



Product Program
Mining Lubricants

MOVING YOUR WORLD

LUBRICANTS.
TECHNOLOGY.
PEOPLE.





FUCHS LUBRICANTS CO.

We do not just develop lubricants. We develop intelligent solutions for highly complex challenges.

Our goal: to keep our customers' world in motion. Efficient, sustainable, reliable.
Today and tomorrow.

What can we move for you?



FUCHS LUBRICANTS CO.

Facts and figures

COMPANY:

FUCHS LUBRICANTS COMPANY, Harvey, IL, USA

FUCHS LUBRICANTS CANADA LTD., Langley BC and
Cambridge ON, Canada

LUBRICANTES FUCHS DE MEXICO SA DE CV
Querétaro, Qro., Mexico

NORTH AMERICAN PLANT LOCATIONS:

New Castle, DE; Harvey, IL; Kansas City, KS;

Fairhaven, MA; Huntington, WV;

Langley, BC; Cambridge, ON; Querétaro, Qro., MX

Since 1931, we have been pursuing the same goal: to keep the world moving. With innovative and technological lubricant solutions that have a sustainable impact on the future. Unconditional reliability is our top priority, it is the foundation of our company and the basis for everything that defines us.

Reliability is both a driver and a demand. And it's a promise to all our customers in the fields of automotive suppliers and OEMs, mechanical engineering, metal processing, mining and exploration, aerospace, energy, construction and transport, agriculture and forestry, as well as the paper, steel, metal, cement, forging and food industries, qualified lubricant dealers, car dealerships and workshops.

Long-term experience, high development strength and the fulfillment of far-reaching standards are the basis for the special quality of our world-leading product brands. We deliver solutions that are simply more efficient and therefore more sustainable. We always think in holistic solutions. For the development of individual solutions, we enter into an intensive customer dialog with you. This is the way we live up to our claim of moving your world.

MOVING YOUR WORLD



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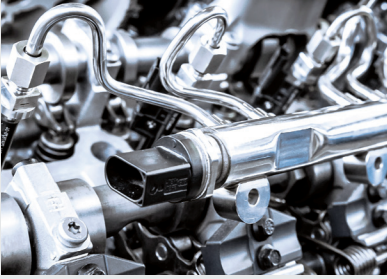
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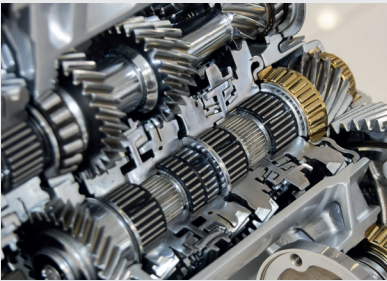


The World of Mining Lubricants



Engine Oils

FUCHS stands as a leading manufacturer of specialized lubricants for heavy-duty mining machinery. With a comprehensive range tailored for mining applications, FUCHS introduces the revolutionary XTL®-Technology. This advanced technology ensures that engine oils readily reach critical components, providing an instant protective film even under the harshest mining conditions. This guarantees reliable protection throughout the entire service life of the oil, minimizing wear and reducing fuel consumption. For operators, this means smoother engine startups, extended equipment life, and lower oil consumption.



Transmission Fluids for the Mining Industry

In the demanding environment of mining, modern transmission systems require cutting-edge, high-performance lubricants to ensure smooth operation and durability. FUCHS transmission fluids protect gears from wear, enhancing gear-shifting efficiency and extending the lifespan of your machinery. With the increasing trend toward extended service intervals, including lifetime fills, the quality of the oil becomes even more crucial. As a trusted partner of the world's leading gear manufacturers, FUCHS stays ahead of industry needs. Choose TITAN gear oils for unmatched reliability and performance in your mining operations.



Industrial Oils for Mining Applications

The efficiency and reliability of operations hinge on specialized lubricant solutions. Whether it's transmitting power through hydraulic fluids, gearing forces through gear oils, generating power with turbine oils, or maintaining cooling systems with refrigeration oils, FUCHS industrial oils play a pivotal role. FUCHS offers readily biodegradable lubricants that provide an environmentally friendly alternative to traditional hydrocarbon-based products. Our extensive range of industrial oils delivers high-performance solutions for diverse mining applications, driving productivity, enhancing efficiency, and significantly reducing energy consumption and CO₂ emissions.



Lubricating Greases / Pastes for Mining Equipment

Where machinery is subject to extreme conditions, the right lubricating grease is essential for long-term performance. FUCHS lubricating greases, composed of high-quality base oils and specially selected thickeners, are designed to withstand the harshest environments. Enhanced with specific additives, these greases serve as critical structural elements, providing lifetime lubrication and protection against wear. FUCHS also offers grease pastes, containing special solid lubricants, that excel in high-load or rapidly changing conditions. The comprehensive range of FUCHS lubricating greases and pastes delivers optimal technical and economic solutions for a wide array of mining applications, ensuring maximum efficiency and durability.

Blast Hole Drill

A mining blast hole drill is a robust machine essential for creating holes in rock or earth for blasting in mining and construction. Mounted on tracks or wheels, it is powered by a diesel engine driving a rotating drill bit that applies high-speed, downward force. Operated from a comfortable cabin, drill operators control parameters like rotation speed and feed pressure. Specialized lubricants are crucial, enduring extreme pressures and temperatures during drilling to minimize friction, ensure smooth operation, and prolong the drill's lifespan. These drills are indispensable for preparing blasting sites efficiently, contributing significantly to mining productivity and safety.

GEAR OILS

RENOLIN UNISYN CLP

GREASES

RENOLIT CSX ULTRA 15

HYDRAULIC FLUIDS

RENOLIN XTREME TEMP
RENOSAFE FIREPROTECT



Haul Truck

HYDRAULIC FLUID

RENOLIN XTREME TEMP
RENOSAFE FIREPROTECT

GREASES

RENOLIT CSX ULTRA 15

SPECIALTY PRODUCTS

RENOLIN UNISYN CLP



A mining haul truck, engineered for robust performance in demanding environments, relies on specialized lubricants to ensure smooth operation and longevity. From its powerful diesel engine to the intricate hydraulic systems and heavy-duty components, these trucks require high-performance lubricants that withstand extreme pressures, temperatures, and contaminants commonly found in mining operations. These specialized lubricants play a crucial role in minimizing wear, reducing friction, and maintaining optimal efficiency, thereby maximizing uptime and productivity in the challenging conditions of mining sites worldwide.



ENGINE OILS

TITAN CARGO 15W40

COOLANTS

TITAN HD ANTIFREEZE

Roof Support Shield



GEAR OIL
RENOLIN UNISYN CLP

A mining roof support shield is essential for safety in underground mining, by stabilizing the mine roof. Specially formulated lubricants endure high pressures, extreme temperatures, and contaminants like dust and water. These lubricants not only minimize friction and reduce wear but also enhance equipment reliability and longevity. They play a crucial role in maintaining smooth operation under challenging underground conditions, ensuring continuous safety and efficiency in mining operations.



GREASES

SOLCENIC LW ASSEMBLY GEL

FR HYDRAULIC FLUID

SOLCENIC GM20

Hydraulic Shovel

GREASES

RENOLIT CSX ULTRA 15



A mining hydraulic shovel is a powerful machine essential for excavating large volumes of earth, rock, or ore in mining operations. It features a high-capacity diesel engine, sturdy chassis, and precise hydraulic system for controlling its massive boom stick and bucket. Operating under tough conditions, it relies on specialized lubricants to minimize friction, reduce wear, and ensure reliable performance over its operational lifespan. Equipped with a reinforced bucket and advanced operator cabin technology, these shovels maximize efficiency and safety in demanding mining environments.

ENGINE OILS

TITAN CARGO 15W40

COOLANTS

TITAN HD ANTIFREEZE

HYDRAULIC FLUIDS

RENOLIN XTREME TEMP
RENOSAFE FIREPROTECT

GEAR OIL

RENOLIN UNISYN CLP

GREASES

RENOLIT CENTAK OG (S&W)



Ball Mill

TRUNION OIL

RENOLIN CLP PLUS 150



A ball mill is a vital piece of equipment used for grinding and blending materials in various industries. Its cylindrical drum rotates on its axis, housing grinding media like metallic balls or rods. As the drum turns, the media crushes and mixes materials fed into the mill, producing finely ground particles. Operating under demanding conditions, ball mills require specialized lubricants to maintain smooth operation, reduce wear on moving parts, and withstand high pressures, temperatures, and contamination from dust and debris. Proper lubrication ensures the longevity and efficiency of ball mills, crucial for achieving precise particle size distribution in ore processing, cement production, and other manufacturing processes.

SPECIALTY PRODUCTS

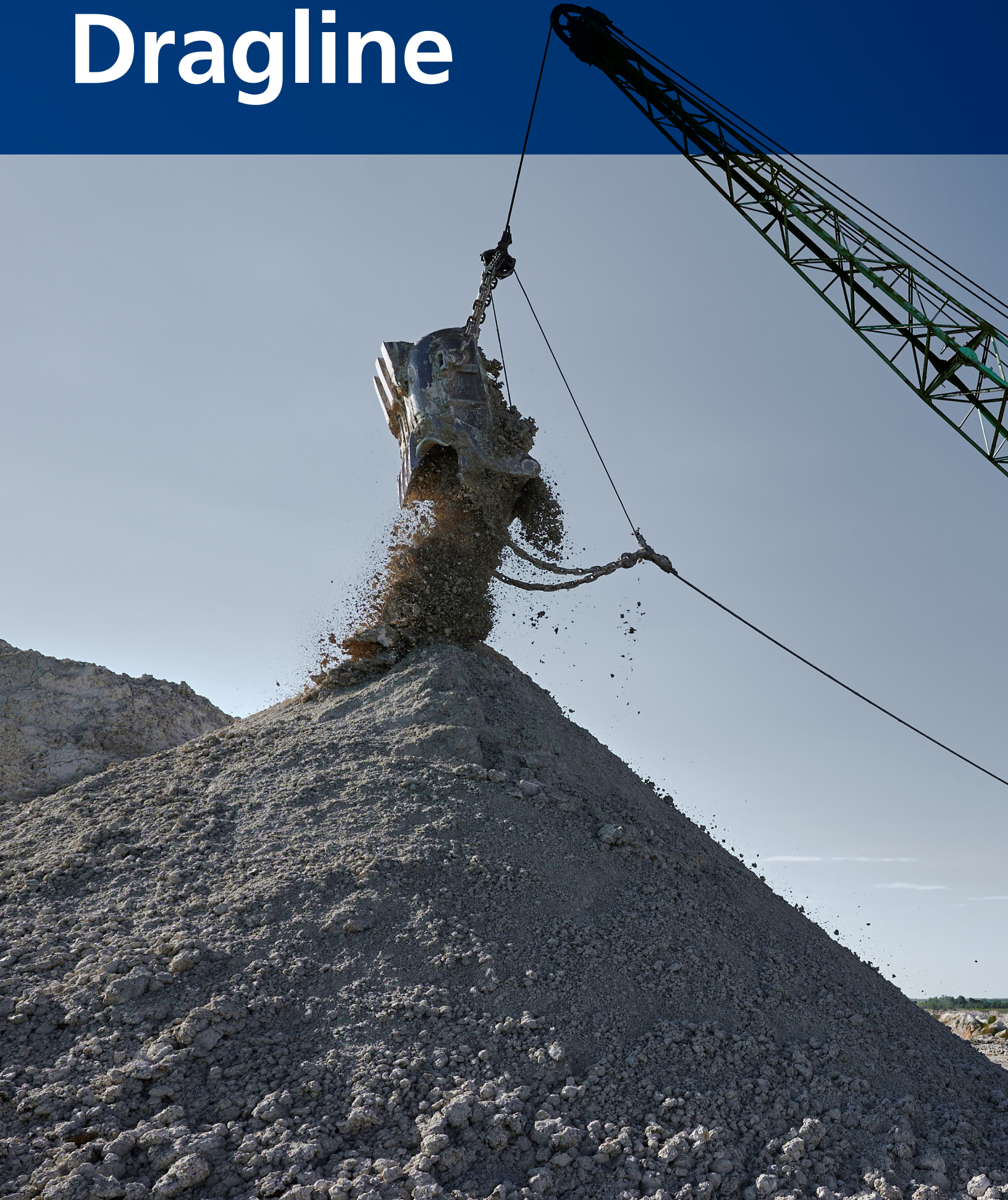
CEPLATTYN SF 10

GEAR OIL

RENOLIN CLP PLUS 220



Dragline



A mining dragline is a massive machine used in surface mining to excavate large quantities of earth. It operates like a crane with a large bucket suspended from a lattice boom. Powered by electric motors or diesel engines, it's designed for heavy-duty operations, moving with precision to scoop and lift materials. Given its size and workload, proper lubrication with specialized oils is essential. These lubricants withstand high loads, temperatures, and harsh conditions, minimizing friction between critical components and ensuring smooth, reliable operation crucial for continuous mining productivity.

WIRE ROPE LUBRICANT

ANTICORIT WRC 21
RENOLIT LUBRENE WIRE ROPE NF

GEAR OILS

RENOLIN CLP 1000

GREASES

RENOLIT CENTAK OG (S&W)
RENOLIT CSX ULTRA 15
RENOLIT CENTAK WCL



HD/Mobile Equipment

TITAN


Product name	Description	Specifications	Approvals	FUCHS Recommendations
HD/Mobile Equipment - Multigrade Engine Oils				
TITAN CARGO SAE 15W-40	Premium Performance, fuel-economy engine oil for a variety of commercial vehicle diesel engines. Specially developed for vehicles with extended service intervals, exhaust after treatment and turbocharger.	ACEA E11, E7 API CK-4/CJ-4/ SN CAT ECF-3 JASO DH-2	ALLISON TES-439 (439-34862020) CUMMINS CES 20086 DETROIT DIESEL 93K222 DEUTZ DQC III-18 LA FORD M2C171-F1 MACK EOS-4.5 MAN M 3775 MB-APPROVAL 228.31 MTU DDC TYPE 2.1 RENAULT RLD-3 VOLVO VDS-4.5	ACEA E9 MAN M 3575 RENAULT RLD-4
TITAN CARGO SAE 10W-30	Premium Performance, fuel-economy engine oil, specially developed for commercial vehicle diesel engines with extended service intervals, exhaust after treatment and turbocharger.	ACEA E11, E7 API CK-4/CJ-4 CAT ECF-3 JASO DH-2	CUMMINS CES 20086 DEUTZ DQC III-18 LA DTFR 15C100 (MB 228.31) FORD M2C171-F1 MACK EOS-4.5 MAN M 3775 MB-APPROVAL 228.31 MTU DDC TYPE 2.1 RENAULT RLD-3 VOLVO VDS-4.5	ACEA E9 DETROIT DIESEL 93K222 MAN M 3575 RENAULT RLD-4
TITAN CARGO SAE 10W-30	Premium 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 CK-4/CJ-4/ SN CAT ECF-3	CUMMINS CES 20086 DEUTZ DQC III-18 LA FORD M2C171-F1 MACK EOS-4.5 MAN M 3775 MB-APPROVAL 228.31 MTU DDC TYPE 2.1 RENAULT RLD-3 VOLVO VDS-4.5	DETROIT DIESEL 93K222 MAN M 3575 RENAULT RLD-4

HD/Mobile Equipment

TITAN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
HD/Mobile Equipment - UTTO				
TITAN UTTO TO-4 SAE 10W	High Performance multi-functional 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 30W	High Performance multi-functional lubricant for hydraulics in 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 50W	High Performance multi-functional lubricant for hydraulics in construction machinery.	API GL-4 CAT TO-4	-	KOMATSU KES 07.868.1
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
AGRIFARM UTTO MP	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	DANA-OHTM-UTTO VOLVO WB 101 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 CAT TO-2 CLAAS / LANDINI / SAME-Transmission CNH MAT 3505, 3506, 3509, 3525, 3526, 3540 DIN 51524 : HLP (-D) 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
HD/Mobile Equipment - Gear Oils				
TITAN SUPERGEAR 80W-90	TITAN SUPERGEAR SAE 80W-90 is a mineral universal gear oil for use in manual transmissions and axle gearboxes in both passenger cars and commercial vehicles.	API GL-4/GL-5	EvoBus 26.000-025 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 85W-140	Ultra High Performance Gear Oil for extended oil change intervals.	API GL-4/GL-5	EvoBus 26.000-025 ZF TE-ML 05A, 12E, 16D, 21A (ZF000650)	MIL-L-2105 D VOLVO 97310

HD/Mobile Equipment

TITAN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
HD/Mobile Equipment - ATF				
TITAN ATF III	TITAN ATF III Automatic Transmission Fluid is formulated to provide protection for modern Automatic transmissions in On and Off Highway Commercial Vehicles as well as Passenger Cars TITAN ATF III is especially shear-stable and foam resistant which will ensure optimum performance over the extended life of the fluid while providing excellent oxidation and heat resistance, maintaining friction control under severe operation and protecting components against wear and corrosion.	-	-	DEXRON III
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.	-	DEXRON III (H) DTFR 13C100 (MB 236.1) 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)	ALLISON C-4 ALLISON TES 389 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 9 407 858 BMW 83 22 9 407 859 CAT TO-2 FORD MERCON OPEL 19 40 707 OPEL 19 40 767 VOLVO 97340 VW TL 521 62 (G 052 162) ZF TE-ML 02F, 03D, 09, 11B, 17C

Product name	Description	Specifications	Approvals	FUCHS Recommendations
HD/Mobile Equipment - Antifreeze/Engine Coolant				
TITAN ANTIFREEZE	TITAN Antifreeze is a universal product made from industrial and TITAN Antifreeze grade virgin ethylene glycol containing industry leading additive components, which performs equally well in all metal engines. In addition, it contains a special defoamer to ensure protection against foaming for the life of the coolant and a special inhibitor to provide unsurpassed protection to all metal surfaces. TITAN Antifreeze is recommended for all domestic and imported vehicles. TITAN Antifreeze is also available in a pre-diluted 50/50 with de-ionized filtered water form as a convenient product to assure proper coolant mixture for top-off and cooling system fill.	-	-	AUTOMOTIVE: ASTM D-3306, ASTM D-4340 GM 6038 M CSMA CSMA Ford ESE-M97B44-A GM 1825M (Aluminum) GSA A-A-870 SAE J 1034 HEAVY-DUTY: ASTM D-4985 Caterpillar Cummins 90T8-4 Detroit Diesel 7SE298 Freightliner 48-22880 GM 1899M (Non-Aluminum) John Deere H5 Mack RP-302B, Amer. Truck Maintenance Council SAE J 1941 Volvo/GM Heavy Truck Corporation

Longwall Fluids

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Hydraulic Cylinders and Roof Supports - Pressure Test and Storage Fluid				
SOLCENIC GM 20	Fire-resistant hydraulic fluid developed by the FUCHS Global team for use in longwall mining. The emulsion, formed with superior corrosion protection additives and lubricity enhancers, is stable in mine water when mixed at 2.0% by volume. SOLCENIC GM20 is delivered as a concentrate and is mixed on-site as needed with a locally available water source.	Suitable in waters up to 250ppm hardness per CaCO ₃ . Biodegradable as determined by test method EPA 40 CFR 796.3240 modified OECD 301E "Ready Biodegradability". Meets the Joy Mining criteria for use at 2.0% mix by volume in #18 Spec water. DBT Approved at a mix of 2.0% in mine specific water. Inbye and AEMI approved	Meets the Joy Mining criteria for use at 2.0% mix by volume in #18 Spec water. DBT Approved at a mix of 2.0% in mine specific water. Inbye and AEMI approved. MSHA Approval Number 35-A140003	-
SOLCENIC GM/D	Fire-resistant hydraulic fluid developed by the FUCHS Global team for use in longwall mining. The emulsion, formed with superior corrosion protection additives and lubricity enhancers, is stable in mine water when mixed at 2.0% by volume. SOLCENIC GM20 is delivered as a concentrate and is mixed on-site as needed with a locally available water source.	Suitable in waters up to 250ppm hardness per CaCO ₃ . Biodegradable as determined by test method EPA 40 CFR 796.3240 modified OECD 301E "Ready Biodegradability". Meets the Joy Mining criteria for use at 2.0% mix by volume in #18 Spec water.	MSHA; DBT Approved at a mix of 2.0% in mine specific water. Inbye and AEMI approved	-
SOLCENIC 2012	SOLCENIC 2012 is supplied as a concentrate to be mixed on site with suitable waters. The resulting emulsion is stable and provides excellent corrosion protection. The quality of the mine water is important as it can influence the stability and anti-corrosion properties of the fluid. It is recommended that a qualified representative sample the make-up water and emulsion for analysis in our laboratory.	Meets Joy criteria for use at 3.5% mix by volume in #18 Spec water. For waters of #19 hardness, the mix is approved at a level of 5.0% Suitable in waters up to 750ppm hardness per CaCO ₃ ; Ready Biodegradable;	MSHA Approval number 30-4-27; DBT Approved for use at 3.0% by mix volume in X-Water and at 5.0% in Z-water	-
SOLCENIC TS 68	SOLCENIC TS-68 is a fire resistant HFA-S hydraulic fluid based on carefully selected corrosion inhibitors designed to resist reaction with hard-water. The product has been designed to be operated at 2% even in water qualities that may otherwise have proven an issue to mine operators. And for such challenging waters, SOLCENIC TS-68 has been formulated to achieve the technical requirements demanded by the OEM test protocols. It demonstrates superior corrosion protection and lubrication properties.	-	Certified by independent laboratory as compliant with Caterpillar Global Mining Specification EWN 8350 (tested in a range of customers' waters at 2% and Z-water) Certified by independent laboratory as compliant with Joy Mining Machinery for 2% according to Specification CTR 02-14. MSHA Approval: 35-A130002	-

Longwall Fluids

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Hydraulic Cylinders and Roof Supports - Pressure Test and Storage Fluid				
SOLCENIC ECO PRO	Dual purpose - for use as a pressure test fluid during assembly, installation and commissioning and as a storage/transit fluid for powered roof supports and their hydraulic components. Can also be used in the water containing circuits of powered roof supports and other mining machinery to give antifreeze and corrosion protection during storage/transit both above and below ground.	Product offers protection against freezing down to -50°C; Readily biodegradable; Certified by independent laboratory as compliant with Caterpillar Global Mining Specification EWN 8350, Part 4.; Certified by independent laboratory as compliant with Joy Mining Machinery Specification CTR 02-14	MSHA Approval: 35-A140002	-
SOLCENIC LW ASSEMBLY GEL	SOLCENIC LW Assembly Gel is a superior soluble gel that incorporates additives to provide lubrication and corrosion protection to staple lock hydraulic hoses and fittings. It exhibits superior solubility and is ideal for applying to new - static and dynamic seals during assembly of new or rebuilt hydraulic cylinders. It is also both fully compatible and soluble with the working emulsion which makes for no downstream concerns with filtration or interference with functional components of the roof support control system.	-	Joy Mining Machinery UK Coal	Directly apply quantity of assembly gel to area requiring lubrication and protection from corrosion. Can be used generously as excess product will solubilise in longwall fluid and not impact down stream operation. Recommended for use in longwall hose connections and the assembly of new or rebuilt hydraulic cylinders where contact with longwall fluids is expected
SOLCENIC 801E	Ready mixed ethylene glycol based fluid designed for use as a multi-function pressure test, antifreeze and storage/transit fluid for powered roof supports and their hydraulic components.	Product offers freeze protection down to -34°C/-30°F and burst protection down to -51°C /-60°F; Readily biodegradable	MSHA Approval: 35-A090003	-

Maintenance Fluids

RENOLIN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Maintenance Fluids - Hydraulics				
RENOLIN XTREME TEMP 46	Universal, high-performance hydraulic oils with high viscosity index and excellent shear stability (VI ≥ 180). Based on special hydrogenated base oils, very good aging behavior, long lifetime, excellent corrosion protection and very good zinc containing wear protection for high pressure. Good demulsifying properties.	DIN 51524-3: HVLP ISO 6743-4: HV ISO 11158: HV	Denison HF0, HF1, HF2 Bosch Rexroth RD90235 and RDE90245	Universal high-performance multigrade hydraulic oils 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.
RENOLIN B HVI PLUS	Universal high-performance multi-grade hydraulic oils for stationary and mobile hydraulic systems, improved efficiency, increasing oil change intervals. Multi-grade characteristics through high, shear-stable viscosity index. Energy and fuel saving through high volumetric efficiency.	DIN 51524-3: HVLP ISO 6743-4: HV ISO 11158: HV Denison HF0, HF1, HF2	Denison HF0, HF1, HF2	Suitable for all stationary and mobile hydraulic systems when a high viscosity index and low cold-temperature viscosity is required. Extended oil change interval possible. High pressure applications are possible due to excellent AW/EP additive system.
RENOLIN B PLUS	Lubrication and hydraulic oils, based on high-quality, hydrated base oils (Group II). Contains additives for excellent aging and oxidation stability, the zinc-containing AW/EP additive system protects against wear at high pressure and load. Extended oil drain intervals are possible.	DIN 51524-2: HLP ISO 6743-4: HM	Denison HF0, HF1, HF2 Bosch Rexroth RDE 90245	Suitable for all hydraulic systems especially if an approval according to Bosch Rexroth RDE 90235/RDE 90245 is required. Group II base oil (Hydrogenated base oils), for HP-high-pressure application. Demulsifying type
RENOLIN MINE AW	Specially formulated with AW, R&O, and AF additives. This unique design provides excellent performance at a competitive price.	Hagglunds Denison HF-2 U.S.Steel 127	-	Underground mining machinery operations especially helpful where leakage and frequent oil make-up are operational concerns.
RENOSAFE FIRE-PROTECT	Water-free, fire-resistant hydraulic fluids based on latest ester and additive technology, type HFDU. Good 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.	ISO 12922 Category HFDU	FM Approved under FM approval class 6930 with approval identification of RR230272, 3051209 MSHA Permissible Fire-Resistant Hydraulic Fluid Approval Number 35-A150002	For the use as fire-resistant hydraulic oils based on organic esters where Factory Mutual approved product is required. 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.
PLANTOFLUX FR 68 HOC	Water-free, fire-resistant hydraulic fluids based on high oleic vegetable oil, type HFDU. Highest oxidation and thermal stability, excellent non-ferrous metal compatibility, hydrolytic stability, very robust and reliable wear protection. Multi-grade characteristics by high, shear stable viscosity index. Biodegradable acc. to OECD 301 B >60%.	ISO 12922 category HFDU	FM Approved under FM approval class 6930 with approval identification of PR462183 MSHA Permissible Fire-Resistant Hydraulic Fluid Approval Number 35-A230004	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.

Maintenance Fluids

RENOLIN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Maintenance Fluids - Gear and Circulating Systems				
RENOLIN UNISYN XT	Fully-synthetic industrial gear oils based on new, innovative polyalphaolefins with very high, natural, shear stable viscosity index and excellent low temperature behavior. Excellent wear protection, high micropitting resistance and very good corrosion protection. Based on mPAO.	DIN 51517-3: CLP ISO 6743-6 and ISO 12925-1: CKC / CKD / CKE / CKSMP AGMA 9005/ E02: EP AIST 224	Flender BA 7300, Table A JCB Liebherr Senvion Winergy	Suitable for the lubrication of gears and bearings. For the use in applications with high requirements on wide temperature range. Extremely low viscosity at low temperatures. ISO VG 220 and 320 for wind turbine applications. Approved by leading gear box manufacturers.
RENOLIN UNISYN CLP	Fully-synthetic PAO-based industrial gear oils with increased aging stability, very good load carrying capacity and excellent wear protection. RENOLIN UNISYN CLP provides a high micropitting resistance, a good air release and very good filtration behavior. Based on PAO.	DIN 51517-3: CLP ISO 6743-6 and ISO 12925-1: CKC / CKD / CKE / CKSMP AGMA 9005/ E02: EP AIST 224 David Brown S1 53.101 FAG requirements: FAG- FE8-Test: stage 1-4 pass (test report is available for ISO VG 320) SKF requirements: pass (100 °C-test)	Acciona Bonfiglioli Bosch Rexroth Brevini Chongchi Echesa Eickhoff Enercon Flender FLSmidth GET Moventas NGC Nordex Renk Senvion SEW Siemens-Gamesa Winergy ZF Zollern	Suitable for the lubrication of gears and bearings. For the use in applications with high requirements on wide temperature range. Extremely low viscosity at low temperatures. ISO VG 220 and 320 for wind turbine applications. Approved by leading gear box manufacturers.
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 aging stability. Special detergent/dispersant additives offer very good cleaning properties and dirt carrying capacity.	DIN 51517-3: CLP ISO 6743-6 and ISO 12925-1: CKC / CKD / CKSMP AGMA 9005/ E02: EP	Flender, Bocholt, Germany, Flender BA 7300, table A RENOLIN CLP 320 PLUS is approved by Bucyrus/Caterpillar Inc. (Enclosed Gearcase Lubricants for Bucyrus, Marion and RansomesRapier Draglines). RENOLIN CLP 320 PLUS is approved by CAT for Electric Rope Shovels (Enclosed Gearcase Lubricants).	Special gear oils for highly stressed mechanical industrial gears, 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). Especially for use in severe conditions where dirt, dust and water contamination prevail.
RENOLIN CLP	High-performance gear and circulating oils with good aging 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 behavior, zinc and ash-free and silicone oil-free. Mineral oil based. Demulsifying.	DIN 51517-3: CLP ISO 6743-6 and ISO 12925-1: CKC / CKD AGMA 9005/ F16 U.S. Steel 224	Flender GmbH, Bocholt, Germany, Flender BA 7300, table A Müller Weingarten AG, Germany, DT 55 005, 10/2003 Flender GmbH, Revision 16.1	Universally useable gear oils for industrial applications such as in bearings, joints, spur gears, bevel gears and worm gears and whenever the manufacturer recommends a mineral oil of type CLP. Approved by leading gear box manufacturers. Mineral oil based Demulsifying

Maintenance Fluids

CEPLATTYN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Maintenance Fluids - Open Gears				
CEPLATTYN GT SERIES	CEPLATTYN GT Series is a high-viscosity adhesive lubricant for heavy-duty open gears, e.g. on kilns, mills and driers in the raw materials industry, used with bath or circulation systems. It is based on a synthetic base oil, new types of additives, and a combination of white, reaction-effective solid lubricants. This combination guarantees extraordinarily good wear protection and an extremely high lubricant film stability.	AGMA 9005-E01/D-2	FLSmidth KHD Humboldt Wedag Metso Outotec	CEPLATTYN GT Series has been especially developed for the application on open gears under critical operating conditions, such as kiln and mill drives in the cement and mining industry. It includes flame-retarding substances reducing the danger of ignition, e.g. on the hot kiln shell. Furthermore CEPLATTYN GT has a restricted flow-ability outside the meshing and is thus prevented to a large extent from leaving the gear guard. It develops a thick lubricating film on the tooth flank which does not flow off of the metal surface, not even after a stoppage of the equipment. Thus it reliably protects from wear in the starting phase of the equipment which can happen with conventional fluids.
CEPLATTYN SF SERIES	CEPLATTYN SF SERIES is a high to extremely high-viscosity adhesive lubricant for heavy-duty Open Gear drives on mills in the raw materials industry. It is based on a synthetic base oil and new types of additives to provide an extraordinarily good wear protection and lubricant film stability. The product is free of bitumen and solvents. CEPLATTYN SF SERIES together with CEPLATTYN SF P (Primer) and CEPLATTYN SF RN (Running-In) represents the FUCHS LUBRITECH Multi-Phase Lubrication.	ANSI/AGMA 9005-E02/ D-2 (formerly AGMA 13EP and 13S)	CITIC Ferry-Captain/CMD FLSmidth KHD Humboldt Wedag, Metso Outotec	The high base oil viscosity guarantees a stable lubricant film between the tooth flanks being in contact. Even if lowest lubricant quantities are used, CEPLATTYN SF SERIES guarantees reliable operating conditions of Open Gear drives. Compared with conventional adhesive lubricants, considerable savings are possible. It is especially formulated for extremely heavy-duty Open Gear drives exposed to high shock loads. CEPLATTYN SF SERIES is also suitable for the lubrication of large driving chains.
CEPLATTYN KG 10 HMF	CEPLATTYN KG 10 HMF is based on a high-quality base oil, thickened with aluminum complex soap. The product contains colloidal graphite of the highest purity and fineness and in addition a carefully determined additive package, which is chlorine free and contains no heavy metals, together with adhesive additives. Together with CEPLATTYN 300 and CEPLATTYN RN, CEPLATTYN KG 10 HMF forms one of LUBRITECH's matched multiphase lubrication systems.	-	-	CEPLATTYN KG 10 HMF is used on the gear rim drives of tube mills, rotary kilns, dryers and crushers, which are to be found, i.a., in the raw materials industry or the power station sector. In addition CEPLATTYN KG 10 HMF is suitable for the lubrication of chains and heavily loaded sliding guides in rough operating conditions, e.g. in the mining industry.

Maintenance Fluids

RENOLIN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Maintenance Fluids - Air Compressor				
RENOLIN UNISYN OL	Synthetic EP compressor oils, PAO based, for screw, vane, and piston compressors; High performance synthetic PAO based hydraulic fluids with excellent oxidation stability, outstanding wear protection, good demulsification and excellent viscosity-temperature behavior. High viscosity index. Excellent air release. Suitable for extended service interval.	ISO 6743-3: L-DAA, L-DAB (reciprocating compressors) L-DAG, L-DAH, L-DAJ (rotating compressors) DIN 51506: VDL DIN 51524-2: HLP, DIN 51524-3: HVLP	-	RENOLIN UNISYN OL 32, 46 and 68 have especially been developed for use in oil injected screw compressors and also in turbo compressors. RENOLIN UNISYN OL 100 and 150 are recommended in particular for long-term use in piston and rotary compressors
RENOLIN AIR 8000	Fully synthetic compressor oils specially formulated with premium synthetic ester base fluids for use in a wide variety of air compressors especially designed for high pressure air compressors.	Recommended for reciprocating compressors and vacuum pumps using the following gases: air, ethylene, methane, propane, butadiene, natural gas, synthesis gas, carbon monoxide, carbon dioxide (dry), helium, hydrogen sulfide (dry), nitrogen, furnace (crack) gas, hydrogen, and sulfur hexafluoride; Nominal Operating Range is -15°C to 230°C (5°F to 445°F)	-	Broad range of applications including rotary screw compressors, rotary vane compressors, reciprocating compressors, vacuum pumps, centrifugal compressors, high pressure air compressors, gear boxes and chains
RENOLIN AIR 6000	6000 hour synthetic compressor lubricant under good operating conditions in rotary skew compressors; high performance, multi-functional lubricants designed for use in many industrial applications; zinc free; utilizes the latest technology available in combination with excellent lubricant additive systems to provide the performance of a synthetic at a less expensive cost.	Hydraulic fluids according to: Cincinnati Machine P-68, P-69, P-70; Denison HF-0, HF-1, HF-2; DIN 51524, Part 2 (HLP); ISO 6743/4 (HM); ISO 11158 (HM); AFNOR NF E 48-603 (HM), SS 155434; SEB 181 222; U.S. Steel 126, 127 and 136 Compressor oils according to: DIN 51506 (VBL, VCL, VDL); ISO / DP 6521 (DAA, DAB, DAH, DAG)	-	Covers a broad range of applications including rotary screw compressors, rotary vane compressors, reciprocating compressors, vacuum pumps, and centrifugal compressors
RENOLIN AIR 3000	3000 hour compressor lubricant under good operating conditions in rotary screw compressors and up to 2,000 hours in reciprocating compressors; high performance, multi-functional lubricants designed for use in many industrial applications; zinc free; very useful where frequent change outs are necessary due to poor environments prone to contamination from dust, acids, solvents, gases, or other contaminants.	Hydraulic fluids according to: Cincinnati Machine P-68, P-69, P-70; Denison HF-0, HF-1, HF-2; DIN 51524, Part 2 (HLP); ISO 6743/4 (HM); ISO 11158 (HM); AFNOR NF E 48-603 (HM), SS 155434; SEB 181 222; U.S. Steel 126, 127 and 136 Compressor oils according to: DIN 51506 (VBL, VCL, VDL); ISO / DP 6521 (DAA, DAB, DAH, DAG)	-	Broad range of applications including rotary screw compressors, rotary vane compressors, reciprocating compressors, vacuum pumps, centrifugal compressors, hydraulic systems, and AW turbines; Service life of 3000 hours under good operating conditions in rotary screw compressors and up to 2,000 hours in reciprocating compressors

Maintenance Fluids

RENOLIN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Maintenance Fluids - Recirculating				
RENOLIN DTA	Hydraulic and lubrication oils based on selected mineral base oils with additives to improve aging stability and corrosion protection.	DIN 51524-1: HL DIN 51517-2: CL ISO 6743-4: HL, ISO 6743-6 and ISO 12925-1: CKB.	-	<p>Universal high-performance multi-grade hydraulic oils for stationary and mobile hydraulic systems, improved efficiency, increasing oil change intervals.</p> <p>Multi-grade characteristics through high, s For thermally-stressed bearings, gears and hydraulic systems with peak temperatures up to 120 °C. Lubrication oils without AW/EP Additives. Also suitable for hydrodynamic drives if HL or CL lubrication fluids are required. VOITH Turbo couplings type T and S. Suitable for Landis Lund machine tools, recommended for spindle lubrication (without AW/EP). Demulsifying type hear-stable viscosity index. Energy and fuel saving through high volumetric efficiency.</p>
Maintenance Fluids - CST Conveyor				
RENOLIN CST 80	Multi-functional lubricating, gear, and hydraulic fluid based on premium severely hydro-treated base oils compounded with key performance additives to provide superior wear protection, thermal and oxidative stability, corrosion protection, very good air release properties, excellent compatibility with OEM friction materials, and avoids foaming and stick-slip phenomena.	API GL 4/5 JB/T 12194 JB/T 7282 HVLP DIN 51 524 CLP DIN 51 517-3 UTTO/STOU Performance	-	Developed for use in combined hydraulic and gear systems which include wet brakes, e.g. CST gear units
RENOLIN CST 100	<p>Multi-functional lubricating, gear and hydraulic oil based on selected Mineral and Synthetic (PAO) base fluids and was developed for use in combined hydraulic and gear systems which include wet brakes, e.g. CST gear units.</p> <p>The excellent properties of the base oils are further improved by a carefully matched additive package with selected additives. These additives improve the anti-wear behavior, offer excellent corrosion protection and avoid foaming as well as stick-slip phenomena and is compatible with commonly used seal materials, e/g/ Perbunan.</p>	<p>API GL 4/5</p> <ul style="list-style-type: none"> • ZF TE-ML-06 • MAN 271 • HVLP-DIN 51 524 • CLP-DIN 51 517 (1989) • UTTO/STOU- Performance 	-	RENOLIN CST 100 N/A is recommended for use in CST gear units of Caterpillar. RENOLIN CST 100 N/A was tested successfully in gear units, type CST 45 and 65

Maintenance Fluids

RENOLIN

Product name	Description	Specifications	Approvals	FUCHS Recommendations
Maintenance Fluids - Turbine				
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 aging resistance, excellent protection against sludge formation. No- / Low-Varnish turbine oils.	DIN 51515-1: TDP DIN 51515-1 (TD) with and without gearbox DIN 51515-2 (TG) with and without gearbox DIN 51524-2: HLP DIN 51524-3: HVLP (with exception of the VI) GE GEK 28568 A GE GEK 32568 F GE GEK 32568 H GE GEK 101941 A GE GEK 107395 A Siemens TLV 901304 Siemens TLV 901305 MAN Turbo AG – SP10000494596, Germany Solar ES 9-224 (Class I / Class II) MIL-PRF-17331J	Siemens Power Generation	For the lubrication of steam and gas turbines, 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 part 1 resp. part 2. AW/EP turbine oils: FZG ≥ 10 .



Greases

RENOLIT

Product name	Description	FUCHS Recommendations
Grease		
RENOLIT CENTAK OG SERIES	RENOLIT CENTAK OG is a high performance multi-service lubricant designed for use on open gears and highly loaded components in severe duty mining applications. Fortified with high viscosity base oils, select polymers and lubricating solids, along with chemical anti-wear (AW) and extreme pressure (EP) additives it rapidly establishes a tenacious lubricant film. Protection of gear teeth, bearing surfaces and other components is maintained even when subject to extreme operational and environmental conditions. Superior film retention and adhesion to the components allows for extended lubrication intervals.	RENOLIT CENTAK OG meets or exceeds the key performance requirements of Bucyrus SD4713 Open Gear Lubricant, P&H 464 Open Gear Lubricant and P&H 520 Multi-Service Mining Lubricant. RENOLIT CENTAK OG also specifically meets the Hoist Drum Gear minimum base fluid viscosity requirements of Bucyrus SD4713.
RENOLIT CXS BGR	RENOLIT CXS BGR is a full synthetic calcium sulfonate complex grease designed for the most demanding of applications. Formulated with the latest additives systems, RENOLIT CXS BGR has unsurpassed extreme pressure, anti-wear, corrosion and oxidation performance, truly making this one grease for all applications. Thickened with special calcium sulfonate complex soap, RENOLIT CXS BGR provides excellent water tolerability and shear stability, even with the presence of water and other Chemicals. RENOLIT CXS BGR is versatile allowing it to function at both extreme low and high temperatures without sacrificing performance or product life expectancy.	RENOLIT CXS BGR is designed for a multitude of general plant lubrication requirements such as: plain and anti-frictional bearings, slides, ways, guide pins, open gears, and chucks and clamping devices. Being a full synthetic grease, it is very pumpable at low temperatures. The special calcium sulfonate complex soap allows for very good consistency stabilization at higher temperatures allowing the grease to "stay put" and not run away from the critical points of application. RENOLIT CXS BGR can be applied through all known dispensing equipment designed to deliver a NLGI #2 grade grease.
RENOLIT CSX ULTRA 15	RENOLIT CSX ULTRA 15 is a high-performance calcium sulfonate complex thickened greases formulated with select base fluids, an optimized extreme pressure and anti-wear additive system, corrosion and oxidation additive package and fortified with a synergistic solids additive system for maximum protection in heavily loaded/shock loaded applications. This blend of solid additives provides for improved performance over straight 5% Molybdenum Disulfide (MoS ₂) grease alone.	This product is recommended for surface mining & construction equipment applications where a multipurpose grease is specified. This includes heavily loaded roller bearings and plain bearings in rotating, oscillating, and sliding contact points on excavators, shovels, loaders, dozers, and large haul trucks. RENOLIT CSX ULTRA 15 is also recommended for heavy industrial applications subject to high heat, loads, shear, and water conditions. It is also ideal for bushings, gibbs, and ways where there are heavy loads and severe sliding action. This product can be used anywhere a high temperature, high performance grease is required.
RENOLIT CSX SeSyn ULTRA	RENOLIT CSX SESYN ULTRA are high performance calcium sulfonate complex thickened greases formulated with select base fluids, an optimized extreme pressure/anti-wear additive system, corrosion/oxidation additive package and fortified with a synergistic solids additive system for maximum protection in heavily loaded/shock loaded applications. This blend of solid additives provides for improved performance over straight 5% Molybdenum Disulfide (MoS ₂) grease alone.	This grease is recommended for surface mining and construction equipment applications where a multi-purpose grease is specified. This includes heavily loaded roller bearings and plain bearings in rotating, oscillating, and sliding contact points on excavators, shovels, loaders, dozers, and large haul trucks. ENOLIT CSX SeSyn ULTRA is also recommended for heavy industrial applications subject to high heat, loads, shear, and water conditions. This product is also ideal for bushings, gibbs, and anywhere there are heavy loads and severe sliding action.
RENOLIT LSTO EP	RENOLIT LSTO EP is a unique synthetic grease suitable for many problem industrial gearboxes and bearings. Its thixotropic characteristic allows it to be used in gearboxes and bearings that are prone to leakage when using traditional gear oils and greases that run out. Thixotropy is its ability to move from a semi-solid state when at rest to relatively fluid when it is mechanically manipulated or placed under pressure as would occur in a gearbox or bearing application. Only the portion of RENOLIT LSTO EP actually being mechanically manipulated or placed under pressure will become relatively fluid, hence the remaining product forms a supplementary seal to keep out contaminants and prevent leakage of the lubricant out of the units.	Recommended for Limatorque Valve Actuators, Soot Blower Gearboxes, Robotic Gearboxes. Ranging Arms on Coal Mining Shearers, Overhead Crane Gearboxes, Run-Out Table Gearboxes. Heavily Loaded, Slow Speed Plain Bearings, Bushings, Roller Bearing.

Greases

RENOLIT

Product name	Description	FUCHS Recommendations
Grease		
RENOLIT LX HD 5 SUMMER & WINTER	<p>RENOLIT LX HD 5 is a lithium complex thickened grease formulated with 100% virgin base oils, an optimized extreme pressure / anti-wear additive system, corrosion protection and oxidation protection additive packages.</p> <p>RENOLIT LX HD 5 is also fortified with a synergistic 5% solids additive system that provides maximum EP and anti-wear properties.</p>	<p>Is available in summer and winter grades and for heavy industrial applications subject to high heat, loads, shear, and water conditions. Ideal for bushings, gibbs, ways, where there is heavy loads and severe sliding action.</p> <p>Mining / Construction applications of hitch pins of large haul trucks and shackle pins. Heavily loaded bushings that support oscillating sliding contact points such as king pins on buckets, excavators, shovels, and loaders. Anywhere a high temperature, high performance grease is required.</p>
RENOLIT POLIPLEX 2	<p>RENOLIT POLIPLEX 2 is a lithium complex thickened grease in a suitable mineral oil with various additives. It is formulated to support extreme pressure, high temperatures as well as general purpose applications. A performance polymer is incorporated to increase the adhesiveness and grease film strength. Selected extreme pressure, anti-wear, rust and corrosion additives are included to optimize overall grease performance.</p>	<p>Heavy industrial applications subject to high heat, loads, shear, and water conditions. Ideal for applications where shock loading is present, and the grease must resist "Squeeze Out". Mining / Construction applications of hitch pins, shackle pins, bushings, king pins on buckets, excavators, shovels, and loaders. Also successfully used in truck brake slack adjusters.</p>
RENOLIT PU MP-2	<p>RENOLIT PU MP grease is a high-performance polyurea grease formulated with select base fluid, an optimized extreme pressure/ anti-wear additive system and anti-oxidation additive package. Renolit PU MP is a shear-stable polyurea grease with excellent extreme-pressure (EP), with excellent water resistance and load carrying characteristics. The proprietary polyurea thickener system exhibits excellent resistance to oxidation and oil separation at elevated operating temperatures.</p>	-
RENOLIT PU HT	<p>RENOLIT PU HT Series are advanced greases designed to provide optimum performance in industrial bearings. These lubricants are formulated with a PAO, synthetic base oil and a shear stable thickener to offer extended life, antiwear performance, and shear stable performance from -30°C to 160°C. RENOLIT PU HT Series resists oxidation, is highly water resistant, and has excellent corrosion protection, providing added protection to equipment in wet, humid environments and applications where water wash downs are frequent.</p>	-
RENOLIT CENTAK WCL	<p>RENOLIT CENTAK WCL is high-performance walking cam lubricant designed for severe dutymining applications. It is optimized with high viscosity base oil, chemical anti-wear (AW), extreme pressure (EP) additives for effective tenacious lubricant film. RENOLIT CENTAKL WCL provides effective lubrication for slow rolling and sliding surfaces operating under extreme pressures.</p>	-

Cleaners

RENOCLEAN

Product name	Description	FUCHS Recommendations
Cleaner		
SUPER CLEAN 1500	SUPER CLEAN 1500 is a heavy-duty liquid maintenance cleaner formulated to degrease floors, walls and exterior machine surfaces, it readily removes cutting oils, coolant residues, stamping compounds, cold extrusion fluids, corrosion preventatives, lube oils and greases.	Featuring moderate foam levels to enhance detergency, this cleaner is suitable for automatic scrubbers and mop buckets. Due to its high alkalinity, SUPER CLEAN 1500 should not be used on aluminum, galvanized and yellow metals. This cleaner is free rinsing. As such, it does not leave behind caustic residues on treated surfaces.
Dust Control		
RENOCLEAN AIR HOLD DOWN	Dust suppression for all types of mining. Designed for dilution into water based applicators. RENOCLEAN AIR HOLD-DOWN contains a combination of natural binding and wetting agents. As the diluent water evaporates, the residues bond particles together to hold dust down. Additionally, the product has a humectant property that helps retain latent moisture. RENOCLEAN AIR HOLD-DOWN is readily biodegradable as determined by OECD 302-B. RENOCLEAN AIR HOLD-DOWN is classified as Water Danger Class 1 (WGK 1). This is the lowest category possible and an indication of low ecotoxicity and high biodegradability.	General purpose; for above-ground mining activities, applying to stockpiles & haulage roads. Typically utilized at 1 - 5% dependent on application.
RENOCLEAN AIR LOCK DOWN	Dust suppression for all types of mining. Designed for dilution into water based applicators. RENOCLEAN AIR LOCK DOWN is a high performance dispersed polymeric binding agent. On evaporation of the diluent water, the residues cure to form a resilient, flexible film that locks the dust down by crusting loose surfaces. Robust and persistent control against the effects of wind, vehicles and heavy equipment. Long-lasting and resistant to rain. RENOCLEAN AIR LOCK-DOWN is readily biodegradable as determined by OECD 302-B. RENOCLEAN AIR LOCK-DOWN is classified as Water Danger Class 1 (WGK 1). This is the lowest category possible and an indication of low ecotoxicity and high biodegradability.	Excellent choice of product for application as a rail- car topper. Able to withstand vibration, movement and air flow during long haul transportation without re-application. Also suitable for making semi- permanent road surfaces; applied as a superior functioning binder. RENOCLEAN AIR LOCK-DOWN may additionally be considered for the 'veneering' of inactive stockpiles to prevent fugitive dust emission. May also reduce inventory loss and pile run-off. Typically applied at 5 -10 %.
RENOCLEAN AIR SPRAY DOWN	Dust suppression for all types of mining. RENOCLEAN AIR SPRAY-DOWN is an additive for water-spray systems to greatly improve the wetting ability of water to reduce dust. RENOCLEAN AIR SPRAY-DOWN has a potent combination of wetting agents for effectiveness on dust generated from multiple sources. RENOCLEAN AIR SPRAY-DOWN increases the ability of water to adhere to and spread-out over air-borne particles. In addition, RENOCLEAN AIR SPRAY-DOWN improves the ability of water to penetrate and dampen loose surfaces thereby facilitating the de-scaling in piping, cooling and spray systems. RENOCLEAN AIR SPRAY-DOWN is readily biodegradable as determined by OECD 302-B.	RENOCLEAN AIR SPRAY-DOWN is supplied as a concentrate and is designed to be injected into the water stream at ratios varying from 0.03% - 0.10% using commercially available injector-type pumps. RENOCLEAN AIR SPRAY-DOWN is suitable for under-ground applications, including longwall mining, continuous miners, crushers and belt transfer points. RENOCLEAN AIR SPRAY-DOWN can be injected into the main water stream on the surface to cover all areas of the mine to improve health and safety. Surface operations at Preparation plants and load-out facilities are other areas to be considered.

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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