

LUBRICATION SOLUTIONS

FOR INDUSTRIAL APPLICATIONS



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TOTAL Lubricants: our commitment



TOTAL, a multinational energy company

As the fifth largest publicly traded integrated oil and gas company in the world and a major player in the chemicals business, TOTAL has operations on five continents with approximately 96,000 employees.

TOTAL engages in all aspects of the petroleum industry, including Upstream operations (oil and gas exploration, development and production, LNG) and Downstream operations (refining, marketing and the trading and shipping of crude oil and petroleum products). TOTAL also produces base chemicals (petrochemicals and fertilizers) and specialty chemicals for the industrial and consumer markets (rubber processing, adhesives, resins and electroplating).

TOTAL is helping to secure the future of energy by progressively expanding its energy offerings and developing complementary next generation energy activities (solar, biomass, nuclear).



Developing your productivity

We are at your side to help you get the best of your machinery and to accompany your development at both local and international levels.

Total Lubricants is ISO 9001 and ISO/TS 16949 certified. These certifications, renewable every 3 years, are the guarantee of our long-term commitment.

■ Specific products

Each industrial sector has a specific operating environment. Our knowledge and experience of industrial applications means that our products are suited perfectly to your requirements. TOTAL lubricants offer a comprehensive range of oils, greases and special products for industries such as: chemicals, energy, iron and steel, metallurgy, metalworking, automotive, equipment manufacturers, mines, construction materials, papermaking and the food processing industry.

■ Innovative products

Innovation is priority for us. We have several research centres, where chemical and mechanical engineers and specialists in tribology work together. Our close relations with equipment manufacturers enable the formulation and testing of tomorrow's products, and guarantee optimal performance and protection of your machines.

■ Safe and environmentally-friendly products

We have made a commitment to safety, health and respect for the environment. Our R&D teams integrate from the initial design stage of new products parameters conducive to the reduction of toxicity risks and VOC emissions, biodegradability, recycling or disposal of the products.

■ High added value services

We bring our expertise to help you to optimize the productivity of your machinery and improve your competitiveness. You benefit from our specialist knowledge and high-level after-sales services that include: rationalization and organization of lubrication operations, maintenance and laboratory analyses of the fluids in service, training of your personnel.

■ Proximity and reactivity

We provide a local sales presence to answer your specific needs. In addition, our integrated organization and supply chain (our own refineries, lubricant blending plants and logistics platforms) ensure your deliveries will be on-time.



Food Grade Lubricants

Guaranteeing food safety to consumers is paramount for today's food and beverage processors. With this challenge in mind, TOTAL Specialties USA has developed NEVASTANE, a full range of NSF H1-registered lubricants designed for use when incidental contact with food is possible.

Using Nevastane food grade lubricants instead of traditional products allows you to avoid serious consequences for both the consumer and your brand image. The best machine designs can't always rule out incidental contamination of food by lubricants from leakage, drip, spatter, or even mistakes. Nevastane food grade lubricants are perfect for food safety and performance for maximum productivity in a variety of industries including cosmetics, pharmaceuticals, beverages, cocoa and chocolate processing, baking, meat/poultry and more.



Nevastane and Food Grade



The Nevastane range of products is specifically designed for the Food & Beverage, pharmaceutical, and cosmetics industries, as well as their related activities, such as product packaging. All Nevastane products are NSF H1 and ISO 21469 registered, contain no compounds of animal origin, free of GMOs and allergens, and most are certified Kosher and Halal. Their use is essential where a high level of hygiene is required, in compliance with HACCP method.

HYDRAULIC SYSTEMS

HM HYDRAULIC FLUIDS: FOR HIGH TEMPERATURE AND PRESSURES

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
NEVASTANE AW	USP White Oil	<ul style="list-style-type: none"> Hydraulic systems operating under severe conditions 	<ul style="list-style-type: none"> Extended drain intervals Low and high temperature service. High temperature stability Rust, oxidation, and anti-wear protection Compatible with elastomers and seals Good film strength 	22 to 68	<ul style="list-style-type: none"> NSF H1 • Kosher Halal • ISO 6743-4 M ISO 21469
VESTAN AW	USP White Oil	<ul style="list-style-type: none"> Hydraulic systems and lubricating oils 	<ul style="list-style-type: none"> Very good equipment protection power Increased equipment service life, Miscibility with mineral fluids 	32 to 460	<ul style="list-style-type: none"> Grades 32, 46 and 68 are NSF H-1 registered and meet USDA 1998 H1 guidelines for incidental contact with food.
NEVASTANE SH	Synthetic PAO	<ul style="list-style-type: none"> Hydraulic systems operating under low temperatures 	<ul style="list-style-type: none"> High performance product (100% synthetic) Excellent protection of equipment Extension of oil drain intervals 	32 to 100	<ul style="list-style-type: none"> NSF H1 • Kosher Halal • ISO 6743-4 M ISO 21469

GEARS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
NEVASTANE EP	Semi-Synthetic technology	<ul style="list-style-type: none"> Gears, gear pumps, chains and conveyor belts. 	<ul style="list-style-type: none"> Superior protection under high loads. Adapted to a wide range of applications Superior oxidation protection Semi-Synthetic technology 	100 to 1000	<ul style="list-style-type: none"> NSF H1 • Kosher • Halal ISO 6743-6 CKD ISO 21469
NEVASTANE XSH	Synthetic PAO	<ul style="list-style-type: none"> Severe temperature conditions and high loads Gears, slideways, plain bearings and (roller) bearings 	<ul style="list-style-type: none"> Excellent level of equipment protection Extension of oil drain intervals Extended equipment service life 	150 to 460	<ul style="list-style-type: none"> NSF H1 • Kosher • Halal ISO 6743-6 CKD ISO 21469
VESTAN PAG	Synthetic (PAG)	<ul style="list-style-type: none"> Severe temperature conditions and high loads Oven chains and conveyor belts, bottling equipment, wheels and worm screws Non-miscible with mineral oils and certain synthetic lubricants 	<ul style="list-style-type: none"> Reinforced extreme-pressure properties Very good thermal stability Anticorrosion protection 	220 320 460	<ul style="list-style-type: none"> NSF H1

Synthetic



Nevastane and Food Grade

Nevastane and Food Grade



GAS COMPRESSORS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
ORITES DS 270	Synthetic (PAG)	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene. 	<ul style="list-style-type: none"> Excellent lubricity. Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs. 	270	<ul style="list-style-type: none"> NSF H1, ISO 6743-3: DGC Burckhardt Compression for high pressure
ORITES DS 270 X	Synthetic (PAG)	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene or EVA copolymer process. 	<ul style="list-style-type: none"> Resistant to corrosion. No products of animal origin. No GMOs. Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs. 	270	<ul style="list-style-type: none"> NSF H1, ISO 6743-3: DGC Burckhardt Compression for high pressure
ORITES TW 220	USP White Oil	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene. Also for compressors dedicated to NH3 synthesis. Sulfur free for iron oxide catalyst most used in ammonia synthesis 	<ul style="list-style-type: none"> Excellent lubricity. Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs. 	220	<ul style="list-style-type: none"> ISO 6743-3: DGC NSF H1 and ISO 21469 certified. Burckhardt Compression for high pressure
ORITES TW 220 X	USP White Oil	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene and EVA. 	<ul style="list-style-type: none"> TW 220 with enhanced resistance to corrosion. 	220	<ul style="list-style-type: none"> ISO 6743-3: DGC NSF H1
ORITES EDA 220	USP White Oil	<ul style="list-style-type: none"> Hyper-compressor cylinders for the production of EDA 	<ul style="list-style-type: none"> Excellent lubricity. Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs. 	220	<ul style="list-style-type: none"> ISO 6743-3: DGC NSF H1

AIR COMPRESSORS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
NEVASTANE SH	Synthetic (PAO)	<ul style="list-style-type: none"> Air compressors Adapted to the severe environment of the agrifood industries 	<ul style="list-style-type: none"> Very high equipment protection level, even under severe conditions. 	32 to 100	<ul style="list-style-type: none"> NSF H1 • Kosher • Halal ISO 6743-6 CKC ISO 6743-4 HV • ISO 21469

Synthetic



Nevastane and Food Grade

Nevastane and Food Grade



WHITE OILS AND VASELINES

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
FINAVESTAN U	USP NF White Oil	Designed for the following industries: <ul style="list-style-type: none"> • Pharmaceutical • Cosmetics: raw material • Plastics: plasticizer for PS and other polymers, for all packaging intended for food contact • Food: in accordance with the legislation in force 	<ul style="list-style-type: none"> • Meet the requirements of the pharmaceutical, cosmetic and food-related industry subject to the regulations in each country 	15 to 100 (70 to 500 SUS)	<ul style="list-style-type: none"> • European Pharmacopoeia, most recent edition • US Pharmacopoeia, most recent edition. British Pharmacopoeia, BP 2001. French Pharmacopoeia Française, 10th • NSF H-1 (all grades); • NSF Standard 60 drinking water-210 grade only. • US FDA, 21 CFR 172.878, 21 CFR 178-3620(a), White Mineral Oil • European Directive 2004/19/CE amending Directive 2002/72/EC
LYRAN U	Technical White Oil	Process oil or raw material for: <ul style="list-style-type: none"> • Lubrication of small devices • Manufacturing of plastics, rubbers and pesticides • Component for ink and textile oils 	<ul style="list-style-type: none"> • Very high purity • Odorless, flavorless, colorless • Does not contain sulfur or aromatic hydrocarbons 	15 to 68 (70 to 350 SUS)	<ul style="list-style-type: none"> • FDA, 21 CFR 178-3620 (b)
NEVASTANE CLEAR	USP White Mineral Oil	Recommended for use as: <ul style="list-style-type: none"> • A release agent in food processing plants where there is direct contact with foodstuff suitable for use on machinery used for producing, manufacturing, packing, preparing, and packaging food where there's a chance of incidental food contact 	<ul style="list-style-type: none"> • Water white • Low and high temperature service • High temperature stability • Compatible with elastomers and seals • Good film strength 	15, 68	<ul style="list-style-type: none"> • NSF 3H & H1 Registered Kosher • FDA 21 CFR 172.878 • FDA 21 CFR 178.3620(a)



Nevastane and Food Grade

Nevastane and Food Grade



ONCE-THROUGH APPLICATIONS: SPECIAL PRODUCTS FOR THE AGRIFOOD INDUSTRY

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	VISCOSITY	SPECIFICATIONS
NEVASTANE LUBE AEROSOL	USP White Oil/ Solvent	<ul style="list-style-type: none"> Multi-purpose adhesive oil for small machines requiring almost daily lubrication Conveyors and rails Packaging machines 	<ul style="list-style-type: none"> Range of use: -20°C to +150°C (-4°F to 302°F). Exceptional adhesion to metal surfaces. Resistant to water, steam and weak acid and alkaline atmospheres. 	Aerosol (<2 cSt)	<ul style="list-style-type: none"> NSF H1
NEVASTANE GREASE AEROSOL	Grease/Solvent	<ul style="list-style-type: none"> Water resistant grease for bearings, hinges, springs, chains, rails and tools 	<ul style="list-style-type: none"> Range of use: -20°C to +150°C. Excellent resistance to water and steam. Exceptional adhesion to metal surfaces. Resistant to detergents. 	Aerosol (<2 cSt)	<ul style="list-style-type: none"> NSF H1
NEVASTANE SILICONE SAFEGUARD	Silicone/Solvent	<ul style="list-style-type: none"> Gliding agent and lubricant 	<ul style="list-style-type: none"> Use between -40°C and +200°C (-40°F and +392°F). Insulating, anti-rust and anti-corrosion. Odourless, colourless and non-greasy. 	Aerosol (<2 cSt)	<ul style="list-style-type: none"> NSF H1 Kosher
NEVASTANE FLUSH OIL	Hydrocarbon	<ul style="list-style-type: none"> For lubrication of devices and circuits Ideal for switching from a standard lubricant to a NSF H1 lubricant 	<ul style="list-style-type: none"> Elimination of deposits and impurities 	9.5	<ul style="list-style-type: none"> NSF H1 Kosher, Halal ISO 21469
NEVASTANE SDO	Proprietary	<ul style="list-style-type: none"> Application in pure form (can be diluted). Prevent the accumulation of sugar on machine parts Dissolves sugar accumulated in the production areas 	<ul style="list-style-type: none"> Reduction of maintenance costs and shutdowns. White odourless liquid. Excellent descaling power. 	NA	<ul style="list-style-type: none"> NSF H1 Kosher
NEVASTANE 6 Safegard	USP White Oil/ Solvent	<ul style="list-style-type: none"> General purpose food machinery oil 	<ul style="list-style-type: none"> Colorless and odorless. Multi-purpose lubricant and penetrant. Superior lubricity to white oils. Extends equipment life. Non-staining. Displaces moisture, resists steam and mild acids. 	Aerosol (<2 cSt)	<ul style="list-style-type: none"> NSF H1 Kosher
NEVASTANE WETLUBE	USP White Oil	<ul style="list-style-type: none"> Multi-purpose food machinery lubricant for wet environments Suitable for use on machinery such as fruit peeling and coring machines, tables, conveyors, and around fillers 	<ul style="list-style-type: none"> Lubricates in very wet environments. Provides excellent lubricity. Provides rust protection. 	100	<ul style="list-style-type: none"> NSF H1 Kosher Pareve Star K



Nevastane and Food Grade

Nevastane and Food Grade



GREASES

PRODUCT	APPLICATIONS	ADVANTAGES	NLGI GRADES	THICKENER	OPERATING TEMPERATURE RANGE
NEVASTANE HD2T	<ul style="list-style-type: none"> • Multipurpose EP and antiwear grease • For crimping machines, bottling machines, harvesting machines and all loaded bearings • Contains PTFE for good sliding ability 	<ul style="list-style-type: none"> • Very good adhesive power on metal surfaces • Excellent protection against corrosion • Resistant to water washout. • NSF H1 • Kosher • Halal • ISO 21469 	2	Al Complex	-20°C to 150°C (0°F to 300°F)
NEVASTANE XS 80	<ul style="list-style-type: none"> • Full synthetic, EP, high performance grease • High speed, heavy loads with very wide temperature range required • Recommended for pelleting machines 	<ul style="list-style-type: none"> • Suitable for very low temperatures • Excellent water resistance • Reduces grease consumption (long life grease) • NSF H1 • ISO 21469 	1, 2	Ca Sulfonate Complex	-55°C to +180°C (-67°F to 350°F)
NEVASTANE XS 320	<ul style="list-style-type: none"> • Full synthetic, EP, high performance grease • Low and medium speeds applications • Good lubrication properties under severe conditions and high loads • Recommended for pelleting machines 	<ul style="list-style-type: none"> • Suitable for very low temperatures • Excellent water resistance • Reduces grease consumption (long life grease) • NSF H1 • ISO 21469 	1, 2	Ca Sulfonate Complex	-40°C to +180°C (-40°F to 350°F)
VESTAN HTAW CLEAR	<ul style="list-style-type: none"> • Multipurpose Clear Food Machinery Grease • 50% higher wear resistance • Used in packing, valves, guides, slides, Angelus Can Seamers, and plain and anti-friction bearings 	<ul style="list-style-type: none"> • Less washout and corrosion • Longer bearing life • High temperature stability • Protection against wear • NSF H1 	0, 1, 2	Al Complex	0°F to 350°F
VESTAN FM	<ul style="list-style-type: none"> • Multipurpose White Food Machinery Grease • Does not contain zinc oxide 	<ul style="list-style-type: none"> • Strong adhesion to surfaces with excellent resistance to water wash off • Highly shear stable with good EP protection which improves the film strength and resists shock loading impacts • USDA H-1 • NSF H-1 • Corrosion and oxidation resistant • Extends regreasing intervals 	2	Al Complex	0°F to 325°F
NEVASTANE 2+	<ul style="list-style-type: none"> • Multipurpose White Food Machinery Grease 	<ul style="list-style-type: none"> • Water resistant • Tacky • Wide operating temperature range • Extends equipment life • Protection against wear 	2	Al Complex	0°F to 350°F



Nevastane and Food Grade



Greases

Innovation in order to keep up with a changing world, TOTAL provides the market with the latest in grease technology in order to satisfy the most demanding of applications. From our world-class over-based calcium sulfonate thickener technology to our simple soaps, our products provide our customers with the very best in regards to technology and performance. The TOTAL grease portfolio covers a wide range of industrial applications such as lubricating roller bearings, gears, couplings, cables, chains, and electric motors, to name a few.



LITHIUM GREASES

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/ COLOR
MULTIS EP NA	<ul style="list-style-type: none"> Standard Automotive and Industrial (NLGI-GC-LB) 	<ul style="list-style-type: none"> Extended life of the parts due to the good resistance of the lubricating film Enables to rationalize stocks and simplify maintenance operations 	000 to 2	0 to 325	180	Smooth/Amber
BRICK GREASE L	<ul style="list-style-type: none"> Open grease cellars in older equipment 	<ul style="list-style-type: none"> High melting point Excellent lubricity properties Eliminates danger of dry bearings Reduces lubrication costs Applies perfect film to shaft Good heat resistance 	6	n/a	120	Waxy/Dark-Brown
COUPLING GREASE	<ul style="list-style-type: none"> Very high speed coupling lubrication 	<ul style="list-style-type: none"> Resists centrifugal forces Durable and resistant to water, pollution, and temperature variations Very good adhesion and water washout resistance Withstands heavy shock loading Excellent anti-rust and anti-corrosion properties 	1	0 to 250	620	Adhesive, Tacky/Brown
CPS GREASE	<ul style="list-style-type: none"> Agricultural cotton harvester grease 	<ul style="list-style-type: none"> Low viscosity with good lubricity for high speed spindles Excellent anti-rust and anti-corrosion properties 	0, 00	-20 to 250	22	Smooth/Light Green

LITHIUM/CALCIUM GREASES

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/ COLOR
MULTIS XHV	<ul style="list-style-type: none"> EP multipurpose grease for applications under high load, at low speeds with the risk of water washout Pre-eminently suitable as "Fifth wheel" grease in transport applications 	<ul style="list-style-type: none"> Exceptional adhesiveness enables maintenance and shutdown time reductions 	2	0 to 265	1300	Smooth/Pale Brown
LICAL WR EP	<ul style="list-style-type: none"> Extreme pressure multipurpose grease for every application: joints, rings, gears, bearings Good resistance to water 	<ul style="list-style-type: none"> Enables to rationalize stocks and simplify maintenance operations 	2	-25 °C to +130 °C	478	
BIOMULTIS SEP 2	<ul style="list-style-type: none"> Multi-Purpose, Biodegradable, Extreme Pressure Grease 	<ul style="list-style-type: none"> ISO 6743-9: L-XDDEB 2, VGP Compliant DIN 51502: KPE2N-40 Outstanding pumpability Excellent adhesion to metal 	2	-40 to 300 F	620	Smooth/Pale Brown

LITHIUM COMPLEX GREASES

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/ COLOR
MULTIS COMPLEX EP NA	<ul style="list-style-type: none"> • EP multipurpose greases, high speeds. • For wheel bearings, ball bearings, roller bearings, plain bearings, seals. 	<ul style="list-style-type: none"> • Enable inventory rationalization and simplify maintenance operations • Very good mechanical and thermal stability 	1, 2	0 to 325	145	Slightly Tacky/ Blue
MULTIS COMPLEX HV NA	<ul style="list-style-type: none"> • EP multipurpose greases, high speeds. • For wheel bearings, ball bearings, roller bearings, plain bearings, seals 	<ul style="list-style-type: none"> • Enable inventory rationalization and simplify maintenance operations • Very good mechanical and thermal stability 	1, 2	+20 to 340	460	Smooth/Red
MULTIS COMPLEX HV MOLY	<ul style="list-style-type: none"> • EP grease for extremely loaded applications and high temperatures • Contains 3% Moly 	<ul style="list-style-type: none"> • Protection of metal parts, even with very high loads 	2	0 to 325 F	160	Very Tacky/Gray
MULTIS COMPLEX ET	<ul style="list-style-type: none"> • Multipurpose, adhesive, EP automotive and industrial grease 	<ul style="list-style-type: none"> • Very good adhesive properties • Good mechanical and thermal stability • Good Anti-rust and anti-corrosion properties • Does not contain heavy metals 	1, 2	-15 to 325 F	160	Tacky/Red
MULTIS COMPLEX ET MOLY	<ul style="list-style-type: none"> • Multipurpose, adhesive, EP automotive and industrial grease 	<ul style="list-style-type: none"> • Very good adhesive properties • Good mechanical and thermal stability • Good Anti-rust and anti-corrosion properties • Does not contain heavy metals • Contains 5% Moly for enhanced EP properties 	1, 2	0 to 325 F	160	Very Tacky/Gray
XENOR GREASE	<ul style="list-style-type: none"> • High performance extreme pressure grease compounded with extreme pressure (EP) and anti-wear additives • Agricultural and industrial uses anti-corrosion properties 	<ul style="list-style-type: none"> • Reduced wear and good EP properties • Anti-oxidation and anti-corrosion/ anti-rust properties • Good water resistance 	3	+10 to 325 F	150	Smooth/Tan
SYNPRO SHC	<ul style="list-style-type: none"> • Multi-purpose, extreme pressure industrial & automotive grease 	<ul style="list-style-type: none"> • Meets a wide variety of requirements and is well suited for both high and low temperature applications to provide long service life • Excellent thermal and oxidative resistance • Miscible with the majority of other conventional soap greases • Durable and resistant to water, pollution, and temperature variations • Good mechanical and thermal stability • Excellent anti-rust and anti-corrosion properties 	1.5, 2	0 to 340 F	460 (NLGI 1.5), 220 (NLGI 2)	Smooth/Beige

Synthetic

ALUMINUM COMPLEX GREASES

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/COLOR
ZENIPLEX EP	<ul style="list-style-type: none"> Standard Industry (construction, mining), multipurpose industrial grease. EP 	<ul style="list-style-type: none"> Water resistant Incorporates anti-wear, anti-corrosion, and extreme pressure additives Excellent lubricity properties Outstanding oxidation resistance Good mechanical and thermal stability Lubricates under heavy loads Reduces washout in wet applications 	0, 1, 2	0 to 325	220	Adhesive/ Amber-Tan
TIFORA PG	<ul style="list-style-type: none"> Heavy metal free special high performance grease for tubing/ casing 	<ul style="list-style-type: none"> Enable inventory rationalization and simplify maintenance operations Very good mechanical and thermal stability 	1, 2	+20 to 340	460	Smooth/Red
NEVASTANE HD2T	<ul style="list-style-type: none"> Multipurpose extreme pressure and antiwear grease For crimping machines, bottling machines, harvesting machines and all loaded bearings Contains PTFE for good sliding ability 	<ul style="list-style-type: none"> Protection of metal parts, even with very high loads 	2	0 to 325 F	160	Very Tacky/Gray
NEVASTANE 2+	<ul style="list-style-type: none"> Multipurpose White Food Machinery Grease 	<ul style="list-style-type: none"> Very good adhesive properties Good mechanical and thermal stability Good Anti-rust and anti-corrosion properties Does not contain heavy metals 	1, 2	-15 to 325 F	160	Tacky/White
VESTAN HTAW CLEAR	<ul style="list-style-type: none"> Provides excellent bearing lubrication in all kinds of bearings throughout the modern food processing plant 50% higher wear resistance over traditional food grade greases. Their use assures long machine life while reducing contamination problems Used in packing, valves, guides, slides, Angelus Can Seamers, and plain and anti-friction bearings 	<ul style="list-style-type: none"> Very good adhesive properties Good mechanical and thermal stability Good anti-rust and anti-corrosion properties Does not contain heavy metals Contains 5% Moly for enhanced EP properties 	1, 2	0 to 325 F	160	Very Tacky/Gray
VESTAN FM	<ul style="list-style-type: none"> Standard Food Does not contain zinc oxide 	<ul style="list-style-type: none"> Strong adhesion to surfaces with excellent resistance to water wash off Highly shear stable with good EP protection which improves the film strength and resists shock loading impacts USDA H-1 • NSF H-1 Corrosion and oxidation resistant Extends regreasing intervals 	2	+10 to 325 F	150	Smooth/Tan

Synthetic Food Grade

POLYUREA GREASES

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/ COLOR
ALTIS EM NA	<ul style="list-style-type: none"> • Electric Motor Grease 	<ul style="list-style-type: none"> • Lubrication maintains quiet motor bearings • Rust and oxidation inhibited for longer bearing life • Ashless, non-EP and non-staining • Dyed red for easy identification 	2	0 to 275	130	Smooth/Red

CALCIUM SULFONATE GREASES

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/ COLOR
CALPLEX M	<ul style="list-style-type: none"> • Adhesive, multi-purpose, EP industrial & automotive grease 	<ul style="list-style-type: none"> • Excellent corrosion resistance including salt fog and sea water • Durable and resistant to water, pollution, and temperature variations • Contains 5% moly • Good mechanical stability under stress and high temperature • Extends service intervals • Miscible with the majority of other conventional soap greases 	1, 2	0 to 325 F	150	Smooth/Gray-Black
CERAN AD Plus	<ul style="list-style-type: none"> • Heavy duty water resistant EP grease • Applications in marine, industry, off shore 	<ul style="list-style-type: none"> • Semi-fluid, high load, water resistant, high temperatures, anti-corrosion • No heavy metals 	0.5	-20 to 150 C	>1700	Smooth/Brown
CERAN MM	<ul style="list-style-type: none"> • Multipurpose, heavy duty water-resistant EP grease • Off-road applications in civil engineering and industry 	<ul style="list-style-type: none"> • High loads, wide temperature range, anti-corrosion • No heavy metals 	2	-30 °C to +180 °C	110	Smooth/Brown
CERAN XM 100	<ul style="list-style-type: none"> • Multipurpose, extreme-pressure, water-resistant • Recommended in the paper industry for high speeds • Heavy duty and off-road applications in civil engineering and industry 	<ul style="list-style-type: none"> • Excellent water resistance • Enhanced anti-corrosion properties • Allows high speed applications 	1.5	-30 °C to +180 °C	100	Smooth/Brown

CALCIUM SULFONATE GREASES CONTINUED

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/COLOR
CERAN XM 220	<ul style="list-style-type: none"> • Multipurpose, extreme-pressure, water-resistant • Suitable for the lubrication of continuous castings and rolling mills in steel plants, bearings in wet and dry (felt rolls) sections of paper mills • Severe industrial applications (heavy loads, dust, water, high temperatures, etc.) 	<ul style="list-style-type: none"> • Excellent water resistance • Enhanced anti-corrosion properties • Enables inventory rationalization 	1.5	-30 °C to +180 °C	220	Smooth/Brown
CERAN XM 460	<ul style="list-style-type: none"> • Multipurpose, extreme-pressure, water-resistant • Shock loaded applications in industry even in severely demanding environment (water, dust, high temperature) • Suitable for the lubrication of bearings in steel plants, in paper industry, for the lubrication of hard wood granular presses and in all industrial applications under severe conditions 	<ul style="list-style-type: none"> • Excellent water resistance • Enhanced anti-corrosion properties 	1.5	-25 °C to +180 °C	460	Smooth/Brown
CERAN XS 80	<ul style="list-style-type: none"> • Full synthetic, extreme-pressure grease • Industrial applications with very wide temperature range required (-55 °C to +180 °C) • Suitable for high speeds applications 	<ul style="list-style-type: none"> • Suitable for very low temperatures • Excellent water resistance • Reduces grease consumption (long life grease) 	1.5	-55 °C to +180 °C	80	Smooth/Brown
CERAN XS320	<ul style="list-style-type: none"> • Full synthetic, extreme-pressure grease • Industrial applications with very wide temperature range required (-55 °C to +180 °C) 	<ul style="list-style-type: none"> • Suitable for very low temperatures • Excellent water resistance • Reduces grease consumption (long life grease) 	1.5	-40°C to +180°C (-40°F to 350°F)	320	Smooth/Brown

CALCIUM SULFONATE GREASES CONTINUED

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/ COLOR
NEVASTANE XS 80	<ul style="list-style-type: none"> • Full synthetic, extreme-pressure, high performance grease • Suitable for high speeds applications, heavy loads with very wide temperature range required • Recommended for pelleting machines 	<ul style="list-style-type: none"> • Suitable for very low temperatures • Excellent water resistance • Reduces grease consumption (long life grease) • NSF H1 • ISO 21469 	1.5	-55°C to +180°C (-67°F to 350°F)	80	Smooth/White
NEVASTANE XS 320	<ul style="list-style-type: none"> • Full synthetic, extreme-pressure, high performance grease • Suitable for low and medium speeds applications • Good lubrication properties under severe conditions and high loads • Recommended for pelleting machines 	<ul style="list-style-type: none"> • Suitable for very low temperatures • Excellent water resistance • Reduces grease consumption (long life grease) • NSF H1 • ISO 21469 	1.5	-40°C to +180°C (-40°F to 350°F)	320	Smooth/Brown

SPECIALTY GREASES

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/ COLOR	THICKENER
CARTER OPEN GEAR	<ul style="list-style-type: none"> • Multi-purpose open gear grease 	<ul style="list-style-type: none"> • Highly adhesive and tacky • Incorporates anti-wear and anti-corrosion additives • Excellent lubricity properties • Solvent free • Good mechanical and thermal stability • Moisture resistant 	2	+30 to 340 F	(AGMA 15)	Adhesive, Tacky/Black	Bentone
BASE COAT	<ul style="list-style-type: none"> • Marine Grease 	<ul style="list-style-type: none"> • Boat launching compound, use with slip coat 	n/a	n/a	n/a	Waxy/Yellow	Calcium
SLIP COAT		<ul style="list-style-type: none"> • Boat launching compound, use with base coat 	6			Stiff Paste/Tan	
BRICK GREASE S	<ul style="list-style-type: none"> • Journals with high water contamination 	<ul style="list-style-type: none"> • High melting point • Excellent lubricity properties • Eliminates danger of dry bearings • Reduces lubrication costs • Applies perfect film to shaft • Good heat resistance 	6	n/a	100	Waxy/ Dark Brown	Sodium

SPECIALTY GREASES CONTINUED

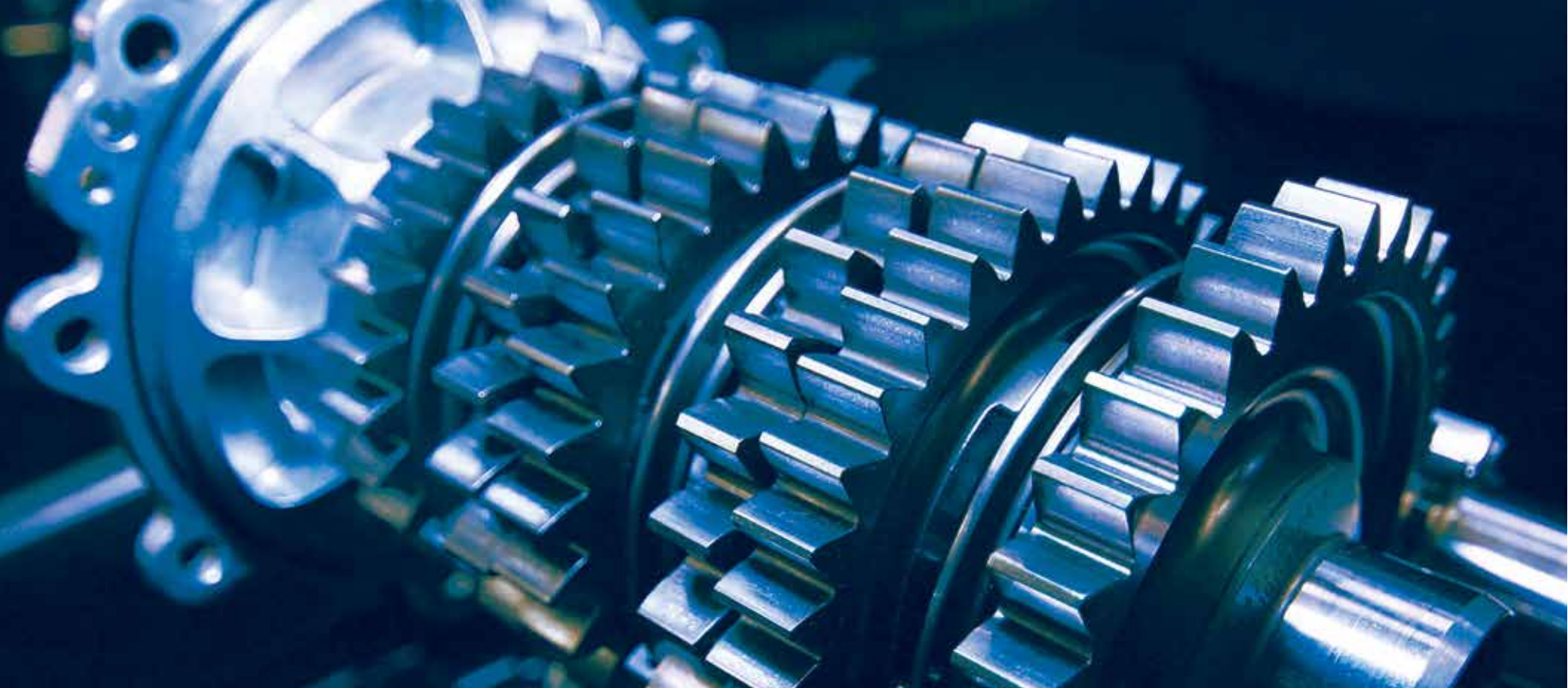
PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/COLOR	THICKENER
CALORIS	<ul style="list-style-type: none"> Very high temperatures 	<ul style="list-style-type: none"> Good water washout resistance. Non-melt Excellent anti-rust, anti-corrosion, anti-oxidation properties Minimum oil separation or bleeding even under hot conditions 	2	n/a	460	Smooth/Red	Bentone
CALORIS MS 1	<ul style="list-style-type: none"> Hot applications 	<ul style="list-style-type: none"> Good water washout resistance. Non-melting. Excellent anti-rust, anti-corrosion, anti-oxidation properties Contains moly to reduce friction and wear 	1	n/a	460	Smooth	Bentone
CUP GREASE	<ul style="list-style-type: none"> General purpose calcium grease designed for cup service, small gear boxes, ball and roller type bearings 	<ul style="list-style-type: none"> High dropping point Incorporates anti-wear, anti-corrosion, and anti-oxidation additives Excellent lubricity properties Outstanding water washout resistance Good mechanical and thermal stability Good pumpability 	1, 2	-30 to 200 F	22	Buttery/Clear Amber	Calcium
TM GEAR	<ul style="list-style-type: none"> Railway traction motor 	<ul style="list-style-type: none"> Good adhesion and is easily dispersed in centralized lube systems Excellent EP and frictional properties Oxidation and corrosion resistant 	1	30 to 300 F	1500	Very Tacky/Black	Sodium
VELOX 3	<ul style="list-style-type: none"> Multi-purpose, extremely water resistant grease 	<ul style="list-style-type: none"> Extremely water resistant Incorporates anti-corrosion additives Seals against dirt and water Readily pumpable in cold conditions 	1	-35 to 200 F	60	Smooth/Black	Calcium
WHITE PETROLATUM	<ul style="list-style-type: none"> Versatile ingredient and lubricant for food and pharmaceutical use 	<ul style="list-style-type: none"> Water resistant USDA H-1 lubricant and USDA H-3 release agent Clear, non-staining 	n/a	0 to 120	n/a	Buttery/Clear	Wax
MULTI-SERVICE OGL XH	<ul style="list-style-type: none"> Very heavily loaded open gear applications. Recommended for: all exposed open gears, guide rails, fifth wheels, swing racks, house rails and rollers, slide ways, ball mills, shovels, girth gears, chains, sprockets, wire ropes, and kilns 	<ul style="list-style-type: none"> Good adhesion and cohesion Easily dispersed Excellent water washout resistance Withstands heavy shock loading Excellent anti-rust, anti-corrosion, and anti-oxidation properties 	0	-9 to 110 C	n/a	Smooth/Black	Moly, Graphite

Food Grade

SPECIALTY GREASES CONTINUED

PRODUCT	APPLICATION	ADVANTAGES	NLGI GRADE	OPERATING TEMP RANGE (°F)	BASE OIL VISCOSITY, CST @ 40°C	TEXTURE/COLOR	THICKENER
SPINNING GREASE	<ul style="list-style-type: none"> Normally applied in a thin smear to blanks which are to be spun. After spinning, parts may be cleaned with petroleum or chlorinated solvents or by immersion in an agitated hot caustic bath 	<ul style="list-style-type: none"> Provides an excellent barrier between the forming tool and the workpiece to prevent excessive heat build-up and scoring during spinning operations 	5		22	Hard/Tan	Calcium
JET MARINE GREASE	<ul style="list-style-type: none"> Water resistant grease off-shore and marine applications Drilling equipment 	<ul style="list-style-type: none"> ISO 6743-9: L-XBBIB1 DIN 51 502: MPG1-20 Approved by: Vallourec & Mannesmann tubes (V&M) for protection of drilling tube threads during storage (STLI502) Very good anti-wear and extreme pressure properties Adheres well to metal which ensures good sealing 	1	-20 to 110 C	n/a	Tacky/Orange	Calcium
SAFEGARD 111 SYNTAC LUBE	<ul style="list-style-type: none"> Synthetic spray grease that is light colored with outstanding lubricity and anti-wear properties It is tacky, adhesive, possesses high surface polarity and resists moisture and oxidation 	<ul style="list-style-type: none"> Tacky, adhesive, highly polar Excellent lubricity Excellent anti-wear properties Displaces moisture Wide operating temperature range Prolongs equipment life Dissolves varnish and carbon deposits 	0	0 to 250 C	n/a	Light Amber Liquid	Special
STATERMIC XHT	<ul style="list-style-type: none"> Special grease formulated with fluorinated components Resists hydrocarbons or glue For use in specialty applications working under high temperatures Medium to heavy loads 	<ul style="list-style-type: none"> ISO 6743-9: L-XBGDB-2 DIN 51502: KFKP2U-25 Synthetic composition Compatible with most of the plastic and metal materials used in the industry (except fluorinated components) 	2	-25 to 250 C	147	White/Homogeneous	Fluorocarbon Thickener

Synthetic



Industrial

TOTAL lubricants offer a comprehensive range of industrial oils, greases and special products for specialties such as: hydraulics; gears; compressors and pneumatic equipment; turbines and engine oils; and others.

Our products are formulated to maximize efficiency and provide optimum performance in extreme conditions.



HYDRAULIC FLUIDS: HM HYDRAULIC FLUIDS, HT/HP

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
AZOLLA AF	Mineral	<ul style="list-style-type: none"> Hydraulic systems especially sensitive to the formation of deposits Bearings and miscellaneous equipment 	<ul style="list-style-type: none"> Ashless additives TOST = 4000 hours Very good anti-wear and thermal stability performances Very good filterability in service even in the presence of water 	22 to 100	<ul style="list-style-type: none"> ISO 11158 HM DIN 51524-2 HLP Eaton I-286S, M-2950S Denison HF0, HF1, HF2
AZOLLA D	Mineral	<ul style="list-style-type: none"> Detergent anti-wear hydraulic oil 	<ul style="list-style-type: none"> Long equipment life time High operating reliability 	46	<ul style="list-style-type: none"> ISO 6743-4 DIN 51 524 p 2, HLP (with the exception of water separation) AFNOR NF E 48 603 HM (with the exception of water separation) MAN N 698 Müller Weingarten
AZOLLA DZF	Mineral	<ul style="list-style-type: none"> All hydraulic systems 	<ul style="list-style-type: none"> Ashless additives Reinforced EP properties Detergent fluid preventing deposits in the circuits 	10 to 68	<ul style="list-style-type: none"> ISO 11158 HM ISO 12925 CKC DIN 51524-2 HLPD Müller Weingarten MAN N698 HLPD
AZOLLA HP	Mineral	<ul style="list-style-type: none"> High zinc for high pressure hydraulic systems 	<ul style="list-style-type: none"> Superior anti-wear properties. High antiwear protection insures maximum equipment life Resistance to hydrolysis and oxidation. Non-staining and non-corrosive towards metals Good compatibility with elastomers and seals Excellent water/oil demulsification properties Excellent anti-foaming, anti-corrosion, and anti-oxidation properties 	32, 46, 68	<ul style="list-style-type: none"> Denison HF-0, HF-1, HF-2 Vickers I-286-S, M-2950-S ISO 6743/4 Category HM Cincinnati Milacron P68, P69, P70 DIN 51524 PART 2 Category HLP US Steel 127 GM LH-04-1, LH-06-1, LH-15-1 Sauer Danfoss Rexroth Bosch, variable vane pumps
AZOLLA VTE	Mineral	<ul style="list-style-type: none"> Ashless, zinc-free high performance hydraulic oil 	<ul style="list-style-type: none"> Excellent thermal stability prevents sludge formation Superior anti-wear characteristics Quick air release and good anti-foam properties Good demulsibility provides quick water separation 	22	<ul style="list-style-type: none"> AFNOR NF E 48-603 HM DIN 51524-2 HLP ISO 6743-4 HM Cincinnati Milacron P68, P69, P70 Vickers I-286-S
AZOLLA VTR	Mineral	<ul style="list-style-type: none"> Specially designed for Voith Turbo-transmissions Voith Turbo gear boxes Hydrokinetic transmissions and couplings 	<ul style="list-style-type: none"> Dispersant and detergent fluid limiting deposits Very good load capacity (FZG>12) and anti-wear protection Thermal stability Very low foaming 	32	<ul style="list-style-type: none"> ISO 6743-4 HM DIN 51524 HLPD Voith Turbo SNCF
AZOLLA ZS	Mineral	<ul style="list-style-type: none"> Hydraulic systems, bearings and miscellaneous devices 	<ul style="list-style-type: none"> Anti-wear and anticorrosion properties Thermal stability and resistance to oxidation Filterability even in the presence of water 	10 to 150	<ul style="list-style-type: none"> ISO 11158 HM • DIN 51524-2 HLP Eaton I-286S, M-2950S Denison HF0, HF1, HF2



HYDRAULIC FLUIDS: HM HYDRAULIC FLUIDS, HT/HP CONTINUED

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
AZOLLA ZS+	Mineral	<ul style="list-style-type: none"> All types of hydraulic pumps and motors that require anti-wear hydraulic oils 	<ul style="list-style-type: none"> Long equipment life and high operating reliability Longer TOST life than Azolla ZS Non-staining, non corrosive towards metals 	32, 46, 68	<ul style="list-style-type: none"> Denison HF-0, HF-1, HF-2 Vickers I-286-S, M-2950-S ISO 6743/4 Category L-HM Cincinnati Milacron P68, P69, P70 DIN 51524 PART 2 Category HLP AFNOR E48603 Category HM
HD INDUS. OIL SAE 10W	Mineral	<ul style="list-style-type: none"> High performance hydraulic oil for off-road equipment 	<ul style="list-style-type: none"> Exceptional detergency and dispersancy High chemical stability and resistance to oxidation Excellent anti-wear, anti-corrosion, anti-foam and oxidation resistance 	37 cSt @ 40°C	<ul style="list-style-type: none"> Caterpillar hydraulic oil requirements MIL-L-2104E
DROSER A H		<ul style="list-style-type: none"> Hydraulic systems and machine tool slideways 	<ul style="list-style-type: none"> Superior anti-wear properties insuring maximum equipment life Resistance to hydrolysis and oxidation Inert towards metals (non-staining and no corrosive wear) Good compatibility with elastomers and seals Excellent water/oil demulsification properties High load capacity Controlled coefficient of friction (eliminates stick-slip or chattering) Excellent anti-foaming, anti-corrosion, and anti-oxidation properties 	32, 68	<ul style="list-style-type: none"> DIN 51524 PART 2 Hydraulic fluids
DROSER A MS		<ul style="list-style-type: none"> High performance multifunctional zinc free oils for machine tools 	<ul style="list-style-type: none"> Excellent EP properties Excellent anti-stick-slip properties Strong stickiness grades (ISO VG 68 to 320) Very low coefficient of friction Anti oil mist properties Very good foaming resistance Very good oxidation resistance Very good protection against rust Very good anti-wear properties Good filterability 	2, 10, 22, 32, 68, 100, 150, 220	



HYDRAULIC FLUIDS: HV HYDRAULIC FLUIDS, LOW TEMPS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
AEROHYDRAULIC 930 S	Mineral	<ul style="list-style-type: none"> Wide temperature range applications 	<ul style="list-style-type: none"> Dyed blue for easy recognition Superior anti-wear properties High protection against wear insuring maximum equipment life Resistance to hydrolysis and oxidation Inert towards metals (non-staining and no corrosive wear) Good compatibility with elastomers and seals Extremely low pour point Excellent anti-foaming, anti-rust, anti-corrosion, and anti-oxidation properties Uniform viscosity control Reduces deposit formation Excellent for use in very cold climates 	26 cSt at 40°C	
EQUIVIS AF GREEN	Mineral	<ul style="list-style-type: none"> Hydraulic systems operating outdoors 	<ul style="list-style-type: none"> Extension of oil drain intervals Improved shear stability 	32	<ul style="list-style-type: none"> ISO 11158 HV DIN 51524 HVLP
EQUIVIS HE	Synthetic	<ul style="list-style-type: none"> Hydraulic fluid designed for industrial hydraulic systems and mobile equipments 	<ul style="list-style-type: none"> Optimizes the hydraulic systems performances and reliability compared to conventional HM or HV hydraulic fluids High and very shear stable viscosity index Reinforced anti-foam properties and very good air release behavior limiting the air content of the fluid, maintaining a very low fluid compressibility and reducing cavitations issues Very good rust and corrosion protections. High thermal and hydrolytic stabilities Very high oxidation stability for a longer service life 	32, 46, 68	<ul style="list-style-type: none"> ISO 11158, HV DIN 51524-3, HVLP DENISON approved: HF0, HF1, HF2 Meets the DYNAVIS® performance standard
EQUIVIS XLT	Mineral	<ul style="list-style-type: none"> Very low temp operation (down to -40C) Viscometrics of MIL 5606 	<ul style="list-style-type: none"> Viscosity index of 350 Ashless additives Excellent filtration properties even in the presence of water TOST = 4000 hours 	15	
EQUIVIS XV	Mineral	<ul style="list-style-type: none"> Low temp operation (down to -30C) 	<ul style="list-style-type: none"> Viscosity index > 250 	32	
EQUIVIS ZS	Mineral	<ul style="list-style-type: none"> Hydraulic systems operating outdoors 	<ul style="list-style-type: none"> Very good thermal stability and resistance to oxidation Very good filterability even in the presence of water, g, anti-corrosion, and anti-oxidation properties 	15 to 100	<ul style="list-style-type: none"> ISO 11158 HV DIN 51524-3 HVLP Vickers Cincinnati-Milacron P68, P69, P70
ALBAVIS AL 50-600	Mineral	<ul style="list-style-type: none"> Mineral (paraffinic) oil-based industrial machine lubricant for bearings, gears, slides, guides, and certain hydraulic systems Recommended use in circulatory systems, "once-through" applications 	<ul style="list-style-type: none"> Very good anti-wear properties Very good adhesiveness Resistance to hydrolysis and oxidation Non-staining and non corrosive to metals Good filterability characteristics Rapid water demulsibility Good low foam/air release characteristics 	190 cSt @ 40°C	<ul style="list-style-type: none"> Approved for use in Bijur lubrication equipment



HYDRAULIC FLUIDS: BIODEGRADABLE

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
BIOHYDRAN AW	Biodegradable vegetable base stocks and non-toxic additives	<ul style="list-style-type: none"> For high pressure, high speed hydraulic pumps Hydraulic applications operating in environmentally sensitive areas 	<ul style="list-style-type: none"> Long equipment life and high operating reliability Excellent water/oil demulsification properties Excellent anti-foaming, anti-corrosion, and anti-oxidation properties 	32 to 68	<ul style="list-style-type: none"> Dennison HF-0 CEC-L-33-A-94 biodegradability test German Hygiene Institute - WGK 0 Vickers 35VQ25 and V104C
BIOHYDRAN SE	Biodegradable saturated synthetic esters	<ul style="list-style-type: none"> Hydraulic systems operating outdoors Operating temperatures likely to exceed +80 °C 	<ul style="list-style-type: none"> Extension of oil drain intervals due to high thermal stability Excellent compatibility with elastomers 	32 to 68	<ul style="list-style-type: none"> ISO 15380 HEES European Ecolabel Swedish Standard SS 15 54 34 Denison HF1, HF2, HF6 Sauer Danfoss

HYDRAULIC FLUIDS: FIRE RESISTANT

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
HYDRANSAFE HFDU	Polyol ester	<ul style="list-style-type: none"> Operating temperature: -10 °C to +70 °C on a continuous basis, +120 °C at peak periods. 	<ul style="list-style-type: none"> Excellent fire resistance Excellent biodegradability (OECD 301B) Excellent anti-wear properties Miscible with mineral oils 	46, 68	<ul style="list-style-type: none"> ISO 6743-4 HFDU Factory Mutual Danieli
HYDRANSAFE WG	Water, ethylene glycol	<ul style="list-style-type: none"> Hydraulic circuits that regulate furnaces, continuous casting unit, or quench operations It is used in high fire-risk areas Recommended operating temperature range is from -20 C to 60 C 	<ul style="list-style-type: none"> Long service life and high operating reliability Good compatibility with most other water-glycol based hydraulic fluids Excellent fire resistance 	46	<ul style="list-style-type: none"> Denison HF-4, US Steel 171 ISO 12922 HFC ISO 6743/4 HFC
HYDRANSAFE NS	Polyglycol	<ul style="list-style-type: none"> Synthetic bio-friendly anti-wear hydraulic oil used for hydraulic systems 	<ul style="list-style-type: none"> Biodegradable and water soluble Long equipment life and high operating reliability Non-sheen 	46	<ul style="list-style-type: none"> AFNOR NF E 48-603 HV VPG-compliant DIN 51524 PART 3 Category HVLP ISO 6743-4 Category HV Vickers I-286-S, M-2950-S

Synthetic



GEARS: MINERAL GEAR OILS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
CARTER BIO	Synthetic POE	<ul style="list-style-type: none"> Gears offering a risk of incidental discharges into the environment 	<ul style="list-style-type: none"> Biodegradable product. VGP Compliant Very good EP, anti-wear and anticorrosion properties Oxidation stability 	68 to 460	<ul style="list-style-type: none"> ISO 12925-1 CKD DIN 51517-3 CLP
CARTER EP	Mineral	<ul style="list-style-type: none"> High loads, high temperatures 	<ul style="list-style-type: none"> Extension of oil drain intervals Protection against micropitting 	68 to 1000	<ul style="list-style-type: none"> ISO 12925-1 CKD DIN 51517-3 CLP AGMA 9005-E02 EP U. S. Steel 22 Flender
CARTER ST	Mineral	<ul style="list-style-type: none"> High loads, moderate temperatures 	<ul style="list-style-type: none"> Superior protection of gears and bearings due to excellent extreme-pressure performances Anticorrosion protection 	150 to 680	<ul style="list-style-type: none"> ISO 12925-1 CKC DIN 51517-3 CLP
CYLAN WG	Mineral	<ul style="list-style-type: none"> Worm gears, wet compressor cylinders, steam cylinders, wet gases, natural gas compressor cylinders and water injection pumps 	<ul style="list-style-type: none"> Displaces water and wets metal surfaces High resistance to water wash off High flash point 	150 to 1000	<ul style="list-style-type: none"> Meets AGMA Comp gear Category (American Gear Manufacturer's Association) ISO 6743-0Z ISO code CKE DIN code Z
MIST OIL	Mineral	<ul style="list-style-type: none"> Heavily loaded enclosed gears Mist lubrication systems 	<ul style="list-style-type: none"> Excellent extreme-pressure and anti-wear performances, remarkable protection of heavily loaded gear teeth Excellent misting characteristics for centralized mist lubricant systems 	220, 460	<ul style="list-style-type: none"> AGMA 250.04 AFNOR NFE 60.200 – Category CKC Cincinnati Machine P-63 (ISO 68), P-76 (ISO 100), P-77 (ISO 150), P-74 (ISO 220), P-59 (ISO 320) P-35 (ISO 460) David Brown ET 33/80 DIN 51517 Part 3 – Group CLP and DIN 51502 – Group CLP ISO/TR 3498 – Category CKC ISO 12925-1 US Steel 224
OGL 15R	Solvent, Bitumen	<ul style="list-style-type: none"> Viscous open gear compound cutback with solvent 	<ul style="list-style-type: none"> Excellent dispensability with excellent EP Chlorine-free solvent 	2050 cSt @ 40°C (with solvent)	<ul style="list-style-type: none"> AGMA 15R grade
PURE GEAR OIL, SAE GRADES	Mineral	<ul style="list-style-type: none"> Non-additized gear oil 	<ul style="list-style-type: none"> Good lubricity Low odor Good low temperature flow properties Good oil-water separation behavior 	226 cSt, 480 cSt @ 40°C	<ul style="list-style-type: none"> API Service GL-1 Available in SAE 90 and 140
PURE MINERAL SAE GRADES	Mineral	<ul style="list-style-type: none"> Used as process oils in rubber, plastics, textiles, leather, and the ink industries, typically as "once-through" 	<ul style="list-style-type: none"> Medium to low natural viscosity index Perfectly suitable for blending Bright and clear Good lubricity Non-staining 	140 cSt, 200 cSt @ 40°C	<ul style="list-style-type: none"> API Service GL-1 Available in SAE Grades 30 and 40

GEARS: MINERAL GEAR OILS CONTINUED

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
CARTER PG	Synthetic PAG	<ul style="list-style-type: none"> Lubrication of gears operating under the most severe conditions (high shock loads, extreme temperatures and corrosive atmospheres) Lubrication of worm gears 	<ul style="list-style-type: none"> Very high and shear stable viscosity index Low coefficient of friction: greater protection for non-ferrous parts, such as the bronze ring gear in worm gear systems, offering an energy savings up to 10% compare with mineral oil Excellent thermal stability extends oil life Very good foam resistance Excellent extreme pressure and anti-wear properties Very high level of corrosion protection (sea water and acidic water) Non-staining to yellow metals 	150 to 680	<ul style="list-style-type: none"> DIN 51517 Part 3 – Group CLP NF-ISO 6743-6 Category CKS/CKT David Brown, CMD
CARTER SH	Synthetic PAO	<ul style="list-style-type: none"> Very high loads and high temperatures in difficult environments Gears for wind turbines 	<ul style="list-style-type: none"> Excellent protection against corrosion, wear and micropitting Excellent thermal stability Can operate outdoors (very low pour point) 	150 to 1000	<ul style="list-style-type: none"> ISO 12925-1 CKD DIN 51517-3 CLP Flender FAG SKF

Synthetic



COMPRESSORS AND PNEUMATIC EQUIPMENT: REFRIGERATING COMPRESSORS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
LUNARIA FR	Naphthenic Mineral Oil	<ul style="list-style-type: none"> Refrigerating compressors using CFC, HCFC and NH3 as a refrigerant 	<ul style="list-style-type: none"> Evaporating temperature > -15 °C 	32 to 100	<ul style="list-style-type: none"> ISO 6743-3 DRA APV • Bock • Bitzer • Gram • Carrier Grasso • Howden • J & E Hall Sabroe • York
LUNARIA SK	Synthetic Alkyl Benzene	<ul style="list-style-type: none"> Refrigerating compressors using CFC or HCFC refrigerants 	<ul style="list-style-type: none"> Evaporating temperature > -60 °C 	55 to 150	<ul style="list-style-type: none"> ISO 6743-3 DRE APV • Bitzer • Bock • Sabroe • York RefComp
PLANETELF ACD	Synthetic POE	<ul style="list-style-type: none"> Refrigerating compressors using HFC refrigerants 	<ul style="list-style-type: none"> Evaporating temperature > -60 °C 	32 to 220	<ul style="list-style-type: none"> ISO 6743-3 DRD Aerzen • Bock • Frascold • Grasso Howden • Sabroe • Sulzer • York
REFRIGERATION OIL 3	Mineral	<ul style="list-style-type: none"> Semi-synthetic high-performance refrigeration oil 	<ul style="list-style-type: none"> Cleanliness and high compressor performance improves efficiency of heat exchangers 	68	<ul style="list-style-type: none"> DIN 51 503 Class KA ISO 6743-3B-L-DRA RECOMMENDED FOR THE FOLLOWING OEMS CALLING FOR NAPHTHENIC OIL: Carrier • COpeland • Tecumseh Trane • York
REFRIGERATION OIL 300	Mineral	<ul style="list-style-type: none"> Highly refined naphthenic refrigeration oil Ammonia, CFC or HCFC refrigerant compressor service 	<ul style="list-style-type: none"> Low floc point for CFC and HCFC refrigerants Good chemical and physical stability Low pour point Good oxidation resistance compared to common naphthenic oil 	68	<ul style="list-style-type: none"> DIN 51 503 Class KA ISO 6743-3B-L-DRA RECOMMENDED FOR THE FOLLOWING OEMS CALLING FOR NAPHTHENIC OIL: Carrier • COpeland • Tecumseh Trane • York
PG-2 COMPRESSOR FLUID	Polyglycol	<ul style="list-style-type: none"> Premium natural gas compressor oil or hydrocarbon streams Use for hydrocarbon gas densities of gas 	<ul style="list-style-type: none"> Its resistance to hydrocarbon dilution extends drain intervals and parts life Excellent thermal and oxidation stability under high temperature operation reduces sludge and deposit formation Hydrogen sulfide inhibited Year around service 	90 cSt @ 40°C	<ul style="list-style-type: none"> ISO 6743-3B classified DGC.
LUNARIA 150	Mineral	<ul style="list-style-type: none"> Air-cooled reciprocating compressor lubricant 	<ul style="list-style-type: none"> Low carbon residue Non-foaming Reduces valve deposits Efficient crankcase lubrication 	150	

Synthetic

COMPRESSORS AND PNEUMATIC EQUIPMENT: AIR COMPRESSORS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
DACNIS	Mineral	<ul style="list-style-type: none"> For rotary and reciprocating air compressors 	<ul style="list-style-type: none"> Compressor efficiency optimized Operating cost minimized 	32 to 150	<ul style="list-style-type: none"> ISO 6743-3 classified DAG & DAB for heavy duty applications. DIN 51 506 VD-L for the use of DACNIS 100 & 150 in reciprocating air compressors. <p>Depending on the viscosity grades, DACNIS meet the requirements of:</p> <ul style="list-style-type: none"> Bauer • Cirrus • Compair Dresser Rand Neuenhauser Sauer & Sohn Sulzer Burckhardt • Tanabe
DACNIS PG	Synthetic (PAG)	<ul style="list-style-type: none"> Premium rotary air compressor lubricants 	<ul style="list-style-type: none"> Excellent performance under severe conditions Wide operating range 	46	<ul style="list-style-type: none"> NF-ISO 6743 Classified DAC and DAJ for heavy-duty applications Meets the DIN 51 506 VDL requirements
DACNIS SB	Synthetic Blend	<ul style="list-style-type: none"> Portable rotary air compressor service 	<ul style="list-style-type: none"> Ashless anti-wear oil with controlled volatility Contains ingredients to reduce sludge and deposits Good chemical stability with resistance to oxidation Excellent anti-corrosion and anti-foam resistance Intermediate priced between synthetics and mineral oils 	32 to 1000	<ul style="list-style-type: none"> ISO 9743-3 Class DAA (reciprocating and DAH (rotary)) <p>Recommended to replace “mineral oil” or “hydrotreated petroleum” or “synthetic blend” based air compressor lubricants offered from following manufacturers of air compressors:</p> <ul style="list-style-type: none"> Atlas-Copco • Compair Gardner-Denver • Ingersoll-Rand Kaeser • LeRoi • Quincy • Sullair and others.
DACNIS SE	Synthetic (POE)	<ul style="list-style-type: none"> High-pressure reciprocating air compressors, rotary compressors and turbocompressors 	<ul style="list-style-type: none"> High thermal stability Low pour point 	46 to 100	<ul style="list-style-type: none"> ISO 6743-3 DAJ • DIN 51 506 VDL Atlas Copco • Bauer • CompAir Dresser-Rand • Sauer & Sohn Tanabe
SYNOLAN 1000	Synthetic Ashless Multi-purpose Oil	<ul style="list-style-type: none"> Compressors, gears, bearings, circulating systems 	<ul style="list-style-type: none"> Useful temperature range: -20F to 450F Compatible with conventional mineral oils and many synthetic oils 	32 to 1000	<ul style="list-style-type: none"> N/A
SYNOLAN DE	Synthetic Diester	<ul style="list-style-type: none"> For all types of compressors 	<ul style="list-style-type: none"> Excellent performance under heavy duty conditions. Ashless Excellent anti-wear, anti-corrosion, anti-foam, rust and oxidation protection 	32 to 150	<ul style="list-style-type: none"> ISO 6743 DAC and DAJ for heavy duty applications Meets DIN 51 506 VDL requirements

 Synthetic

COMPRESSORS AND PNEUMATIC EQUIPMENT: GAS & PROCESS GAS APPLICATIONS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
PGI GAS COMPRESSOR	Synthetic (PAG)	<ul style="list-style-type: none"> Natural gas compressor oil for wet gas 	<ul style="list-style-type: none"> Ideal for wet hydrocarbon gas compression or transfer Its resistance to hydrocarbon dilution extends drain intervals and parts life Excellent thermal and oxidation stability Used in propane refrigeration systems Year round service 	46 to 150	<ul style="list-style-type: none"> ISO 6743-3B classified DGC
PRIMERIA	Synthetic (PAG)	<ul style="list-style-type: none"> NG and CO2 Compressor Oil 	<ul style="list-style-type: none"> Ideal for CO2 compression-reduces carry over of liquid CO2. Extends drain intervals and equipment life Hydrogen sulfide inhibited Year round service Excellent lubricity allows these fluids to be used in worm gear applications Excellent thermal and oxidative stability Excellent anti-wear, anti-corrosion, anti-foam, rust and oxidation protection 	100 to 220	<ul style="list-style-type: none"> ISO 6743-3B Classified DGE and/or DGC
PRIMERIA LPG	Synthetic Polyglycol	<ul style="list-style-type: none"> Compressor oil for LPG Hydrocarbon gases, and refrigerating compressors using LPG Hydrocarbon gases as refrigerant fluid 	<ul style="list-style-type: none"> Excellent chemical stability and resistance to oxidation Safety operation of the compressor due to the anti-wear, anti-corrosion and anti-rust properties of the oil Low pour point 	141 cSt @ 40°C	<ul style="list-style-type: none"> Sulzer Burckhardt Howden Mycom Aerzen
ORITES DS 270	Synthetic (PAG)	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene 	<ul style="list-style-type: none"> Excellent lubricity Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs 	270	<ul style="list-style-type: none"> NSF H1, ISO 6743-3: DGC Burckhardt Compression for high pressure
ORITES DS 270 X	Synthetic (PAG)	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene Also for compressors dedicated to NH3 synthesis Sulfur free for iron oxide catalyst most used in ammonia synthesis 	<ul style="list-style-type: none"> Resistant to corrosion No products of animal origin No GMOs Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs 	270	<ul style="list-style-type: none"> NSF H1, ISO 6743-3: DGC Burckhardt Compression for high pressure
ORITES TW 220	USP White Oil	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene Also for compressors dedicated to NH3 synthesis Sulfur free for iron oxide catalyst most used in ammonia synthesis 	<ul style="list-style-type: none"> Excellent lubricity Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs 	220	<ul style="list-style-type: none"> ISO 6743-3: DGC NSF H1 and ISO 21469 certified Burckhardt Compression for high pressure
ORITES TW 220 X	USP White Oil	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene and EVA 	<ul style="list-style-type: none"> TW 220 with enhanced resistance to corrosion. 	220	<ul style="list-style-type: none"> ISO 6743-3: DGC NSF H1
ORITES EDA 220	USP White Oil	<ul style="list-style-type: none"> Lubrication of ethylene (hyper-) compressors cylinders for the production of low density polyethylene and EVA 	<ul style="list-style-type: none"> Excellent lubricity Complies with European Directive 2002/72/EC for plastics and articles intended to come into contact with food stuffs 	220	<ul style="list-style-type: none"> ISO 6743-3: DGC NSF H1

Synthetic Food Grade

COMPRESSORS AND PNEUMATIC EQUIPMENT: PNEUMATIC EQUIPMENT

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
ATL 16A	Proprietary Mixture	<ul style="list-style-type: none"> Air Tool Pneumatic System Lubricant 	<ul style="list-style-type: none"> Enhanced anti-wear and lubrication properties Rust protection Oxidation stability Longer equipment life 	22	<ul style="list-style-type: none"> n/a
ATL WINTERLUBE Grade 2	Proprietary Mixture	<ul style="list-style-type: none"> Pneumatic tool and equipment antifreeze and lubricant 	<ul style="list-style-type: none"> Enhanced anti-wear and lubrication properties Rust protection Thermal stability Low pour point De-icing Fire resistant, non-flammable Protects tools 	59 cSt @ 40°C	<ul style="list-style-type: none"> n/a
FINAROC	Mineral	<ul style="list-style-type: none"> Heavy-duty pneumatic equipment (rock drill, jackhammers, etc) 	<ul style="list-style-type: none"> High shock loading protection and wear protection under both wet and dry conditions Enhanced adhesion by use of a tackiness agent allows it to withstand severe pounding of many pneumatic tools Displaces water and reduces icing in cold weather Excellent anti-corrosion properties 	68 to 460	<ul style="list-style-type: none"> ISO 6743-Category PA
KILFROST	Proprietary Mixture	<ul style="list-style-type: none"> Pneumatic tool and antifreeze lubricant 	<ul style="list-style-type: none"> Prevents freezing Restores power Absorbs moisture Fire resistant Enhanced tool wear protection Provides rust and corrosion protection Prevents tool "dieseling" 	24 cSt @ 40°C	<ul style="list-style-type: none"> Atlas Copco C.P.T. compare Gardner Denver (Dry Drilling) Halifax Tool Co. Joy Sullivan Ingersoll Rand. Ishikawakima-Harima H.I. Demag-FMA Flottmann Gebr. BÖhlerm Irmer & Elzem Krupp Premag Vibratechniques Craco Pumps Neumo Martonair C.A. Norgren Ditta Ing. Mario Axerio Off. Mecc. Di Precisione G. Sclaverano



TURBINES AND ENGINE OILS: TURBINES

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
PRESLIA	Mineral	<ul style="list-style-type: none"> Used in hydraulic, steam, and gas turbines, and as a centrifugal compressor 	<ul style="list-style-type: none"> Very good defoaming, air release and demulse properties High level of protection against oxidation 	32 to 100	<ul style="list-style-type: none"> ISO 6743-5 THA/THE/TSA/TSE/TGA/TGB/TGE/TGSB ISO 8068 (ISO VG 32 & 46) - DIN 51515 - ASTM D 4304 type I & II - JIS K-2213 type 2 w/add - GB 11120-89 L-TSA Alstom HTGD 90117 ALSTOM HYDRO HTWT 600050 General Electric GEK 28143B, GEK 32568G, GEK 27070, GEK 46506E MAN Diesel & Turbo SPD10000494596 MAN Turbo SPD 10000242284 Siemens TLV 901304, TLV 901305 Solar ES 9-224 W Class II
PRESLIA GT	Hydrocracked Mineral	<ul style="list-style-type: none"> Steam, gas, and combined-cycle turbines 	<ul style="list-style-type: none"> Very high resistance to oxidation Reinforced anti-wear and extreme-pressure additivation Longer oil drain intervals 	32, 46	<ul style="list-style-type: none"> ISO 6743-5 TSA/TSE/TGA/TGB/TGE/TGSB/TGSE ISO 8068 - DIN 51515 - ASTM D 4304 type I & II - JIS K-2213 type 2 w/add - GB 11120-89 L-TSA Alstom HTGD 90117 General Electric GEK 28143B, GEK 32568G, GEK 107395A, GEK 101941A, GEK 27070, GEK 46506 E MAN Turbo SPD 10000494596 Siemens TLV 901304, TLV 901305 Škoda turbíny Plzen Solar ES 9-224 W Class II
PRESLIA GT NA	Hydrocracked Mineral	<ul style="list-style-type: none"> Steam, gas, and combined-cycle turbines 	<ul style="list-style-type: none"> Very high resistance to oxidation Reinforced anti-wear and extreme-pressure additivation Longer oil drain intervals 	68	<ul style="list-style-type: none"> ISO 6743-5 TSA/TSE/TGA/TGB/TGE/TGSB/TGSE ISO 8068 - DIN 51515 - ASTM D 4304 type I & II - JIS K-2213 type 2 w/add - GB 11120-89 L-TSA Alstom HTGD 90117 General Electric GEK 28143B, GEK 32568G, GEK 107395A, GEK 101941A, GEK 27070, GEK 46506 E MAN Turbo SPD 10000494596 Siemens TLV 901304, TLV 901305 Škoda turbíny Plzen Solar ES 9-224 W Class II
PRESLIA SE JET	Synthetic (POE)	<ul style="list-style-type: none"> Aero-derivative turbines 	<ul style="list-style-type: none"> Excellent resistance at high temperatures 	25 cSt @ 40°C	<ul style="list-style-type: none"> MIL-PRF-23699F/SAE AS5780 Class SPC Allison Rolls Royce (USA) General Electric Rolls Royce (UK) Turbomeca
SYNOLAN TURBINE OIL	Synthetic Gas Turbine Oils	<ul style="list-style-type: none"> Gas Turbine Oil for all types of moving parts 	<ul style="list-style-type: none"> Long fluid life and high operating reliability Useful temperature range from -20 to 450F 	32, 46	<ul style="list-style-type: none"> Solar Turbine ES9-224

Synthetic

TURBINES AND ENGINE OILS: GAS ENGINES

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
DISOLA 4015	Mineral	<ul style="list-style-type: none"> Natural gas engine oil intended for applications where a high degree of acidity is in the process gas Ash >1% TBN 15 	<ul style="list-style-type: none"> Turbocharged and naturally aspirated main and auxiliary engines of all types and all ratings, running Reduction gear lubricating 	40	<ul style="list-style-type: none"> Recommended in Guascor engines operating in land-fill applications
NATERIA CATCO NA	Mineral	<ul style="list-style-type: none"> All types of moderate-duty service Clean pipeline gas Ash 0.4-0.5% TBN 5.0 	<ul style="list-style-type: none"> Excellent detergency and dispersancy. Excellent anti-wear, anti-corrosion, anti-foam, & rust protection Excellent chemical stability with resistance to oxidation and nitration 	30 & 40	<ul style="list-style-type: none"> API SERVICE CF/CD RECOMMENDED: Caterpillar MDEWaukesha Cooper-Bessemer 4-cycle engines Dresser-Rand Class I, II, and III Enterprise Fairbanks-Morse Hercules Superior Waukesha (except VGF series) Worthington 4-cycle engines Deutz GE-Jenbacher MAN M 3271-2
NATERIA MH	Mineral	<ul style="list-style-type: none"> Premium, Low-Ash, Natural Gas Engine Oils for Severe Service Ash 0.4-0.6% TBN 6.2 	<ul style="list-style-type: none"> Excellent detergency and dispersancy. Excellent anti-wear, anti-corrosion, anti-foam, and rust protection Low volatility Excellent chemical stability with resistance to oxidation and nitration 	30 & 40	<ul style="list-style-type: none"> API SERVICE CF/CD RECOMMENDED: Caterpillar MDEWaukesha Cooper-Bessemer 4-cycle engines Dresser-Rand Class I, II, and III Enterprise Fairbanks-Morse Hercules Superior Waukesha (except VGF series) Worthington 4-cycle engines Deutz GE-Jenbacher MAN M 3271-2
NATERIA MJ	Mineral	<ul style="list-style-type: none"> Natural gas and biogas engines: purification stations, liquid manure, landfill sites Ash <1% TBN 8.8 	<ul style="list-style-type: none"> Long life oil Strengthened detergency 	40	<ul style="list-style-type: none"> MDE: 28XX, 30XX MAN 3721-2: All types MWM (Deutz): sulphate ash content from 0.5 to 1.0 wt.% MTU: biogas
NATERIA ALPHA	Mineral/ Ashless	<ul style="list-style-type: none"> 2 & 4cycle engines 	<ul style="list-style-type: none"> Long life oil Strengthened detergency 	30 & 40	<ul style="list-style-type: none"> Worthington



FORM RELEASE OILS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	VISC, CST @ 40°C	SPECIFICATIONS
MOLDOL 208 S	Mineral	• Ceramic Casting Oil	<ul style="list-style-type: none"> • Ensures good lubricant film • Promotes good surface finish • Mild odor • Excellent metal wetting ability • Displaces water • Prevents build-up on forms • Non-staining 	8	
MOLDOL 401 S				8	
MOLDOL 402 S				>3	• Contains solvent
MOLDOL 403 S				1.9	
MOLDOL 503 S				22	
MOLDOL 508 S				7-9	
MOLDOL 509 S				7	• NYDOT approved
MOLDOL 512 S				12	
MOLDOL 6601 S				2.8	
MOLDOL CM	Mineral	• Multi-purpose Concrete Mold Release Oils	<ul style="list-style-type: none"> • Good release characteristics • Non-staining • Very low VOC (volatile organic compounds) • Reduces concrete buildup on forms 	18 to 320	
MOLDOL PR 7172 S	Canola	• Paper Release Oil	<ul style="list-style-type: none"> • Ensures good lubricant film • Promotes good surface finish • Mild odor • Excellent metal wetting ability • Displaces water • Prevents build-up on forms • Non-staining • Water soluble 	39	• FDA 21 CFR 178.3620, FDA 21 CFR 176.170 and 176.180
MOLDOL PR 7291	Mineral	• Paper Release Oil	<ul style="list-style-type: none"> • Readily emulsifies in water • Allows easy paper sheet release • Promotes good surface finish • Mild odor • Excellent wetting ability • Non-staining • Water soluble 	22	• FDA 21 CFR 176.170 and 21 CFR 176.180



PROCESS OILS AND SOLVENTS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	VISC, CST @ 40°C	SPECIFICATIONS
FINASOL B	Hydrocarbon Solvent	<ul style="list-style-type: none"> Degreasing Solvent, Process Fluid 	<ul style="list-style-type: none"> Low viscosity, fast drying 	<1.4	<ul style="list-style-type: none"> This product is classified as combustible. Exercise customary fire safety precautions when using this product. Refer to MSDS for more detailed hazard information.
FINASOL S	Hydrocarbon Solvent	<ul style="list-style-type: none"> Degreasing Solvent, Process Fluid 	<ul style="list-style-type: none"> Low viscosity, moderate drying 	<2.0	<ul style="list-style-type: none"> This product is classified as combustible. Exercise customary fire safety precautions when using this product. Refer to MSDS for more detailed hazard information.
FINASOL VOC	Solvent	<ul style="list-style-type: none"> Degreasing solvent, process fluid in specialty metal finishing 	<ul style="list-style-type: none"> Low VOC Content (meets California VOC standards) Low odor. Non-corrosive Non-staining 	2.4	<ul style="list-style-type: none"> This product is classified as combustible. Exercise customary fire safety precautions when using this product. Refer to MSDS for more detailed hazard information.
PROCESS OIL N	Mineral	<ul style="list-style-type: none"> Napthenic Process Oils 	<ul style="list-style-type: none"> Medium to low natural viscosity index High aniline point for excellent solubility Perfectly suitable for blending Narrow distillation range Bright and clear Good lubricity Non-staining 	10 to 150	
SYNOLAN BARRIER FLUID	PAO	<ul style="list-style-type: none"> Premium quality synthetic sealing oils that can be used in a wide temperature range 	<ul style="list-style-type: none"> High natural viscosity index Excellent thermal and chemical stability Perfectly suitable for blending Bright and clear with low color Good lubricity Non-staining 	5 to 32	
PF&F ISO	Mineral	<ul style="list-style-type: none"> Group II Lubricating oils primarily used as process oils in a variety of industries: rubber, plastics, textiles, processing hides or skins, and the manufacture of printing inks Can also be used as anti-clumping agents and anti-dust agents 	<ul style="list-style-type: none"> High natural viscosity index Excellent thermal and chemical stability Perfectly suitable for blending Bright, clear and nearly colorless Good lubricity Non-staining 	10 to 100	

 Synthetic



HEAT TRANSFER FLUIDS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
VULCAN	Mineral	<ul style="list-style-type: none"> Very hot circulating oils systems (up to 600F) 	<ul style="list-style-type: none"> Excellent thermal stability High flash point High natural viscosity index 	22 to 68	<ul style="list-style-type: none"> ISO 6743-12 Family QA DIN 51502 Class L

WHITE OILS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
FINAVESTAN U	Medicinal White Oil	<ul style="list-style-type: none"> Designed for use in the pharmaceutical, cosmetic, plastics, and food industries 	<ul style="list-style-type: none"> NSF H-1 (all grades) NSF Standard 60 drinking water (210 grade only) 	SUS grades: 70 to 500	<ul style="list-style-type: none"> European Pharmacopoeia, most recent edition US Pharmacopoeia, most recent edition. British Pharmacopoeia, BP 2001. French Pharmacopoeia Française, 10th US FDA, 21 CFR 172.878, 21 CFR 178-3620(a), White Mineral Oil European Directive 2004/19/CE amending Directive 2002/72/EC
LYRAN U	Technical White Oil	<ul style="list-style-type: none"> Used as a process oil for small device lubrication, and as a raw material in plastics, rubbers, pesticides, inks, and textile oils 	<ul style="list-style-type: none"> Very high purity Odorless, flavorless, colorless Does not contain sulfur or aromatic hydrocarbons 	SUS grades: 70 to 500	<ul style="list-style-type: none"> FDA, 21 CFR 178-3620 (b)
NEVASTANE CLEAR	USP White Mineral Oil	<ul style="list-style-type: none"> Release agent in food processing industry both in direct contact, and incidental contact 	<ul style="list-style-type: none"> Water white Low and high temperature service High temperature stability Compatible with elastomers and seals Good film strength 	15, 68	<ul style="list-style-type: none"> NSF 3H & H1 Registered Food Grade Oil Kosher FDA 21 CFR 172.878 FDA 21 CFR 178.3620(a)

Food Grade

CIRCULATION OILS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
CIRKAN RO	Mineral	<ul style="list-style-type: none"> Apparatus and hydraulic circuits subjected to temperature constraints 	<ul style="list-style-type: none"> Anticorrosion protection of equipment Oxidation resistance 	32 to 460	<ul style="list-style-type: none"> European Pharmacopoeia, most recent edition US Pharmacopoeia, most recent edition. British Pharmacopoeia, BP 2001. French Pharmacopoeia Française, 10th US FDA, 21 CFR 172.878, 21 CFR 178-3620(a), White Mineral Oil European Directive 2004/19/CE amending Directive 2002/72/EC
CORTIS MS	Mineral	<ul style="list-style-type: none"> Antiwear oils for all types of moving parts 	<ul style="list-style-type: none"> Long fluid life and high operating reliability Ashless formula with high hydrolytic stability prevents deposits and maintains excellent filterability 	150 to 680	<ul style="list-style-type: none"> FDA, 21 CFR 178-3620 (b) DANIELI® BGV and ESS bearings MORGOIL® Standard Lubricant - SN 180 Part 3 MORGOIL® Advanced Lubricant - SN 180 Part 4
PMO	Mineral	<ul style="list-style-type: none"> Paper machine and antiwear circulating oil 	<ul style="list-style-type: none"> Excellent anti-foaming, anti-corrosion, and anti-oxidation properties Excellent anti-wear protection High natural viscosity index Good compatibility with elastomers and seals Excellent water separation and wet and dry filtration properties 	150, 320	<ul style="list-style-type: none"> NSF 3H & H1 Registered Food Grade Oil Kosher FDA 21 CFR 172.878 FDA 21 CFR 178.3620(a)



ONCE-THROUGH OILS

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
BAR AND CHAIN OIL	Mineral	<ul style="list-style-type: none"> Chain and chain saw oil 	<ul style="list-style-type: none"> Resists sling off and splatter Protects against bar and chain wear Lengthens chain and bar life Rust and corrosion inhibited Foam inhibited 	150	<ul style="list-style-type: none"> n/a
COOKER OIL	Mineral	<ul style="list-style-type: none"> Designed for use in continuous pressure cookers Suitable for valves, slides, chains, plain and antifriction bearings where there is high heat and steam condensate 	<ul style="list-style-type: none"> Low and high temperature service High temperature stability Good film strength Prevents stickiness and gumminess 	220	<ul style="list-style-type: none"> n/a
SYN-TEMP CHAIN OIL	Ester or polyol ester	<ul style="list-style-type: none"> Cotton gin spindle oil 	<ul style="list-style-type: none"> Long equipment life and high operating reliability 	32 to 320	
TECH SPRAY OIL	Mineral	<ul style="list-style-type: none"> Penetrating Lubricant and Cleaner primarily recommended for disassembling rusted bolts and nuts, removing bearings, couplings, pulleys, gears, etc. which have become corroded on their shafts 	<ul style="list-style-type: none"> High natural viscosity index Excellent thermal and chemical stability Bright and clear with low color Spindle moistening agent for cotton gins Reduces cotton cling and static electricity Non-staining 	10	<ul style="list-style-type: none"> n/a
PENETRATING OIL 1	Mineral	<ul style="list-style-type: none"> Penetrating Lubricant and Rust Preventative 	<ul style="list-style-type: none"> Displaces moisture Penetrates quickly Excellent rust buster Pleasant odor Safe for all metal surfaces Low surface tension Outperforms competitive products 	<4	<ul style="list-style-type: none"> Meets government specification VV-P-216 Available as Safeguard as well
PENKOTE	Mineral	<ul style="list-style-type: none"> Paper machine and antiwear circulating oil 	<ul style="list-style-type: none"> Displaces moisture Penetrates quickly Excellent rust buster Pleasant odor Safe for all metal surfaces Low surface tension Provides long term rust protection 	<4	<ul style="list-style-type: none"> n/a

Synthetic



SPECIALTIES

PRODUCT	BASE STOCK	APPLICATIONS	ADVANTAGES	ISO VG	SPECIFICATIONS
BRICK OIL	Mineral	<ul style="list-style-type: none"> • Light Duty Chain and Cutting Oil 	<ul style="list-style-type: none"> • Good penetration • Good lubricity • Light color 	22	<ul style="list-style-type: none"> • n/a
ISOVOLTINE 410	Mineral	<ul style="list-style-type: none"> • Type II Transformer Oil 	<ul style="list-style-type: none"> • Excellent oxidative stability • Very low pour point • Contains no PCBs • Excellent electrical insulating properties 	10 cSt @ 40°C	<ul style="list-style-type: none"> • ASTM D 3487 type II fluid • NEMA TR-P8-1975 • ISO 6743-Category N
WIRELINE LUBRICANT	Mineral	<ul style="list-style-type: none"> • Dressing for oil well wire cables • This product line is inhibited for both salt-water corrosion and hydrogen sulfide 	<ul style="list-style-type: none"> • Maximizes wire rope service life • Displaces moisture and forms a thick physical barrier film on the rope • Resists corrosion by hydrogen sulfide or salt water 	7000 to 13000 cSt @ 40°C	<ul style="list-style-type: none"> • n/a
DRIP OIL	Mineral	<ul style="list-style-type: none"> • Lubrication of vertical deep water well turbine pump bearings 	<ul style="list-style-type: none"> • Excellent low temperature fluidity • Inherent lubricity minimizes wear • Economical lubricant 	22	<ul style="list-style-type: none"> • n/a
WIRE ROPE LUBRICANT	Mineral	<ul style="list-style-type: none"> • Mineral oil-based lubricant for lubricating vertical deep water well turbine pump bearings 	<ul style="list-style-type: none"> • Maximizes wire rope service life • Displaces moisture • Easily applied • High load carrying ability • Penetrates to rope's core 	21 cSt @ 40°C	<ul style="list-style-type: none"> • None
SAW GUIDE OIL	Mineral	<ul style="list-style-type: none"> • Premium oil for gang saw guides 	<ul style="list-style-type: none"> • Excellent lubricity • Withstands heavy shock loads • Minimizes wear on guides • Prevents corrosion on metal saws • Displaces water from metal surfaces • Non-staining • Adhesive to reduce sling off from spinning saws 	100, 150	<p>RECOMMENDED FOR USE IN THE FOLLOWING SYSTEMS:</p> <ul style="list-style-type: none"> • CAE (Newnes, McGehee), Optimil, Salem, TMT, Ukiah and USNR (Kockums CanCar, Schuman)
SEAMER OIL	Mineral	<ul style="list-style-type: none"> • Angelus Special Can Closing Machine Lubricant 	<ul style="list-style-type: none"> • Anti-wear protection • Ashless dispersant • Rust and oxidation inhibited • Good film strength 	150, 220	<p>APPROVED BY:</p> <ul style="list-style-type: none"> • Angelus Sanitary Can Machine Company
VARNISH & SYSTEM CLEANER	Air Compressor Cleaner	<ul style="list-style-type: none"> • Designed to be added to oil or PAO based lubricants to loosen and remove carbon deposits and to suspend varnish while the system is used under normal operations 	<ul style="list-style-type: none"> • General purpose, high viscosity, high flash cleaner 	30 cSt @ 40°C	<ul style="list-style-type: none"> • n/a



Metalworking Fluids

Metalworking ranges from tempering to metal forming to metal removing fluids. The Total range includes oil-based and water-based lubricants.

Cutting and grinding are the most commonly encountered metal removing fluid operations. The machining fluids are diverse due to the wide range of possible machining operations and metals that are encountered. Common metals include ferrous (iron), aluminum, yellow metals and aerospace alloys. The cutting and grinding fluids are divided into oil-based (Scilia, Valona and Shincool) and water-based (Lactuca, Spirit and Vulsol) families.



NEAT CUTTING OILS: LIGHT DUTY MACHINING

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY @ 40 C	SPECIFICATIONS				
					FAT	S	P	CL	CU CORROSION
VALONA 120 S	All Metals	• General machining	• Non-staining, wide working range, outstanding oxidation resistance	25	■	■			1A
VALONA BIO 155 S	All Metals	• Stamping, sawing, tapping, drilling, milling	• 100% biodegradable	36	■				1A

NEAT CUTTING OILS: MODERATE DUTY MACHINING

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY @ 40 C	SPECIFICATIONS				
					FAT	S	P	CL	CU CORROSION
VALONA 2150 S	All Metals	• Machining/honing	• Very light viscosity, Super finishing applications	5	■	■	■		1A
VALONA 121 S	All Metals	• Dual purpose cutting oil	• Can be used in low pressure lube system where cross contamination is an issue	32	■	■			1A
VALONA 161 S	All Metals	• General purpose machining	• Recommended on carbon steel, aluminum, brass, and copper alloys	20	■	■	■		1A
VALONA BIO 2023 S	All Metals	• Stamping, sawing, tapping, drilling, milling	• 100% biodegradable, superior in high speed Swiss screw machines	38	■	■			1A
VALONA GR 2024 S	All Metals	• High pressure flute/ crush grinding oil	• Optimized for flute grinding applications	22	■		■		1A
VALONA GR 2025 S	All Metals	• High pressure flute/ crush grinding oil	• Optimized for flute grinding applications	32	■		■		1A
VALONA 10 S*	Ferrous	• Cutting oil for low carbon steels	• Very good EP properties due to active sulfur, increased tool life	31		■			4C
VALONA 40 S*	Ferrous	• Dark oil for tapping, thread rolling of low carbon and bearing steels	• Excellent lubricity properties	40	■	■			4C
VALONA 2125 S*	Ferrous	• Cutting oil on low carbon, hard, and very hard steels	• Low mist formation, excellent lubricity and EP properties	50	■	■			4C

*Active Sulfur

NEAT CUTTING OILS: HEAVY DUTY MACHINING

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY @ 40 C	SPECIFICATIONS				
					FAT	S	P	CL	CU CORROSION
VALONA 142 S*	Ferrous	<ul style="list-style-type: none"> Cutting, grinding, heavy duty machining 	<ul style="list-style-type: none"> Very good EP properties due to active sulfur and phosphorus 	36	■	■	■		4C
VALONA 670 S*	Ferrous	<ul style="list-style-type: none"> Broaching, threading, and turning carbon and stainless steel 	<ul style="list-style-type: none"> Primarily used on tapping carbon and stainless steel parts 	32	■	■			4C
VALONA 1006 S*	Ferrous	<ul style="list-style-type: none"> Machining and automatic screw machining operations 	<ul style="list-style-type: none"> Excellent lubricity properties, low mist oil formation, and very good EP 	18	■	■	■		4C
VALONA 1046 S*	Ferrous	<ul style="list-style-type: none"> Severe machining operations 	<ul style="list-style-type: none"> Wire drawing, screw cutting, threading, and grinding 	22	■	■			4C
VALONA AU 5510 AMS	All Metals	<ul style="list-style-type: none"> Grinding and honing 	<ul style="list-style-type: none"> Approved by KAPP Grinders 	12	■	■	■		1A-1B

*Active Sulfur

NEAT CUTTING OILS: MODERATE TO HEAVY DUTY MACHINING

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY @ 40 C	SPECIFICATIONS				
					FAT	S	P	CL	CU CORROSION
VALONA 2140 S	All Metals	<ul style="list-style-type: none"> Moderate duty machining 	<ul style="list-style-type: none"> Very good EP, increased tool life, and good surface finish 	32				■	1A
VALONA 2145 S	All Metals	<ul style="list-style-type: none"> Sawing, cutting, milling, drilling 	<ul style="list-style-type: none"> Wide range of metals, excellent lubricity properties, non-staining 	15	■			■	1A
VALONA 2021 S*	Ferrous	<ul style="list-style-type: none"> Cutting, grinding, gundrilling, and honing 	<ul style="list-style-type: none"> Excellent surface finish, anti-mist agent, excellent metal wetting ability 	15	■	■		■	4C
VALONA 2463 S*	Ferrous	<ul style="list-style-type: none"> Cutting, drawing, and forming 	<ul style="list-style-type: none"> Very good EP with the addition of chlorine and active sulfur Severe machining 	36	■	■		■	4C

*Active Sulfur

NEAT CUTTING OILS: MULTIPURPOSE CUTTING AND LUBRICATION OILS (TRI-PURPOSE SCREW MACHINE OIL)

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY @ 40 C	SPECIFICATIONS				
					FAT	S	P	CL	CU CORROSION
SCILIA	All Metal	<ul style="list-style-type: none"> • Tri-purpose cutting and way lube 	<ul style="list-style-type: none"> • Can be utilized in low pressure lube systems where cross contamination can be an issue • Used in cutting ferrous and non Ferrous metals • Used in lubrication of various machine parts: bearings, gears, and slideways 	15, 22, 32, 46, & 68	■	■	■		1A-1B
SCILIA EP	All Metal	<ul style="list-style-type: none"> • Tri-purpose cutting and way lube 	<ul style="list-style-type: none"> • Cutting oil for severe machining • Used in lubrication of various machine parts: bearings, gears, and slideways screw cutting on copper alloys, aluminum, bronze, tin, and high nickle steel 	15,32, & 46	■	■			1A-1B
SCILIA MS 7046	Ferrous	<ul style="list-style-type: none"> • Heavy duty cutting oil 	<ul style="list-style-type: none"> • All cutting operations on hard steel, titanium, and aluminum • Contains active sulfur for excellent EP properties • Severe machining: broaching, gear cutting, threading, sawing, and boring 	46	■	■	■		4C



WATER BASED CUTTING FLUIDS: SOLUBLE OIL (MACRO-EMULSIONS)

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	REFRACTIVE INDEX FACTOR	SPECIFICATIONS				
					FAT	S	P	CL	BIOCIDE
LACTUCA LT 3000 S	All Metals	<ul style="list-style-type: none"> General purpose soluble oil for light to moderate duty machining 	<ul style="list-style-type: none"> Recommended on machining carbon steels, aluminum and brass Non-staining LT 3000 B-S contains biocide 	1		■			■ (for LT 3000 B)
LACTUCA 5043 S	All Metal	<ul style="list-style-type: none"> Heavy duty soluble oil for all cutting and heavy machining operations 	<ul style="list-style-type: none"> Recommended on carbon, stainless, and nickle steels Works well on alumnium, copper, and brass alloy Operations include boring, milling, threading, deep hole drilling, and trepanning 	1		■			■
LACTUCA MS 5000	All Metals	<ul style="list-style-type: none"> General purpose soluble oil with high biocide content 	<ul style="list-style-type: none"> Bio-resistant Designed for machining copper alloys and screw cutting brasses Non-staining 	1					■
LACTUCA 5304 S	All Metals	<ul style="list-style-type: none"> Heavy duty soluble for most severe machining operations 	<ul style="list-style-type: none"> Chlorinated for excellent EP properties Extended tool life Recommended on carbon steel, stainless, high nickle steels, brass, and copper 	1			■		■
LACTUCA R 185 S	All Metals	<ul style="list-style-type: none"> Heavy duty soluble for all the most severe applications 	<ul style="list-style-type: none"> Premium product with latest technology in EP and anti-weld agents Bio-stable Highly recommended on carbon steel, stainless, high nickle steels, brass, aluminum, and copper 	1.18					
LACTUCA 4871 S	All Metals	<ul style="list-style-type: none"> Heavy duty soluble oil for severe drawing operations 	<ul style="list-style-type: none"> Chlorinated for excellent EP properties Drawing aluminum, brass, cuprous-nickle, and cold-rolled steel in multi-staged eyelet presses Transfer press forming of heavy stock steel 	1.3	■			■	■
LACTUCA 108 S	All Metals	<ul style="list-style-type: none"> General duty machining and cutting operations 	<ul style="list-style-type: none"> Will not stain copper and aluminum Stable in hard water General machining including sawing, turning, boring, deep hole drilling, and threading 	0.9					■
LACTUCA 116 S	Ferrous	<ul style="list-style-type: none"> Moderate duty machining and grinding 	<ul style="list-style-type: none"> Latest technology in synthetic and chlorinate EP additives Cutting of ferrous and ferrous alloy metals Extended tool life 	1			■		■



WATER BASED CUTTING FLUIDS: SEMISYNTHETIC (MICRO-EMULSIONS)

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	REFRACTIVE INDEX FACTOR	OIL CONTENT
SPIRIT 890 S	All Metals	<ul style="list-style-type: none"> Multi-purpose, light-moderate duty 	<ul style="list-style-type: none"> Long tool life Economical Non-foaming, non-staining, splits out tramp oil quickly 	2	11%
SPIRIT 895 S	All Metals	<ul style="list-style-type: none"> All machining and grinding operations 	<ul style="list-style-type: none"> Long tool life Superior finish Non-staining 	1.5	20%
SPIRIT 990 S	All Metals	<ul style="list-style-type: none"> Heavy duty machining, cutting, and grinding operations 	<ul style="list-style-type: none"> Premium, high performance, micro-emulsion Automotive and aerospace alloys Exceptional biological control 	1	40%
SPIRIT 995 S	All Metals	<ul style="list-style-type: none"> Heavy duty emulsifiable coolant for machining and grinding 	<ul style="list-style-type: none"> Used on automotive cast aluminum Contains sulfur and chlorine for excellent EP properties Exceptional biological control 	1	45%

WATER BASED CUTTING FLUIDS: FULL SYNTHETIC (OIL FREE)

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	REFRACTIVE INDEX FACTOR	SPECIFICATIONS				
					LUBRICITY	S	P	CL	CU CORROSION
VULSOL 2525 S	Ferrous	<ul style="list-style-type: none"> General machining and grinding of ferrous metals and alloys 	<ul style="list-style-type: none"> Aluminium grinding Glass grinding applications Resists microbiological growth Vulsol B 2525 is dyed blue 	3.9					
VULSOL 3500 S	Ferrous	<ul style="list-style-type: none"> Moderate machining and grinding 	<ul style="list-style-type: none"> Performs well in cutting and grinding aluminum Strong rust inhibitor package non-staining 	2.3			■		
VULSOL 4001 S	Ferrous	<ul style="list-style-type: none"> Drawing and Stamping 	<ul style="list-style-type: none"> Moderate duty Green solution Environmentally safe 	5.1	■		■		
VULSOL 5000 S	Ferrous/ NonFerrous	<ul style="list-style-type: none"> Machining and grinding 	<ul style="list-style-type: none"> Works well on mid-high alloy steels Used on aluminum and exotic aerospace alloys 	1.55					



METAL FORMING OILS: NEAT FORMING OILS

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY @ 40 C	SPECIFICATIONS				
					FAT	S	P	CL	CU CORROSION
MARTOL 513 S	Ferrous	<ul style="list-style-type: none"> Heavy-duty drawing of ferrous metals 	<ul style="list-style-type: none"> Premium petroleum oil for stamping and drawing carbon steels Contains vegetable oil for improved wetting ability Increased die life 	17.6	■			■	1A-1B
MARTOL 5053 S	Ferrous	<ul style="list-style-type: none"> Heavy duty deep drawing and stamping oil 	<ul style="list-style-type: none"> Increased die life Anti-weld agent Excellent lubricity properties 	55				■	1A
MARTOL 6300 S	Ferrous	<ul style="list-style-type: none"> Severe drawing and stamping 	<ul style="list-style-type: none"> Drawing ferrous and stainless steel alloys Excellent EP properties due to chlorine and sulfur Increased tool and die life 	60	■	■		■	1B
MARTOL 5014 S	Ferrous	<ul style="list-style-type: none"> Drawing and forming operations 	<ul style="list-style-type: none"> Non-staining High lubricity Excellent EP properties due to chlorine 	77	■			■	1A
MARTOL 4002 S	Non-Ferrous	<ul style="list-style-type: none"> Light to moderate duty stamping, punching, and drawing 	<ul style="list-style-type: none"> Primary used on copper and aluminum stamping, punching, and drawing Very good film strength for metal stamping and punching Excellent lubricity and metal wetting properties 	6.5	■	■	■		1A-1B
MARTOL 4562S	All Metals	<ul style="list-style-type: none"> Micro-Emulsion for light blanking and stamping 	<ul style="list-style-type: none"> High performance synthetic drawing fluid Improved surface finish, rust protection, die life, and sump life Environmentally safe 	NA-water based (refractive index = 2.9)	■		■		1A
MARTOL 46 S	All Metals	<ul style="list-style-type: none"> Light duty drawing and forming 	<ul style="list-style-type: none"> Excellent metal wetting ability Generally applied by flooding workpiece Increased tool and die life 	46	■				1A
MARTOL 235 S	Ferrous	<ul style="list-style-type: none"> All drawing and forming operations on ferrous and stainless alloys 	<ul style="list-style-type: none"> Synthetic ester cold heading oil Able to perform difficult drawing with reduced smoke Increased die life 	120 estimate (13 @ 100 C)	■	■			1A-1B



METAL FORMING OILS: COLD HEADING, EXTRUSION, AND COPPER TUBE DRAWING

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY @ 100 C	SPECIFICATIONS				
					FAT	S	P	CL	CU CORROSION
MARTOL 236 S	All Metals	<ul style="list-style-type: none"> Cold Heading, extrusion, and copper tube drawing 	<ul style="list-style-type: none"> Heavy duty cold heading Extrusion of aluminum and copper Exceptional protection without the use of sulfur, phosphorus, and chlorine 	140 (estimate 5000 @ 40 C)	■				1A-1B
MARTOL 5088	All Metals	<ul style="list-style-type: none"> Moderate duty copper tube drawing and stamping oil 	<ul style="list-style-type: none"> Vegetable ester Low smoke Exceptional protection without the use of sulfur, phosphorus, and chlorine 	60.4 (estimate 1200 @ 40 C)	■				1A-1B

METAL FORMING OILS: VANISHING OILS—FOR LIGHT TO MEDIUM DUTY STAMPING AND BLANKING

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	FLASH POINT (°F)	SPECIFICATIONS				
					FATTY ESTERS	S	P	CL	CU CORROSION
MARTOL EV 4706	Most Metals	<ul style="list-style-type: none"> Very light duty stamping No lubricity Not for carbon steel 	<ul style="list-style-type: none"> Fast drying, odorless and non-staining 	130					1A
MARTOL EV 4583	Most Metals	<ul style="list-style-type: none"> Light duty stamping with some lubricity 	<ul style="list-style-type: none"> Fast drying, odorless and non-staining 	130	■				1A
MARTOL EV 1982	Most Metals	<ul style="list-style-type: none"> Light duty stamping with lubricity 	<ul style="list-style-type: none"> Fast drying, odorless and non-staining 	130	■				1A
MARTOL EV 1924	Carbon Steel	<ul style="list-style-type: none"> Light duty stamping with phosphorus, no lubricity 	<ul style="list-style-type: none"> Fast drying, odorless and non-staining Suitable for all metals, especially carbon steels 	130			■		1A
MARTOL EV 4755	Stainless	<ul style="list-style-type: none"> Heavy duty with chlorine Best for stainless steel 	<ul style="list-style-type: none"> Fast drying, odorless and non-staining Suitable for all metals, especially stainless steel 	130	■			■	1A
MARTOL EV 7121	Carbon Steel	<ul style="list-style-type: none"> Heaviest duty without chlorine 	<ul style="list-style-type: none"> Fast drying, odorless and non-staining Suitable for all metals, especially carbon steels 	130	■		■		1A



QUENCHING OILS

PRODUCT	COLOR	QUENCH APPLICATION	GM NICKEL BALL QUENCH SPEED	VISCOSITY @ 40C	COMPOUNDING
DRASTA 100 S	Opaque	Very Fast	@ 77F 9-12	20	Heavy
DRASTA 101 S	Opaque	Very Fast	@ 77F 7-9	16	Heavy
DRASTA 105 S	Opaque	Fast	@ 77F 11-14	28	Heavy
DRASTA 107 S	Opaque	Fast	@ 77F 10-13	25	Heavy
DRASTA 117 S	Opaque	Fast	@ 175F 8-12	21	Medium
DRASTA 118 S	Amber	Slow Marquench	@ 250F 20-24	138	Medium
DRASTA 119 S	Amber	Medium	@ 77F 13-16	48	Heavy
DRASTA 121 S	Opaque	Fast	@ 175F 8-12	22	Heavy
DRASTA 126 S	Pale Yellow	Medium Marquench	@ 100F 15-17	63	Medium
DRASTA 6801 S	Opaque	Fast	@ 140F 8-12	15	Heavy



RUST PREVENTATIVE & PENETRATING OILS

PRODUCT	FILM TYPE	INDOOR PROTECTION RATING	APPLICATIONS, FEATURES & ADVANTAGES	VISCOSITY @ 40C	FLASH (°F)
OSYRIS 202 S	Oily	10-12 months	<ul style="list-style-type: none"> • Brush, dip or spray • Not suitable for outdoor storage • Calcium based 	15	310
OSYRIS 211 S	Oily	5-6 months	<ul style="list-style-type: none"> • General purpose rust preventative • Slushing oil for steel coils, sheets or bar • Water displacing • Brush, dip or spray • Contains UV fluorescent dye • Barium based 	28	405
OSYRIS 302	Grease	10-12 months	<ul style="list-style-type: none"> • Hot melt rust preventative 	7.1-10 cst	370
OSYRIS 313 S	Wax/Oily	5-6 months	<ul style="list-style-type: none"> • Water displacing • Brush, dip or spray • 20+ days humidity cabinet • Not suitable for outdoor storage 	3.5	170
OSYRIS 6404 S	Dry	5-6 months	<ul style="list-style-type: none"> • Water displacing • Brush, dip or spray • 55 days humidity cabinet • Not suitable for outdoor storage • Calcium based 	<3.0	127
OSYRIS 6407 S	Wax/Oily	10-12 months	<ul style="list-style-type: none"> • Rust preventative and penetrating oil • Water displacing with limited salt spray resistance (48-64 hrs) • 60 days humidity cabinet • Brush, dip or spray • Suitable for outdoor storage • Calcium based 	2.5	160
OSYRIS DWY 5500	Waxy	12 months	<ul style="list-style-type: none"> • Premium rust inhibitor • Meets MIL 16173 type 3 • Suitable for outdoor storage • Salt spray 60 days • Humidity cabinet 60 days • No barium 	4	145
PENKOTE	Oily	12 months	<ul style="list-style-type: none"> • Water displacing penetrating oil and rust preventive • 60 days for salt spray or humidity cabinet • Also available as an aerosol • Barium based 	<3	110
PENETRATING OIL 1	Oily	NA	<ul style="list-style-type: none"> • Penetrating oil and rust buster • Frees rusted parts • Meets government specification VV-P-216 • Also available as an aerosol • Ashless 	<3	100



Engine Oils

Through TOTAL's commitment to research, we offer an extensive mix of engine oils, coolants, transmission fluids, and automotive fluids for practically any vehicle sold in the world. From mining equipment to a fleet of buses, we have lubricants suitable for any type of engine – from diesel to CNG. TOTAL products are used worldwide in many applications and in any climate. TOTAL lubricants have been formulated using advanced technology engineered to exceed API and ACEA standards and most diesel engine lubrication requirements for on- and off-road equipment.

TOTAL also offers a wide range of organic, silicate and hybrid coolants that carry credentials from the world's leading OEMs. In addition, we use the latest in technology in order to satisfy the most demanding of applications in greases.



HEAVY DUTY DIESEL

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
RUBIA FLEET (monogrades)	Mineral	40	<ul style="list-style-type: none"> Off-road oil for engines or powershift transmissions 	<ul style="list-style-type: none"> API CF
RUBIA FLEET 900 NA	Synthetic Blend	15W-50	<ul style="list-style-type: none"> Uncommon grade for special circumstances (fishing fleets, etc) 	<ul style="list-style-type: none"> API CJ-4 (apx)
RUBIA FLEET HD 900	Mineral	10W-30	<ul style="list-style-type: none"> Engine oil meeting API CJ-4/SM, meets all current OEM requirements. TBN 9 	<ul style="list-style-type: none"> API CJ-4/SM
RUBIA G9	Mineral	40, 20W-40	<ul style="list-style-type: none"> Railroad engines requiring zinc free oil such as GE or GM EMD engines 	<ul style="list-style-type: none"> GM EMD Generation 5 GE 4 LL (Long Life)
RUBIA GAS 5M	Mineral	15W40	<ul style="list-style-type: none"> LPG/natural gas engine oil for mobile applications. Low ash (0.5%) 	<ul style="list-style-type: none"> Cummins CES 20074
RUBIA S	Mineral	10W, 30, 40, 50	<ul style="list-style-type: none"> 10 TBN oil for engines or powershift transmissions (30,40,50); Hydraulic oil (SAE 10W) 	<ul style="list-style-type: none"> API CF
RUBIA TIR 7400	Mineral	10W-30, 15W-40	<ul style="list-style-type: none"> Diesel engine oil for older trucks. TBN 11 	<ul style="list-style-type: none"> API CI-4/SL
RUBIA TIR 7800	Mineral	15W-40	<ul style="list-style-type: none"> Heavy duty diesel engine oils. TBN 11 	<ul style="list-style-type: none"> API CI-4 Plus/SL • ACEA E7 APPROVALS: Cummins CES 20078 Detroit Diesel 93K214 DDC series 2000 & 4000 Mack EON Premium Plus 03 MAN 3275 Mercedes Benz MB-Approval 228.3 Volvo VDS-3 Renault Trucks RLD-2 Meets Cat ECF-2 and Global DHD-1
RUBIA TIR 7900	Mineral	15W-40	<ul style="list-style-type: none"> Engine oil meeting API CJ-4/SM Approvals for current domestic and European OEMs. TBN 10 	<ul style="list-style-type: none"> API CJ-4/SM • ACEA E7/E9 APPROVALS: Cummins CES 20081 Detroit Diesel 93K218 DDC series 2000 & 4000 Mack EO-O Premium Plus 07 MAN 3275 Mercedes Benz-Approval 228.31 Renault trucks RLD-3 and Volvo VDS-4 Meets Cat ECF-3
RUBIA TIR 7900 FE	Synthetic Blend	10W-30	<ul style="list-style-type: none"> Low SAPs fuel economy oil meeting API CJ-4/SM Approvals for European and domestic OEMs. 10 TBN 	<ul style="list-style-type: none"> API CJ-4/SM • ACEA E7/E9 APPROVALS: Mack EO-O PP 07 Mercedes Benz MB-Approval 228.31 Renault Trucks RLD-3 Volvo VDS -4 Cummins CES 20081 Detroit Diesel 93K218 Meets Cat ECF-3
RUBIA TIR 7900 SB	Synthetic Blend	15W-40	<ul style="list-style-type: none"> Low SAPs fuel economy oil meeting API CJ-4/SM and all current domestic OEM requirements. 10 TBN 	<ul style="list-style-type: none"> API CJ-4/SM

HEAVY DUTY DIESEL CONTINUED

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
RUBIA TIR 7900 SYN	Synthetic	15W-40	<ul style="list-style-type: none"> • Low SAPs fuel economy oil meeting API CJ-4/SM and all current domestic OEM requirements. 10 TBN 	<ul style="list-style-type: none"> • API CJ-4/SM
RUBIA TIR 7900 SYN NA	Synthetic	5W-40	<ul style="list-style-type: none"> • Low SAPs fuel economy oil meeting API CJ-4/SM and all current domestic OEM requirements. 10 TBN 	<ul style="list-style-type: none"> • API CJ-4/SM
Rubia TIR 8600 FE	Synthetic	10W-30	<ul style="list-style-type: none"> • Fuel economy high ash European diesel engine oil and many OEM approvals. Especially Iveco • Extended drain capable. TBN 16 	<ul style="list-style-type: none"> • ACEA E4 APPROVALS: • Mack EO-N • MAN M-3277 • MB 228.5 • MTU Category 3 • Renault RLD-2 • Volvo VDS-3
RUBIA TIR 8600	Synthetic	10W-40	<ul style="list-style-type: none"> • European diesel engine oils with high ash and many OEM approvals • Also recommended for DAF and Iveco • Extended drain capable. TBN 16 	<ul style="list-style-type: none"> • API CJ-4/SM • ACEA E7/E9 APPROVALS: • Mack EO-N • MAN M-3277 • MB 228.5 • Renault RXD/RLD-2 • Scania LDF-3 • Volvo VDS-3 • Voith Class A
RUBIA TIR 9900 FE	Synthetic	5W-30	<ul style="list-style-type: none"> • Fuel economy low SAPs European/domestic diesel engine oil with many OEM approvals • Also recommended for DAF and Iveco. TBN 10 	<ul style="list-style-type: none"> • API CJ-4 • ACEA E6/E9 APPROVALS: • Cummins CES 20081 • Mack EO-O Premium Plus • MAN M 3477/ M3677 • MB 228.51 • Renault RLD-3 • Volvo VDS-4

Synthetic



Engine Oils



LIGHT DUTY DIESEL/GASOLINE

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
CLASSIC SN monogrades	Mineral	30, 40	• Lower cost engine oils, primarily for stationary rigs	• API SN
CLASSIC SN multigrades (w/o-GF-5)	Mineral	10W-40, 20W-50	• Domestic 20W-50 engine oil grade is primarily for police vehicles	• API SN
CLASSIC SN GF-5	Synthetic Blend	5W-20,5W-30, 10W-30	• Fuel economy grades engine oil meeting API SN GF-5	• API SN/GF-5
HIGH MILEAGE OIL	Mineral	5W-30, 10W-30	• Gasoline engine oil for older vehicles. Contains seal swell	• API SN
QUARTZ 9000 ENERGY	Synthetic	0W-30	• European gasoline/light duty diesel engine oil for VW and Mercedes Benz	• API SL • ACEA A3/B4 APPROVALS: • MB 229.5 • VW 502/505
QUARTZ 9000 ENERGY	Synthetic	5W-40	• European gasoline/light duty diesel meeting most German OEM specifications	• API SN • ACEA A3/B4 APPROVALS: • BMW LL-01 • MB 229.5 • VW 502/505 • Porsche A40
QUARTZ 9000 FUTURE	Synthetic	0W-20	• Full synthetic fuel economy oil meeting API SN GF-5	• API SN/GF-5
QUARTZ 9000 FUTURE FGC	Synthetic	5W-30	• Full synthetic fuel economy oil meeting API SN GF-5 with Dexos 1 approval	• API SN/GF-5 APPROVALS: • GM Dexos 1 MEETS: • GM 4718M, 6094M • Ford WSS-M2C-945A • Chrysler MS-1199
QUARTZ 9000 FUTURE XT	Synthetic	5W-20	• Full synthetic fuel economy oil meeting API SN GF-5	• API SN/GF-5 MEETS: • Ford WSS-M2C-946A • Chrysler MS12007
QUARTZ 9000 FUTURE XT	Synthetic	5W-30	• Full synthetic fuel economy oil meeting API SN GF-5	• API SN/GF-5 MEETS: • Ford WSS-M2C-945A • Chrysler MS 11999 • GM 6094M
QUARTZ 9000 FUTURE XT	Synthetic	10W-30	• Full synthetic fuel economy oil meeting API SN GF-5	• API SN/GF-5 • Chrysler MS 12015 • GM 6094M



Engine Oils

Synthetic

LIGHT DUTY DIESEL/GASOLINE CONTINUED

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
QUARTZ 9000 FUTURE VO 5W30	Synthetic	5W-30	<ul style="list-style-type: none"> Volvo or other vehicles requiring API SN and ACEA A5/B5 	<ul style="list-style-type: none"> API SN • ACEA A5/B5
QUARTZ INEO MC3	Synthetic	5W-30	<ul style="list-style-type: none"> European gasoline/light duty diesel meeting most German OEM specifications 	<ul style="list-style-type: none"> API SN • ACEA C3 • Dexos 2 APPROVALS: <ul style="list-style-type: none"> MB 229.51 BMW LL-04 VW 502/505.01 GM (Dexos 2)
QUARTZ INEO LONG LIFE	Synthetic	5W-30	<ul style="list-style-type: none"> Full synthetic fuel economy engine oil for US and Japanese vehicles 	<ul style="list-style-type: none"> ACEA C3 APPROVALS: <ul style="list-style-type: none"> BMW LL-04 MB 229.51 Porsche C30 VW 504/507
QUARTZ RACING	Synthetic	10W-50	<ul style="list-style-type: none"> Full synthetic oil for competitive sports, API SN 	<ul style="list-style-type: none"> API SN • ACEA A3/B4
QUARTZ RACING	Synthetic	10W-60	<ul style="list-style-type: none"> Synthetic oil for competitive sports (auto or motorcycle) or for high performance engines. TBN 5 	<ul style="list-style-type: none"> API SL Suitable for use in BMW M series
QUARTZ RACING	Mineral	20W-50	<ul style="list-style-type: none"> High zinc (1200 ppm), shear stable polymer for racing, older European vehicles (BMW, Audi, Porsche, VW). Not recommended for motorcycles 	<ul style="list-style-type: none"> API SJ

2 STROKE AND PLEASURE CRAFT

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
NEPTUNA 2T SUPER SPORT	Mineral	NA	<ul style="list-style-type: none"> Lubricant for 2-stroke water-cooled outboard gasoline engines 	<ul style="list-style-type: none"> NMMA TCW-3

 Synthetic

AUTOMATIC TRANSMISSION FLUID (ATF)*

PRODUCT	FLUID TYPE	VIS @ 100°C	APPLICATION	CREDENTIALS
DEXRON VI	Synthetic	6	<ul style="list-style-type: none"> Licensed ATF from GM, suitable for all GM vehicles 	<ul style="list-style-type: none"> GM License-Dexron VI California Compliant
FLUID NA H3	Mineral	7.2	<ul style="list-style-type: none"> Automatic transmission fluid for older vehicles specifying Dexron III/Mercon 	<ul style="list-style-type: none"> California Compliant
FLUIDMATIC CVT MV	Synthetic	7.6	<ul style="list-style-type: none"> CVT MV is red dyed CVT multi-vehicle Comment: About half of CVT fluids are dyed green 	<ul style="list-style-type: none"> California Compliant CVT multivehicle fluid
FLUIDMATIC MV	Synthetic	7.2	<ul style="list-style-type: none"> Multi vehicle ATF requiring higher viscosity 	<ul style="list-style-type: none"> California Compliant for high vis ATF multivehicle. Suitable for use TES 295
FLUIDMATIC MV LV	Synthetic	5.6	<ul style="list-style-type: none"> Low viscosity ATF-multi-vehicle (Dex VI, etc.) 	<ul style="list-style-type: none"> California Compliant for low vis ATF multi vehicle
FLUIDMATIC SYN NA	Synthetic	6.5	<ul style="list-style-type: none"> Multivehicle ATF suitable for most US and Asian vehicles 	<ul style="list-style-type: none"> Do not sell in California. Outside of California suitable for use for most vehicles.

* See individual data sheets for suitability for use guidelines.

TRANSMISSION & GEARS—AUTOMOTIVE

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
DYNATRANS AC	Mineral	10, 30, 50	<ul style="list-style-type: none"> Transmission Fluid for off-road equipment 	MEETS: <ul style="list-style-type: none"> Caterpillar TO-4 Komatsu Micro-Clutch
DYNATRANS DA	Mineral	80W-90	<ul style="list-style-type: none"> Transportation applications where a full treat of limited slip is needed to protect differentials against gear chattering 	<ul style="list-style-type: none"> API GL-5/MT-1 (limited slip) APPROVALS: <ul style="list-style-type: none"> ZF TE-ML 05C/12C/16E. MEETS: <ul style="list-style-type: none"> Mil 2105-D performance. Limited slip is often required in tractors and off-road equipment
GEARELF BLS 90	Mineral	90	<ul style="list-style-type: none"> Transportation applications where a full treat of limited slip is needed in SAE 90 to protect differentials against gear chattering Available in bulk only 	<ul style="list-style-type: none"> API GL-5 (limited slip) MEETS: <ul style="list-style-type: none"> Mil-L-2105D performance Mack GO-G and GO-H
GEAR OIL 910	Mineral	90	<ul style="list-style-type: none"> Monograde gear oil (bulk only) 	<ul style="list-style-type: none"> MT-1
SYNPRO TO 50	Synthetic	50	<ul style="list-style-type: none"> For out of warranty Eaton or Dana transmissions (not Eaton approved) Suggested drain interval 250,000 miles 	<ul style="list-style-type: none"> API GL-5/MT-1
SYNPRO GO	Synthetic	75W-90, 80W-140	<ul style="list-style-type: none"> For out of warranty rear end gear sets (not Eaton approved) Suggested drain interval 250,000 miles 	<ul style="list-style-type: none"> API GL-5/MT-1

Synthetic

TRANSMISSION & GEARS—AUTOMOTIVE CONTINUED

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
TRANSMISSION MDL NA	Mineral	80W-90, 85W-140	<ul style="list-style-type: none"> Mainstream thermally stable gear lube 	<ul style="list-style-type: none"> API GL-5/MT-1
TRANSMISSION XML	Mineral	80W-90, 85W-140	<ul style="list-style-type: none"> Thermally stable gear lube for factory fill Military spec quality level 	<ul style="list-style-type: none"> API GL-5/MT-1 J2360 approval (MIL PRF 2105-E)
TRANSMISSION SYN NA	Synthetic	75W-90	<ul style="list-style-type: none"> Synthetic transmission oil with key OEM approvals such as Eaton Extended drain and warranty coverage at Eaton and Meritor 	<ul style="list-style-type: none"> API GL-5/MT-1 <p>APPROVALS:</p> <ul style="list-style-type: none"> SHAES 256 Rev C and SAE J2360 (MIL PRF 2105-E) <p>MEETS:</p> <ul style="list-style-type: none"> Navistar TMS-6816 Mack GO-J+ Arvin Meritor 0-76-N
TRANSMISSION SYN NA	Synthetic	80W-140	<ul style="list-style-type: none"> Synthetic gear oils with key OEM approvals such as Eaton Extended drain (500,000 mile) and warranty coverage (750,000 miles) at Eaton and Meritor 	<ul style="list-style-type: none"> API GL-5/MT-1 <p>APPROVALS:</p> <ul style="list-style-type: none"> Eaton and SAE J 23360 (MIL PRF 2105E) <p>MEETS:</p> <ul style="list-style-type: none"> Navistar TMS-6816 Mack GO-J Meritor 0-80 Scania STO 1:0
TRANSMISSION SYN	Synthetic	50	<ul style="list-style-type: none"> Eaton approved synthetic transmission oil Extended drain (500,000 miles) and warranty coverage by Eaton and Meritor 	<ul style="list-style-type: none"> API MT-1 <p>APPROVALS:</p> <ul style="list-style-type: none"> Eaton PS 164 REV 7 <p>MEETS:</p> <ul style="list-style-type: none"> International/Navistar TMS-6816 Mack TO-A Plus Meritor 0-81.

Synthetic



TRACTOR FLUID*

PRODUCT	FLUID TYPE	SAE GRADES	APPLICATION	CREDENTIALS
DYNATRANS MP	Mineral	ISO 68 (apx SAE 10W-30)	<ul style="list-style-type: none"> Primary recommendation as a multi-purpose fluid suitable for most tractor applications. 	<ul style="list-style-type: none"> API GL-4 MEETS: <ul style="list-style-type: none"> JD-20 A, C specification and many others
DYNATRANS MP ARCTIC	Synthetic Blend	5W-20	<ul style="list-style-type: none"> Winter or All-Season Grade of multipurpose tractor fluid 	MEETS: <ul style="list-style-type: none"> JD-20 B, D Kubota UDT, CHN FNHA-2-C-200.00 Case MSA 1209 and 1210 and many others
DYNATRANS MP BLUE	Mineral	Apx SAE 10W-30	<ul style="list-style-type: none"> Dynatrans MP, dyed blue for easy identification 	<ul style="list-style-type: none"> API GL-4 MEETS: <ul style="list-style-type: none"> JD-20 A, C specification and many others
DYNATRANS MPV	Mineral	Apx SAE 30	<ul style="list-style-type: none"> Tractor fluid for agricultural tractor and off-road or handling equipment with OEM approvals Lubrication of transmissions, roque converters, hydrostatic transmission, hydraulics, power-assisted steering and power takeoffs with wet clutches Factory fill for some OEMs 	<ul style="list-style-type: none"> API GL-4 APPROVALS: <ul style="list-style-type: none"> CMS M1145/1143 Volvo CE WB 101 ZF TE-ML 03E/05F/06K/17E MEETS: <ul style="list-style-type: none"> OEM specs such as JD 20C, New Holland 410B, Case MS 1206/1207/109, and many more
OEM TRACTOR FLUID	Mineral	10W-30	<ul style="list-style-type: none"> Specially formulated tractor fluid for OEM factory fill or private branding 	
SJ 33**	Mineral	SAE 80W	<ul style="list-style-type: none"> Specially formulated for OEM factory fill where specific frictional requirements are needed for PTO, cluthches, wet brakes, etc. Recommended for Agricultural tractors, etc. 	<ul style="list-style-type: none"> API GL-4. Allison C-4, Cat TO-2 MEETS: <ul style="list-style-type: none"> Renault 180596-88.3 Massey Ferguson CMS M1141/1135 New Holland NH 420A Ford M2C 86B & C. Coffin Hoist

* See individual data sheets for suitability for use guidelines.

** Known as Dynatrans FR in Europe. Typical viscosity at 100°C is 11 cSt (SAE 30).



ANCILLARY PRODUCTS

PRODUCT	FLUID TYPE	40°C VIS, CST	APPLICATION	CREDENTIALS
HBF 4	Polyglycol		<ul style="list-style-type: none"> • Brakes calling for a slightly higher performance than DOT 3 	<ul style="list-style-type: none"> • FMVSS 116–DOT 4 • SAE J1704 • ISO 4925 Class 4
HD BRAKE FLUID (DOT 3) bulk only	Polyglycol		<ul style="list-style-type: none"> • Most common brake fluid for most automobiles 	<ul style="list-style-type: none"> • FMVSS 116–DOT 3 • SAE J1703 • ISO 4925
INJECTOR FLUID 26AW	Hydrocarbon	2.7	<ul style="list-style-type: none"> • Diesel injector calibration fluid 	<ul style="list-style-type: none"> • ISO 4113 • SAE J967
INJECTOR FLUID 72	Hydrocarbon	7	<ul style="list-style-type: none"> • Diesel injector calibration fluid 	<ul style="list-style-type: none"> • ISO 4113

Synthetic

ANTIFREEZE/COOLANTS*

PRODUCT	FLUID TYPE	TECHNOLOGY	APPLICATION	CREDENTIALS**
AEL COOLANT, 50/50	Water-EG	Organic	<ul style="list-style-type: none"> • Yellow hybrid organic coolant for light duty diesel/gasoline engines. • Excludes: nitrites, phosphates, borates, silicates and amines. • 150,000 mile drain. 	<ul style="list-style-type: none"> • ASTM D-3306, D-4985 and D-6210 • General Motors 6277M (Dexcool quality)
AEL COOLANT CONCENTRATE	Water-EG	Organic	<ul style="list-style-type: none"> • Yellow hybrid organic coolant for light duty diesel/gasoline engines. • 150,000 mile drain. 	<ul style="list-style-type: none"> • ASTM D-3306, D-4985 and D-6210 • General Motors 6277M (Dexcool quality)
CLASSIC COOLANT 50/50	Water-EG	Silicate	<ul style="list-style-type: none"> • Traditional green low silicate-based coolant. • Check every 50,000 miles. 	<ul style="list-style-type: none"> • ASTM D 3306, ASTM D4985, • TMC RP 302B, SAE J 1034, SAE J1941 • Chrysler MS 7170 • Cummins 90T8-4 • Detroit Diesel 7SE-298 • Ford ESE M97B44-A • John Deere H5, Mack
CLASSIC COOLANT CONCENTRATE	Water-EG	Silicate	<ul style="list-style-type: none"> • Traditional green low silicate-based coolant. • Check every 50,000 miles. 	<ul style="list-style-type: none"> • ASTM D 3306, ASTM D4985, • TMC RP 302B, SAE J 1034, SAE J1941 • Chrysler MS 7170 • Cummins 90T8-4 • Detroit Diesel 7SE-298 • Ford ESE M97B44-A, • John Deere H5 • Mack
FLEET COOLANT 50/50	Water-EG	Hybrid	<ul style="list-style-type: none"> • Green coolant for both gasoline and heavy duty diesel engines. • Contains 1200 ppm nitrite. • No silicates, phosphates, nitrates or amines. • Check at 50,000 miles. 	<ul style="list-style-type: none"> • ASTM D 3306, D4656, D-4985, D-5345 and D-6210. • SAE J 1034, J 814, J1034, J1038 and J1941. • See data sheet for additional standards

*For specific suitable for use information go to individual data sheets.

**ASTM D-3306 is automotive, ASTM D 4985 is low silicate. ASTM D 6210 is precharged HD diesel.



ANTIFREEZE/COOLANTS* CONTINUED

PRODUCT	FLUID TYPE	TECHNOLOGY	APPLICATION	CREDENTIALS**
HDLL COOLANT 50/50	Water-EG	Organic	<ul style="list-style-type: none"> Red, long life organic coolant suitable for most heavy duty diesel engines Precharged. No phosphates, silicates or amines. It does contain nitrites and molybdates. (nitrated organic acid technology=NOAT). Extended service interval 600,000 miles 	<ul style="list-style-type: none"> ASTM D-3306, ASTM D-6210 SAE J 1034, SAE J 1941; TMC RP-302 A&B, RP 302-C, RP 329, RP-338A Caterpillar EC-1 Detroit Diesel DDC 93K217
HDLL COOLANT CONCENTRATE	Water-EG	Organic	<ul style="list-style-type: none"> Red, long life organic coolant suitable for most heavy duty diesel engines Precharged. No phosphates, silicates or amines. It does contain nitrites and molybdates. (nitrated organic acid technology=NOAT). Extended service interval 600,000 miles 	<ul style="list-style-type: none"> ASTM D-3306, ASTM D-6210 SAE J 1034, SAE J 1941 TMC RP-302 A&B, RP 303-C, RP 329 RP-338A Caterpillar EC-1 Detroit Diesel DDC 93K217
HD NF COOLANT 50/50	Water-EG	Organic	<ul style="list-style-type: none"> Blue European style coolant OEMs include Audi/Seat/Skoda, Bombardier, Chrysler, MB, DDC, Deutz, Ford, GM, John Deere, MAN, Navistar, Volvo, VW, Waukesha, etc. Free of borates, nitrites, phosphates and silicates. Drain interval 600,000 miles. 	<ul style="list-style-type: none"> ASTM D-3306, ASTM D6210 SAE J1034 and J 1941 TMC RP (302 A&B, 303C, 329 and 338A) Cat EC-1, DDC 93K217 and many other credentials

*For specific suitable for use information go to individual data sheets.

**ASTM D-3306 is automotive, ASTM D 4985 is low silicate. ASTM D 6210 is precharged HD diesel.

AUTOMOTIVE GREASES

PRODUCT	SOAP/FLUID TYPE	NLGI GRADES	APPLICATION	OPERATING RANGE	CREDENTIALS	BASE OIL, CST @ 40°C
MULTIS EP NA	Lithium 12 Soap, Mineral Oil	2	<ul style="list-style-type: none"> Smooth, multipurpose grease Amber color. Chassis grease 	-20° to 150°C	<ul style="list-style-type: none"> NLGI LB ISO 6743-9 L-XBEHB 2 DIN 51502: KP2K-20 	150
MULTIS COMPLEX EP NA	Lithium Complex Soap, Mineral Oil	2	<ul style="list-style-type: none"> Multipurpose, slightly tacky grease, Chassis and wheelbearings. Blue. 	-20° to 160°C	<ul style="list-style-type: none"> NLGI GC-LB ISO 6743-9 L-XBGHB-2 and L-XBGHB-1 DIN 51502: KP2P-20 and KP1P-30 	150
MULTIS COMPLEX ET	Lithium Complex Soap, Mineral Oil	2	<ul style="list-style-type: none"> Multipurpose, extra tacky grease, chassis and wheelbearings. Red 	-20° to 160°C	<ul style="list-style-type: none"> NLGI GC-LB ISO 6743-9 L-XBGHB-2 DIN 51502: KP2P-20 	160
GRAISSE N 3924	Lithium/ Calcium	2	<ul style="list-style-type: none"> Steering rack grease for factory fill. Pale brown 	-40° to 120°C	<ul style="list-style-type: none"> PSA approval X71 3130 L-XCEA2 DIN 51502: K2K-40 	56