	•
ANTICORIT LBX 5000	High-viscous corrosion protection oil with good lubrication performance	10 at 100 °C	810	0.010	8 at 120 °C	6-12	12-24	240	•	–	•

ANTICORIT

Product name	Description	Kin. visc. at 40 °C [mm ² /s] DIN 51562	Density at 15 °C [KG/m ³]	Con- sump- tion [l/m ²]	Film weight [g/m ²]	Shed stor- age [Mon.]	Hall stor- age [Mon.]	FP [°C]	Thix- otro- pic	VCI	Lubri- cating proper- ties
Mineral Oil-free Corrosion Protection Products											
ANTICORIT EB 1	Ester based corrosion protection oil for mill application, suitable for embalage sheets	17	951	–	0.3	–	1-3	175	–	–	•
ANTICORIT BML 3	Corrosion protection based on polyglycol, suitable for brake components	35	985	–	–	1-3	3-6	200	–	–	–
ANTICORIT SYNTH	Fully synthetic multipurpose oil, good lubrication properties	102	834	–	–	3-6	6-12	150	–	–	•
Solvent based Corrosion Protection Products											
ANTICORIT RPS 6201	Solvent based corrosion protection oil, 20% evaporation residue, D40 solvent	2.2 at 20 °C	800	0.003	2	6-9	12-18	>40	–	–	–
ANTICORIT RPS 7201	Solvent based corrosion protection oil, 20% evaporation residue, D60 solvent	3.3 at 20 °C	810	0.002	2	6-9	12-18	>60	–	–	–
ANTICORIT RPS 7601	Solvent based corrosion protection oil, 60% evaporation residue, D60 solvent	16.5 at 20 °C	840	0.006	5	9-12	18-24	>60	–	–	–
ANTICORIT 04 W 2	Pre-diluted corrosion protection oil, 75% evaporation residue, isoparaffin	32 at 20 °C	906	De- pends on conc.	De- pends on conc.	6-12	12-20	>60	–	–	–
ANTICORIT 04 W 2 VOC kon.	Pre-diluted corrosion protection oil, 75% evaporation residue, VOC-free according to 31. BlmSchV	47 at 20 °C	920	De- pends on conc.	De- pends on conc.	6-12	12-20	>90	–	–	–

Corrosion Preventives

Product name	Description	Kin. visc. at 40 °C [mm²/s] DIN 51562	Density at 15 °C [KG/m³]	Consumption [l/m²]	Film weight [g/m²]	Shed storage [Mon.]	Hall storage [Mon.]	FP [°C]	Thixotropic	VCI	Lubricating properties
Water Displacing Corrosion Protection Products											
ANTICORIT DFO 6101	Dewatering fluid, leaving a thin, oily protection layer	1.8 at 20 °C	795	0.001	0.8	3-6	6-12	>40	–	–	–
ANTICORIT DFO 6301	Dewatering fluid, leaving a thick, oily protection layer	2.6 at 20 °C	821	0.002	2	6-12	12-24	>40	–	–	–
ANTICORIT DFO 7101	Dewatering fluid, leaving a thin, oily protection layer	2.8 at 20 °C	810	0.001	1	3-6	6-12	>60	–	–	–
ANTICORIT DFO 7301	Dewatering fluid, leaving a thick, oily protection layer	4.6 at 20 °C	825	0.002	2.5	6-12	12-24	>60	–	–	–
ANTICORIT DFO 8101	Dewatering fluid, leaving a thin, oily protection layer	2.4 at 20 °C	780	0.001	1	3-6	6-12	>60	–	–	–
ANTICORIT DFO 8301	Dewatering fluid, leaving a thick, oily protection layer	4 at 20 °C	800	0.002	2.5	6-12	12-24	>60	–	–	–
ANTICORIT DFO 9101	Dewatering fluid, leaving a thin, oily protection layer, VOC-free acc. to 31. BImSchV	4.4 at 20 °C	820	0.001	1	3-6	6-12	>90	–	–	–
ANTICORIT DFO 9301	Dewatering fluid, leaving a thick, oily protection layer, VOC-free acc. to 31. BImSchV	7.2 at 20 °C	835	0.002	2.5	6-12	12-24	>90	–	–	–
ANTICORIT DFW 6101	Dewatering fluid, leaving a thin, waxy protection layer	1.6 at 20 °C	795	0.001	1	3-6	6-12	>40	•	–	–
ANTICORIT DFW 6301	Dewatering fluid, leaving a thick, soft waxy protection layer	3.7 at 20 °C	813	0.002	2	6-12	12-24	>40	•	–	–
ANTICORIT DFW 7101	Dewatering fluid, leaving a thin, waxy protection layer	2.7 at 20 °C	800	0.001	1	3-6	6-12	>60	•	–	–
ANTICORIT DFW 7301	Dewatering fluid, leaving a thick, soft waxy protection layer	4.3 at 20 °C	820	0.002	2.5	6-12	12-24	>60	•	–	–
ANTICORIT DFW 8101	Dewatering fluid, leaving a thin, waxy protection layer	3.5 at 20 °C	780	0.001	1	3-6	6-12	>60	•	–	–
ANTICORIT DFW 8301	Dewatering fluid, leaving a thick, soft waxy protection layer	3.7 at 20 °C	800	0.002	2.5	6-12	12-24	>60	•	–	–
ANTICORIT DFW 9101	Dewatering fluid, leaving a thin, waxy protection layer, VOC-free acc. to 31. BImSchV	4.2 at 20 °C	820	0.001	1	3-6	6-12	>90	•	–	–

ANTICORIT

Product name	Description	Kin. visc. at 40 °C [mm²/s] DIN 51562	Density at 15 °C [KG/m³]	Con- sump- tion [l/m²]	Film weight [g/m²]	Shed stor-age [Mon.]	Hall stor-age [Mon.]	FP [°C]	Thix- otropic	VCI	Lubri- cating proper- ties
Water Displacing Corrosion Protection Products											
ANTICORIT DFW 9301	Dewatering fluid, leaving a thick, soft waxy protection layer, VOC-free according to 31. BlmSchV	6.7 at 20 °C	835	0.002	2.5	6-12	12-24	>90	•	–	–
ANTICORIT DFW 9302	Dewatering fluid, leaving a thick, soft waxy protection layer, VOC-free according to 31. BlmSchV	7.1 at 20 °C	841	0.002	2	6-12	12-24	>100	•	–	–
ANTICORIT DFW 9601	Dewatering fluid, leaving a very thick, soft waxy protection layer, VOC-free according to 31. BlmSchV	10.4 at 40 °C	855	0.006	5	9-15	18-24	>100	•	–	–
Water-miscible, Oily Corrosion Protection Products											
ANTICORIT WMC 7000	Emulsifiable corrosion protection oil with medium performance	60 at 40 °C	922	De- pends on conc.	De- pends on conc.	De- pends on conc.	De- pends on conc.	>175	–	–	–
ANTICORIT WMC 9000	Emulsifiable corrosion protection oil with high performance	100 at 40 °C	942					>175	–	–	–
ANTICORIT MKR 10	Emulsifiable corrosion protection oil with high performance and thixo-tropic characteristics	128 at 40 °C	931					>150	•	–	–
ANTICORIT WOK 50	Emulsifiable corrosion protection oil with high performance, semi stable emulsion	180 at 40 °C	948					>190	–	–	–
Water-miscible, Synthetic Corrosion Protection Product											
ANTICORIT SKR 3001	Mineral oil-free (synthetic) corrosion protection concentrate	–	1030	De- pends on conc.	De- pends on conc.	–	<1	–	–	•	–

Corrosion Preventives

Product name	Description	Kin. visc. at 40 °C [mm²/s] DIN 51562	Density at 15 °C [KG/m³]	Consumption [l/m²]	Film weight [g/m²]	Shed storage [Mon.]	Hall storage [Mon.]	FP [°C]	Thixotropic	VCI	Lubricating properties
Waxy Corrosion Protection Products											
ANTICORIT BW 10	Solvent containing corrosion protection wax, leaves a transparent touch dry film, contains Barium	FT - 4mm nozzle = 20s	822	0.022	18	6-24	12-36	>40	•	–	–
ANTICORIT BW 12	Solvent containing corrosion protection wax, leaves a transparent touch dry film	FT - 4mm nozzle = 17s	809	0.010	8	6-18	12-24	>60	•	–	–
ANTICORIT BW 366	Solvent containing corrosion protection wax, leaves a brownish touch dry film with very high corrosion protection properties	FT - 4mm nozzle = 60s	885	0.056	50	12-36	12-36	>60	•	–	–
ANTICORIT HKW 350	Solvent containing corrosion protection wax for cavity protection	FT - 4mm nozzle = 27s	950	0.032	30	12-36	12-36	>60	•	–	–
ANTICORIT CPX 3373	Solvent-free corrosion protection wax with very high performance, air curing properties	dyn. visc. at 300 1/min = 350m*Pas	1005	0.075	75	>36	>36	>135	•	–	–
ANTICORIT CPX 3373 LV	Solvent-free corrosion protection wax with very high performance, reduced thixotropic properties, easy to spray, air curing	dyn. visc. at 300 1/min = 170m*Pas	1005	0.030	30	>24	>24	>220	•	–	–
ANTICORIT CPX 3373 HV	Solvent-free corrosion protection wax with very high performance, air curing properties	dyn. visc. 300 1/min = 190m*Pas	1005	0.075	75	>36	>36	>160	•	–	–
ANTICORIT CPX 3373 UBC	High-viscous modification of ANTICORIT CPX 3373 for under body coating	dyn. visc. at 300 1/min = 500m*Pas	1005	–	–	>36	>36	>130	•	–	–
ANTICORIT WMW 9001	Water-miscible wax dispersion	–	1000	0.05	50	6-18	12-24	–	•	–	–
ANTICORIT CPW 9001	Water-miscible wax dispersion for automotive outer skin protection	–	1000	0.05	50	6-18	12-24	–	•	–	–

*) Value of pure product

ANTICORIT

Product name	Description	Iron, Steel	Copper	Aluminium	Film weight [g/m ²]	Shed storage [Mon.]	Hall storage [Mon.]	FP [°C]	Thixotropic	VCI	Lubricating properties
Volatile Corrosion Inhibitor											
ANTICORIT VCI UNI O 40	Corrosion protection of closed systems like tanks and gear boxes. Miscible with diesel, gear oils, and other mineral oils	•	•	•	–	≤6	≤24	>120	–	•	–
ANTICORIT VCI UNI IP 30	Corrosion protection of closed packaging systems like blisters and card board boxes. Suitable for e.g. power train components and body in white parts	•	•	•	–	≤6	≤24	>60	–	•	–
ANTICORIT VCI FE W 50	Additive to improve corrosion protection properties of water based cleaners, cutting fluids and cooling fluids in closed systems	•	–	–	–	≤6	≤24	–	–	•	–
ANTICORIT VCI UNI W 50	Additive to improve corrosion protection properties of water based cleaners, cutting fluids and cooling fluids in closed systems	•	•	•	–	≤6	≤24	–	–	•	–
ANTICORIT VCI UNI S	Corrosion protection for easy application in already existing packaging solutions.	•	•	•	–	≤6	≤24	–	–	•	–
ANTICORIT VCI UNI T	Corrosion protection for easy application in already existing packaging solutions. Suitable for small cavities.	•	•	•	–	≤6	≤24	–	–	•	–
ANTICORIT VCI UNI G	Corrosion protection for easy application in already existing packaging solutions. Contains desiccants.	•	•	•	–	≤6	≤24	–	–	•	–
ANTICORIT VCI UNI FI	VCI film for corrosion protection during shipping and storage (available as gusseted bags, flat films and others).	•	•	•	–	≤6	≤24	–	–	•	–
ANTICORIT VCI UNI P	VCI paper for protection during shipping and storage.	•	•	•	–	≤6	≤24	–	–	•	–
ANTICORIT VCI FE P	VCI paper for protection of steel during shipping and storage.	•	–	–	–	≤6	≤24	–	–	•	–

Corrosion Preventives

Product name	Description	Kin. visc. at 40 °C [mm ² /s] DIN 51562	Density at 15 °C [KG/m ³]	Con- sump- tion [l/m ²]	Film weight [g/m ²]	Shed storage [Mon.]	Hall storage [Mon.]
Spray Cans							
ANTICORIT 5F	Rust preventative spray forming a thin film with active water displacement	3.7 at 20 °C	813	–	2.5	6-12	12-24
ANTICORIT BW 366	Solvent-based and durable high performance corrosion protection wax	FT 4mm nozzle = 60s	885	–	50	12-36	12-36
ANTICORIT DFG	Classic anti-corrosive oil and contact spray, multipurpose	84	887	–	5	6-12	12-24
ANTICORIT RPC	Rust preventative spray, after evaporation a highly viscous film is formed	84	887	–	5	6-12	6-24
ANTICORIT CPX 3373	Solvent-free*) and durable high performance corrosion protection wax	Dyn. visc. at 300 1/min = 350m*Pas	1005	–	50	>36	>36
ANTICORIT SYNTH	Synthetic multipurpose oil	102	834	–	15	3-6	6-12
RENOCLEAN E	Highly effective degreaser for multipurpose use	1.7 at 20 °C	800	–	0	–	–
ANTICORIT RP 4107 S	Thixotropic corrosion protection oil, meets VDA 230-213	35	887	–	11	6-12	12-20

*) Value of pure product

ANTICORIT

Product name	Description	Kin. visc. at 40 °C [mm ² /s] DIN 51562	Density at 15 °C [KG/m ³]	Con- sump- tion [l/m ²]	Film weight [g/m ²]	Shed storage [Mon.]	Hall stor- age [Mon.]	FP [°C]	Thix- otro- pic	VCI	Lubri- cating proper- ties
Maintenance Fluids for Dewatering Products											
ANTICORIT DF 6000	Waterdisplacement, leaving no residues, D40 solvent	1.2 at 20 °C	780	–	–	–	–	>40	–	–	–
ANTICORIT DF 7000	Waterdisplacement, leaving no residues, D60 solvent	2.0 at 20 °C	795	–	–	–	–	>60	–	–	–
ANTICORIT DF 8000	Waterdisplacement, leaving no residues, isoparaffin solvent	1.8 at 20 °C	777	–	–	–	–	>60	–	–	–
ANTICORIT DF 9000	Waterdisplacement, leaving no residues, D90 solvent, VOC-free according to 31. BImSchV	2.8 at 20 °C	810	–	–	–	–	>90	–	–	–
ANTICORIT DFC 1001	Additive to enhance waterdisplacement properties	6.2 at 20 °C	953 at 20 °C	–	–	–	–	>105	–	–	–

Forming Lubricants

RENOFORM



Product name	Description	Kin. visc. at 40 °C [mm²/s] DIN 51562	Density at 15 °C [KG/m³]	Copper strip test	Applica- tion	Materials	FP [°C]
RENOFORM MZA 08 T	Drawing oil for car body pressing used as spot lubricant	25	878	2	Drawing, deep- drawing	Steel and aluminium	154
RENOFORM MCO 3802 SN	Drawing oil for car body pressing, meets VDA 230-201	100	918	2	Drawing, deep- drawing	Steel and aluminium	142
RENOFORM MCO 3028	Suitable for drawing and deep-drawing of bodywork sheet metal for medium and difficult forming operations, meets VDA 230-201	130	918	4	Drawing, deep- drawing	Cold rolled, galvanised and aluminium surfaces	155
RENOFORM MCO 3028 LV	Mainly free of residues after evaporation, evaporation residue corresponds with RENOFORM MCO 3028	2.5 at 20 °C	775	4	Stamping, forming and easy drawing	Cold rolled, galvanised and aluminium surfaces	260

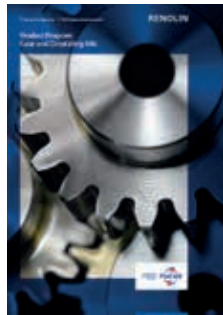
Non Water-miscible Cold Rolling Oils

RENOFORM WO 52 B	Rolling oil for cold rolling and skin pass	6	850	1	Cold rolling, rerolling, corrosion protection	Iron and non- ferrous metals	>100
RENOFORM WO 79 A	Rolling oil with high EP additivation	9	854	1	Cold rolling with high reduc- tions per pass	Iron and non- ferrous metals	>170

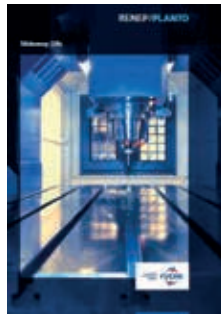
Industrial Product Brochures



Hydraulic oils – RENOLIN



Gear and general lubricating oils – RENOLIN



Slideway oils – RENEPLANTO



Lubricants for the paper industry



Refrigeration oils – RENISO



Special lubricants for wind power plants



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ECOCOL GLOBAL 10 PLUS – Metal working fluid for aerospace



Water-miscible and Neat Cutting Fluids – ECOCOL/ECOCUT



ECOCUT FT-Series – Non water-miscible cooling lubricants based on innovative base oils

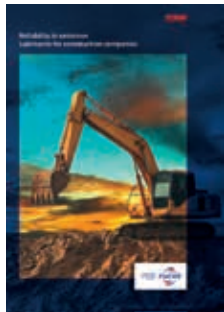


Cleaner for metalworking – RENOCLEAN



Lubricants in spray cans

Automotive Product Brochures



Lubricants for construction companies



XTL for commercial vehicles



Lubricants for stationary gas engines



Lubricants for agricultural machinery



Rapidly biodegradable industrial lubricants – PLANTO



TITAN XTL for passenger cars



Motor oils for passenger cars



Gear oils



Automatic transmission fluids



Antifreeze, brake fluids and service products



XTL-Video for passenger cars



XTL-Video for commercial vehicles



Oils are not all created equal



Automatic transmission fluid flushing

This image shows a blank sheet of white paper designed for writing. It features ten horizontal blue lines spaced evenly down the page. On the left side, there are four vertical red lines that serve as margins, creating three distinct columns of varying widths. The top of the page has a small rectangular area defined by these lines, likely intended for a header or title. The rest of the page is open space between the horizontal lines, suitable for body text.

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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 employees will be glad to advise on products for the application in question and also on our full range of lubricants.

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