

Texaco product guide

Europe & Eurasia, 2010

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	Density	Flash point	Pour	Kine	matic	Performance Claims /	
Product name	at 15°C		point,		y, mm ² /s	Approvals / Recommendations	Description
	kg/l	min, °C	max, °C	at 40°C	at 100°C	Recommendations	
Fully-synthetic Engine Oils	1	<u> </u>			<u> </u>		
HAVOLINE® SYNTHETIC 506.01 SAE 0W-30	0.856	218	-45	53.0	9.4	ACEA A5/B5 Approvals: VW 506.01/503.00/506.00 (LongLife Service QG-1)	Fully-synthetic engine oil for petrol and diesel passenger car and van engines, turbo-charged or naturally aspirated. Helps protection from sludge formation, enables easy start-up under cold climate conditions, improves protection against deteriorating engine performance and engine failure. It is recommended for high output engines, especially for VW/Audi vehicles requiring VW 506.01 approved product.
HAVOLINE® SYNTHETIC SAE 5W-40	0.857	232	-33	88.0	14.6	ACEA A3/B3 API SL/CF Approvals: MercedesBenz 229.1	Fully-synthetic lubricant that gives protection for cars whose drivers demand high engine performance day after day. Well suited for modern passenger cars, petrol or diesel fueled, including fast hatchbacks, luxury saloons or high performance sports cars. It helps protect engine during start-up, improves savings on fuel costs, reduces maintenance and repair costs.

	Density	Flash point	Pour	Kine	matic	Performance Claims /	
Product name	at 15°C	(COC),	point,		/, mm²/s	Approvals /	Description
	kg/l	min, °C	max, °C	at 40°C	at 100°C	Recommendations	
Synthetic Engine Oils	_						
HAVOLINE® ULTRA SAE 5W-40	0.857	232	-33	88.0	14.6	ACEA A3/B4 API SL/CF Approvals: VW 502.00/505.00 MercedesBenz 229.3 Porsche Opel/GM-LL-B-025	High quality engine oil for modern passenger cars with demanding engine performance. It can be used in both petrol and diesel fueled cars in various climate conditions. It helps wear protection and cleanliness of the engine in the extended drain period. It has very good low-temperature performance, reduces exhaust emissions and has long-life performance, thus reducing maintenance time and costs.
HAVOLINE® ULTRA S SAE 5W-30 SAE 5W-40	0.850 0.850	232 232	-42 -42	73.0 84.0	12.3 14.0	ACEA A3/B4 (incl. A3/B3) ACEA C3 API SM/CF Approvals: BMW Longlife-04 (in EU) MercedesBenz 229.31/229.51 VW 502.00/505.00 VW 505.01 (5W-40) Porsche (5W-40)	This top tier engine oil has been designed for prolonging the life of car emission reduction systems and maintaining their efficiency without compromising engine durability. It is suitable for both petrol and diesel engines, but it is especially recommended as an extended drain oil for use in BMW and Daimler passenger car diesel engines that are equiped with particulate filters.

Product name	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
HAVOLINE® ULTRA V SAE 5W-30	0.849	230	-42	71.1	11.5	Approvals: VW 504.00/507.00 (LongLife Service QG-1) Porsche Cayenne V6	A high performance engine oil specially designed for the use in VW/ Audi gasoline and diesel engines with prolonged maintenance intervals (known as Longlife Service QG1), including direct injected gasoline engines (FSI) and diesel engines with unit injectors and particulate filters (DPF). It can not be used in R5 and V10 direct injected diesel engines with unit injectors with or without DPF. For these engines only VW 506.01 oils should be used.
HAVOLINE® ULTRA BM SAE 5W-30	0.859	232	-42	69.4	12.2	ACEA A3/B4 Approvals: VW 502.00/505.00 MercedesBenz 229.5 BMW LongLife Oil-01	Formulated from synthetic base oils, and advanced high performance additive components, to provide improved durability for long life performance, wear protection, cold temperature performance and reduced emissions. It is approved by the BMW specification "longlife oil-01".
HAVOLINE® ULTRA G LONGLIFE SAE 5W-30	0.855	226	-39	70.0	11.7	ACEA A3/B3 Approvals: Opel/GM-LL-A-025 Opel/GM-LL-B-025	Formulated from synthetic base oils and advanced high performance additive components, to provide improved durability for long life performance, wear protection, cold temperature performance and reduced emissions.

Product name	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
HAVOLINE® ENERGY EF SAE 5W-30	0.848	226	-36	55.0	10.0	ACEA A5/B5 ACEA C1	It is recommended for use as a catalyst compatible oil in high performance gasoline and diesel passenger cars and light duty diesel vans equipped with DPF and TWC which require low friction, low viscosity, low SAPS oils.
HAVOLINE® ENERGY MS SAE 5W-30	0.851	224	-36	55.0	10.0	ACEA A5/B5 ACEA C2	It is recommended for use as a catalyst compatible oil in high performance gasoline and diesel passenger cars and light duty diesel vans equipped with DPF and TWC which require low friction, low viscosity, mid SAPS oils.
HAVOLINE® ENERGY SAE 5W-30	0.850	230	-45	57.0	10.3	ACEA A1/B1 A3/B3 (performance level) API SL/Energy Conserving Approvals: Ford WSS M2C913-B Jaguar WSS M2C913-B	An engine oil based on synthetic base oils and advanced additive package, to provide improved durability for long life performance, wear protection, cold temperature performance, reduced emissions and fuel efficiency. Gives greater engine power, helps protection of the engine in demanding conditions.

	-	Flash point		_	matic	Performance Claims /	
Product name	at 15°C kg/l	(COC), min, °C	point, max, °C		y, mm²/s at 100°C	Approvals / Recommendations	Description
Part-synthetic Engine Oils	Ng/1	111111, 0	тах, о	at 40 C	at 100 C	resemmentation	
HAVOLINE® EXTRA SAE 10W-40	0.881	224	-33	100.5	14.6	ACEA A3/B4 (incl. A3/B3) API SL/CF Approvals: VW 505.00 MeredesBenz 229.1	Multigrade engine oil for passenger cars. It has good thermal stability and very good viscosity temperature properties. It shows low oil consumption tendency and it is particularly recommended for modern high output engines, including those incorporating up to date leaner burn gasoline engine technology and those equipped with catalytic exhaust systems.
HAVOLINE® DIESEL EXTRA SAE 10W-40	0.881	224	-33	100.5	14.6	ACEA A3/B4 (incl. A3/B3) API SL/CF Approvals: VW 505.00 MeredesBenz 229.1	Multigrade engine oil for diesel passenger cars. It has good thermal stability and very good viscosity - temperature properties. It shows low oil consumption tendency and it is particularly recommended for modern high output engines, including those equipped with catalytic exhaust systems.
Mineral Engine Oils							
HAVOLINE® PREMIUM SAE 15W-40 SAE 20W-50	0.883 0.889	228 234	-27 -27	112.2 160.9	14.5 18.1	ACEA A2 and B2 API SL/CF Performance level: VW 505.00 MercedesBenz 229.1	Mineral oil based lubricant, which gives a good level of engine protection for both petrol and diesel fueled cars. It helps engine retain its efficiency during its lifetime. Engine sludge and varnish deposits are guarded against and friction and wear are reduced.

	Density	Flash point	Pour	Kine	matic	Performance Claims /	
Product	at 15°C		point,		y, mm²/s	Approvals /	Description
	kg/l	min, °C	typ. ⁰C	at 40°C	at 100°C	Recommendations	
Synthetic Engine Oils							
URSA [®] ULTRA X SAE 10W-40	0.860	238	-33	87.8	13.5	ACEA E7/E6/E4 Approvals: Daimler MB 228.51 Volvo VDS-3 Renault RLD-2, RXD MAN M3477 MTU Type 3.1 (pending) Performance level: DAF HP-2 (see manual on E4 xW-40 oils) MAN M3277 CRT	Ultra High Performance Diesel engine oil (UHPD) with low sulphated ash, phosphorus and sulphur content (low SAPS). It contains synthetic base stock and is designed for the use in the latest Euro 4 and Euro 5 diesel engines. Designed to give good protection of after treatment systems (DPF/CRT) and therefore applicable for buses equipped with such systems. This oil is also suitable for engines using SCR technology (Selective Catalytic Reduction).
URSA [®] PREMIUM FE SAE 5W-30	0.859	230	-48	74.7	12.0	ACEA E4 API CF Approvals: Daimler MB 228.5 Volvo VDS-2 MAN M3277 Renault Trucks RXD DAF HP-1/HP-2 Performance level: MTU Type 3	A synthetic engine oil for heavy duty diesel engines in trucks, buses and off-road machinery. It is recommended for use in engines where manufacturers do not give formal approvals, but instead issue lists of performance requirements for lubricants in use. This oil has very good performance and prolonged durability in service and improves fuel efficiency of the engine.

Product Semi-synthetic Engine Oils	at 15°C kg/l		Pour point, typ. °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
URSA® TDX SAE 10W-40	0.867	226	-39	89.6	13.5	ACEA E7/E4 API CI-4 Approvals: Daimler MB 228.5 Deutz DQC III MAN M3277 Renault RLD-2, RXD Scania LDF-2 Volvo VDS-3 Performance level: Cummins CES 20071/20072/20077/20078 DDC/MTU Type 3 Mack EO-M Plus	A part of the Ursa SHPD family of the so called "High Sulphated Ash" products. It was designed to conform to the updated ACEA specifications and to meet more challenging OEM requirements. Its robust formulation is designed for longer drain intervals and therefore it represents a well suited product for international transport trucks that aren't fitted with DPFs or CRT. Due to its high TBN it's also applicable for regions where higher sulphur diesel fuels are still used, without compromising the drain interval.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, typ. °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
URSA® SUPER TDS SAE 10W-40	0.873	224	-33	99.7	14.5	ACEA E7 API CI-4/CF Approvals: Scania LDF-2 Daimler MB 228.3 Volvo VDS-3 MAN M3275 Renault RLD-2 MTU Type 2 Performance level: Cummins CES 20078 Mack EO-M Plus	A part of a Super High Performance family of heavy duty diesel engine oils, designed to conform to the updated ACEA, API and OEM performance standards for heavy duty diesel engines. Ursa Super TDS is unique in Texaco product range in the sense that it has the latest Scania approval for long drain applications for the Scania Euro 4 engines but doesn't require a complete synthetic and expensive base oil composition to achieve this performance. The formulation is a very cost effective LDF-2 approved product.
URSA® ULTRA SAE 10W-30	0.870	204	-30	80.0	12.0	ACEA E7 ACEA E9 API CJ-4 API SM Approvals: MAN M3275 MB 228.31 Cummins 20081 Renault RLD-3 Volvo VDS-4	High performance, low emissions heavy duty diesel engine lubricants based upon the Chevron ISOSYN® Technology. Formulated to meet current industry and engine manufacturers' performance requirements. These oils contain advanced additive technology to provide excellent engine protection for diesel engines meeting Euro IV and Euro V emission requirements and for 2007 EPA exhaust particulate emission standards for on highway diesel trucks using Ultra Low Sulphur Diesel (ULSD).

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, typ. °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
URSA [®] SUPER TD SAE 10W-40	0.874	215	-36	93.7	13.5	ACEA E7/E5, A3/B4 (A3/B3) API CF/CI-4/SL Global DHD-1 Approvals: Daimler MB 228.3/229.1 Volvo VDS-3 Renault RLD-2 MAN M3275 Cummins CES 20076/77/78 Caterpillar ECF-1a Performance level: Mack EO-M Plus	A part of a Super High Performance family of heavy duty diesel engine oils, designed to conform to the updated ACEA, API and OEM performance standards for heavy duty diesel engines. Ursa Super TD is recommended for use in heavy duty truck and bus operations, and/or when extended oil drain intervals for both the naturally aspirated and turbocharged engines are required. For the correct oil drain intervals, user is advised to consult the relevant engine manual or the manufacturer. Also recommended for DAF, Iveco, Scania (E7)
Non-conventional Engine C	Dils						
URSA® ULTRA SAE 15W-40	0.881	215	-30	117.0	15.4	ACEA E7 ACEA E9 API CJ-4 API SM Approvals: MAN M3275 Cummins 20081 Renault RLD-3 Volvo VDS-4 Mack EO-O Premium Plus 2007	High performance, low emissions heavy duty diesel engine lubricants based upon the Chevron ISOSYN® Technology. Formulated to meet current industry and engine manufacturers' performance requirements. These oils contain advanced additive technology to provide engine protection for diesel engines meeting Euro IV and Euro V emission requirements and for 2007 EPA exhaust particulate emission standards for on highway diesel trucks using Ultra Low Sulphur Diesel (ULSD).

	-	Flash point			matic	Performance Claims /	
Product	at 15°C	(COC),	point,		y, mm²/s	Approvals /	Description
	kg/l	min, °C	typ. °C	at 40°C	at 100°C	Recommendations	
Mineral Engine Oils							
URSA[®] SUPER TD SAE 15W-40 SAE 20W-50	0.889 0.894	220 238	-39 -36	108.4 165.3	14.5 18.5	ACEA E7/E5/E3/B3/A3/A2 API CF/CI-4/SL (15W-40) API CH-4 (20W-50) Global DHD-1 Approvals: Daimler MB 228.3/229.1 Volvo VDS-3 Renault RLD-2 MAN M3275 (15W-40) Caterpillar ECF-1a Performance level: Mack EO-M Plus Cummins CES 20076/77/78	A part of a Super High Performance family of heavy duty diesel engine oils, designed to conform to the updated ACEA, API and OEM performance standards for heavy duty diesel engines. Ursa Super TD is recommended for use in heavy duty truck and bus operations, and/or when extended oil drain intervals for both the naturally aspirated and turbocharged engines are required. For the correct oil drain intervals, user is advised to consult the relevar engine manual or the manufacturer. Also recommended for DAF, Iveco, Scania (E7).
URSA[®] SUPER LA SAE 15W-40 SAE 20W-50	0.884 0.888	226 234	-27 -24	108.6 165.7	14.5 18.8	ACEA E2/B2/A2 API CG-4/SJ (licensable) Approvals: Volvo VDS (15W-40) MAN 271 MTU Type 1 Performance level: Daimler MB 228.1/229.1 Mack EO-L (15W-40)	This product is available in multigrades and monogrades, is part of a Texaco's heavy-duty diesel engine oil family. Well suited for use in mixed fleet Diesel and Petrol operations, wher it facilitates rationalisation of lubricants, enables cleaner, smoother-running engines and helps equipment to have a longer working life. Also recommended for Caterpillar, Allison C-4, Iveco, Scania, DAF, Cummins, Renault.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, typ. °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
URSA® SUPER LA MONOGRADES SAE 10W SAE 20W-20 SAE 30 SAE 40 SAE 50	0.880 0.884 0.887 0.892 0.897	218 232 230 236 254	-30 -30 -27 -24 -30	40.6 60.5 83.1 137.2 202.2	6.7 8.5 10.8 14.5 18.8	ACEA E2 API CF/SJ Approvals: MAN 270 MTU Type 1 (SAE 30 & 40) Performance level: Daimler MB 228.0	Monograde oils for heavy duty diesel engines. They are primarily intended for use in turbocharged and naturally aspirated diesel engines in various types of service in heavyduty trucking, construction, mining and farm equipment. Suitable for use when temperature variations are not likely to be present, or when oil is changed in short periods. It can also be used in retarders. Also recommended for RVI, DAF, Iveco, Scania, Caterpillar.
URSA® EXTRA DUTY SAE 40 Railroad Diesel Engine Oils	0.886	238	-27	97.1	11.4	API CF/CF-2 Recommended for: Detroit Diesel 2 stroke engines	Ursa Extra Duty is a low ash monograde engine oil specifically formulated for heavy duty two-stroke diesel engines (Detroit Diesel) operating in both on- and off-highway service.
DIESEL ENGINE OIL (DEO) 13 MG SAE 20W-40	0.896	248	-12	135.3	15.2	LMOA 4 Long Life GE EMD	Diesel Engine Oil 13MG 20W-40 is an SAE 20W-40, 13BN, LMOA 4 Long Life Zn-free railroad engine oil. It is recommended for use in naturally aspirated and turbocharged railroad engines which require Zn-free oils. The sulphur in the fuel should not exceed 1.0%wt.

SMALL ENGINE LUBRICANTS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosit	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
Oils for 2-Cycle Land Appli		111111, C	max, C	at 40 C	jai 100 Cj	recommendations	
MOTEX® 2T-SX	0.888	80*	-42	51.0	8.6	Performance claims: API TC JASO FC/FD ISO-L-EGD Husqvarna HVA 346& 372 Rotax Snowmobile 253 Kart Racing	Fully synthetic oil for two stroke engines. Provides reduced smoke emission of the engine. Although it has been specially developed for motorbike racing, the product can also be successfully used in kart racing, chainsaws and snowmobiles. It has been developed for a 50:1 fuel to oil ratio. However, the recommendations of the OEM should be adhered to if another dosage is required.
MOTEX® 2T-X	0.868	100	-18	53.4	8.3	Performance claims: API TC JASO FC/FD TISI ISO-L-EGD (for chainsaws)	Part synthetic two-stroke engine oil formulated with advanced low ash additive package. Very good miscibility with gasoline is obtained by the addition of a high flash point diluent. It has been developed for a 50:1 fuel to oil ratio, but the recommendations of the OEM should be adhered to if another dosage is required. Also, it can be used for chainsaws and snowmobiles under relatively mild temperature conditions.

SMALL ENGINE LUBRICANTS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
MOTEX [®] 2T	0.878	154	-6	78.0	10.1	Performance claims: API TC JASO FB	Two-cycle engine oil for land applications, which gives good performance for low to medium severity air cooled 2T type applications such as in mopeds, light motorcycles and lawn mowers. It is developed for a 50:1 fuel to oil ratio. However the recommendations from the OEM should be followed if different dosage is required. Not recommended for chainsaw or other severe duty applications.
2-Cycle Outboard Engine C	Dils						
MOTEX [®] S OUTBOARD	0.946	112	-45	55.5	9.1	Approvals: NMMA TC-W3 [®] Performance claims: NMMA TC-W II/TC-W	Biodegradable, solvent free engine oil for water- cooled two cycle engines formulated for use at all engine manufacturers fuel to oil ratios. It is perfectly miscible with current types of gasoline and does not show gel formation tendency.
MOTEX [®] 2T OUTBOARD	0.873	134	-39	54.0	8.7	Approvals: NMMA TC-W3 [®] Performnace claims: NMMA TC-W II/TC-W	A two-stroke outboard engine oil formulated with high quality mineral base oils, recommended for water-cooled 2T engines. It is formulated for use at all engine manufacturers fuel to oil ratios and provides protection against spark plug fouling and surface ignition, as well as protection against rust, wear, corrosion, exhaust port plugging, ring sticking and varnish formation.

SMALL ENGINE LUBRICANTS

Product	Density at 15°C kg/l		Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
4-Cycle Mobile Engine Oils							
						ACEA A3	Partially synthetic multigrade engine oil designed for use in four stroke motorcycles in
MOTEX [®] 4T-X SAE 10W-40	0.881	224	-27	100.5	14.6	Performance claims: API SL JASO MA	both normal operating conditions and in racing applications. Also recommended for the lubrication of portable power equipment such as generators, pumps, mowers, etc.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
GEARTEX [®] EP-A SAE 80W SAE 75W-90 SAE 85W-90	0.889 0.882 0.895	220 190 230	-36 -45 -24	82.0 77.3 178.0	9.5 14.3 16.5	Approvals: ZF TE-ML 02A/08/16A/17A/19A MB 235.1 MAN 341 Type E1/Type Z1 Performance claims: API GL-4	Mineral-based EP gear oil recommended for automotive gearboxes, steering boxes, transaxles and hypoid rear axles, offering the following advantages: oxidation stability and protection of gear components, low pour point, foam resistance, protection against rust, compatibility with elastomers.
GEARTEX [®] EP-B SAE 85W-90	0.900	220	-33	175.0	16.8	Approvals: ZF TE-ML 05A/07A/08/ 16C/17B/19B/21A MB 235.0 MAN 342 Type M1 Volvo 97310-90 Performance claims: API GL-5	Mineral-based EP gear oil recommended for automotive gearboxes, steering boxes, transaxles and hypoid rear axles, offering the following advantages: oxidation stability and protection of gear components, low pour point, foam resistance, protection against rust, compatibility with elastomers.
GEARTEX [®] EP-C SAE 80W-90 SAE 85W-140	0.899 0.907	212 214	-33 -18	135.0 360.0	14.0 26.1	Approvals: ZF TE-ML 5A/07A/08/16D/ 17B/21A Performance claims: API GL-5 MIL-L-2105C/D	Mineral-based EP gear oil recommended for automotive gearboxes, steering boxes, transaxles and hypoid rear axles, offering the following advantages: oxidation stability and protection of gear components, low pour point, foam resistance, protection against rust, compatibility with elastomers.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
GEARTEX [®] LS SAE 85W-90 SAE 85W-140	0.902 0.907	210 214	-30 -15	177.0 325.0	16.8 25.0	Approvals: ZF TE-ML 05C/12C/16E/21C Performance claims: API GL-5	Mineral-based EP gear oil designed for use in limited slip differentials. It contains a special friction modifier additive in order to give the specific frictional properties which are essential for the correct operation of this type of equipment. It will help prevent noise and vibrations from developing.
GEARTEX [®] S4 SAE 75W-90	0.853	182	-45	75.0	14.1	Performance claims: API GL-4 VW 501.50	Fully synthetic multigrade EP gear oil designed for year round automotive uses. It will assist improved shiftability both in high speed, high temperature driving and in low temperature starting conditions. Additionally, it can help improve fuel economy of the vehicle.
MULTIGEAR® SAE 80W-90 SAE 80W-140	0.898 0.905	210 204	-30 -36	133.0 216.0	14.0 25.0	Approvals: ZF TE-ML 02B/05A/07A/08/12E/ 16B/16D/17B/19B/21A MAN 341 Type E2/ 3343 Type M Performance claims: API GL-4/GL-5/MT-1 DAF NATO O-226/O-228 Scania STO 1:0	Total drive line oil suitable for use in both automotive and heavy duty equipment. Helps protection of gear equipment under heavy loads and surface stress, i.e. spalling, pitting, scoring and wear. It may therefore be used in both manual transmissions and final drive units, offering the advantage of product rationalisation.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
MULTIGEAR® S SAE 75W-90	0.860	202	-54	98	14.7	Approvals: ZF TE-ML 02B/05B/07A/08/ 12B/16F/17B/19C/21B MAN 341 Type E3/ 3343 Type S Performance claims: API GL-4/GL-5/MT-1 DAF MB 235.8 NATO O-226 Scania STO 1:0	Fully synthetic total drive line oil suitable for use in both automotive and heavy duty equipment. It may be used in both manual transmissions and final drive units, offering the advantage of product rationalisation. The high quality shear-stable VI Improver additives have been used, ensuring that the oil's viscosity will not drop during its service lifetime. This also means that the oil can retain required viscosity for effective lubrication even at high operating temperatures.
MULTIGEAR® S SAE 75W-140	0.867	185	-46	185	26.0	Approvals: Ford M2C-192A Scania STO 1:0 U.S. Military MIL-PRF-2105E Performance claims: API GL-5/MT-1	Fully synthetic axle fluid suitable for use in both automotive and heavy duty equipment. The high quality shear-stable VI Improver additives have been used, ensuring that the oil's viscosity should not drop during its service lifetime. This also means that the oil can retain required viscosity for effective lubrication even at high operating temperatures.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
MULTIGEAR [®] MTF HD	0.847	244	-54	54.1	9.2	Approvals: Eaton transmissions (synthetic, 500.000 km / 3 years) Volvo 97305 Performance claims: API GL-4 MAN 341 Type E4/Z4 MB 235.4/235.11 Volvo 97307 ZF TE-ML 02 (400.000 km/3 years)	Manual transmission fluid suitable for extended drain in heavy duty synchronized manual truck transmissions. It is formulated with fully synthetic base oils and a specially balanced additive combination. In addition to its formal OEM approvals, field trial data have been amassed demonstrating its capability for extended drain in numerous truck applications. Field trial vehicles include those manufactured by MAN, Mercedes, Scania and Volvo; transmissions include those manufactured by the truck constructors themselves and by ZF, including AS Tronic models and models fitted with intarders.
MULTIGEAR[®] MTF SAE 75W-80W	0.876	228	-48	62.0	9.2	Approvals: MAN 341 Type E3/Type Z3 DAF ZF TE-ML 02D Eaton transmissions (semi-synthetic, 300.000 km / 2 years) Performance claims: API GL-4 MB 235.4 Volvo 97305	Manual transmission fluid formulated with advanced additive technology and a combination of synthetic PAO and high quality mineral base oils. Developed in response to higher power output requirements in manual transmissions of commercial vehicles, it outperforms conventional automotive MTFs - the product is capable of withstanding prolonged periods of service at temperatures as high as 150°C. It can be used in transmissions fitted with Intarders (Scania) and Retarders (Voith).

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
MULTIGEAR® RN PREMIUM SAE 75W-80	0.859	214	-45	47.3	8.9	Performance claims: Renault (Type P) API GL-4	Manual transmission fluid formulated with advanced additive technology and high quality hydrocracked base oils. It provides the right answer to synchroniser shift problems in passenger car manual transmissions and transaxles. Its technology has been carefully selected to provide improved frictional characteristics and fluidity performance, helping a smooth gear change feeling even in extreme conditions such as low temperature, humidity or risk of water ingress.
MULTIGEAR® 75W-90 R	0.876	200	-48	81.0	14.4	Approvals: Land Rover: axles Opel/Vauxhall Frontera: front axle Performance claims: API GL-4/GL-5/MT-1	Total drive line oil suitable for use in both API GL-4 and API GL-5 applications. It is blended from a high performance additive package and a combination of synthetic poly alpha olefin and high quality solvent refined paraffinic base oils. Product can be applied in those applications where an SAE 75W-90, 80W-90, 85W-90 or 90 oil is currently recommended.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
TEXACO [®] MTF 94	0.886	208	-45	53.0	10.5	Approvals: Rover Land Rover Mini Honda Performance claims: API GL-4 ZEXEL	Specific manual transmission fluid, formulated with dedicated additive technology and non-conventional base stocks, developed in response to higher power output requirements in manual transmissions and subsequent concerns about gear pitting resistance and bearing durability. It can be used over longer drain periods compared to commonly available manual transmission fluids.

AUTOMATIC TRANSMISSION FLUIDS

	Density	Flash point	Pour	Kine	matic	Performance Claims /	
Product	at 15°C	(COC),	point,	viscosity	y, mm²/s	Approvals /	Description
	kg/l	min, °C	max, °C	at 40°C	at 100°C	Recommendations	
					1		
TEXAMATIC [®] 7045E Dexron III	0.862	200	-51	33.8	7.4	Approvals: GM Dexron IIIG (obsolete specification) MAN 339 Type V1 Voith H55.6335.3x ZF TE-ML 04D/17C ZF Lenksysteme TE-ML 09 Performance claims: Aishin Warner Allison C-4 Ford MERCON	A red dyed fluid which provides excellent performance in automatic transmission systems in passenger cars, trucks, buses and off-highway heavy duty diesel machines. Its high viscosity index permits use over a wide temperature range by providing very good low temperature fluidity and, at the same time, retaining the desired viscosity at high temperature conditions. It is suitable for many applications, not only as an ATF but also as a multigrade hydraulic fluid (approximately ISO 32 grade).
SYNTHETIC ATF HEAVY DUTY	0.854	228	-45	35.3	7.4	Caterpillar TO-2 Approvals: Allison C-4 / TES-389 Ford MERCON V GM Dexron IIIH (obsolete specification) MAN 339 Type V1/V2/Z2 Voith H55.6335.3x/ H55.6336.3x Volvo 97341 ZF TE-ML 04D/14B/16L Performance claims: Allison TES 295 MB 236.91 ZF TE-ML 14C	Specially engineered oil for heavy duty automatic truck and bus transmissions operating in extended drain service. It is also approved as Ford MERCON® V and the former General Motors DEXRON®-IIIH Revision fliud, making it suitable for use in a wide range of passenger car automatic transmissions (except for 6-speed applications). It is also suitable for use in industrial and mobile hydraulic systems.

AUTOMATIC TRANSMISSION FLUIDS

	Density	Flash point	Pour	Kine	matic	Performance Claims /	
Product	at 15°C	(COC),	point,	viscosity	y, mm²/s	Approvals /	Description
	kg/l	min, °C	max, °C	at 40°C	at 100°C	Recommendations	
	_				1		
TEXAMATIC [®] 4291	0.870	202	-48	37.7	7.3	Approvals: GM Dexron IID (obsolete specification) Allison C-4 Voith H55.6335.3x ZF TE-ML 03D/04D/11A/14A/17C ZF Lenksysteme TE-ML 09 MB 236.5/236.7 MAN 339 Type V1/Z1 Performance claims: Caterpillar TO-2	Product suitable for many applications, not only as an automatic transmission fluid but also as a power steering fluid and as a multigrade hydraulic fluid (approximating to an ISO 46 grade). Applications include automatic transmissions and power steering systems in passenger cars and trucks, off-highway agricultural and mining equipment, mobile hydraulic systems and industrial applications.
TEXAMATIC® 9226	0.868	193	-45	35.8	7.4	Approvals: GM Dexron IID (obsolete specificiation) Voith H55.6335.3x ZF TE-ML 04D/11A/17C ZF Lenksysteme TE-ML 09	Product suitable for many applications, not only as an automatic transmission fluid but also as a power steering fluid and as a multigrade hydraulic fluid (approximating to an ISO 32 grade). Applications include automatic transmissions and power steering systems in passenger cars and trucks, off-highway agricultural and mining equipment, mobile hydraulic systems and industrial applications.

AUTOMATIC TRANSMISSION FLUIDS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	Kinematic viscosity, mm²/s at 40°C at 100°C		Performance Claims / Approvals / Recommendations	Description
TEXAMATIC® 9330	0.869	206	-48	35.9	7.3	Approvals: Ford ESW-M2C 33-F Ford ESP-M2C 33-G	An automatic transmission fluid for applications requiring a Ford Type F or Type G product. It is also suitable for use in other transmissions, hydraulic systems, power steering units and torque converters requiring this type of product. This product is formulated without the use of friction modifiers and because of that, it should not be used in applications which require a Ford MERCON® product.
TEXAMATIC [®] 1585	0.881	208	-51	38.0	7.3	Approvals: MercedesBenz 236.2 Performance claims: GM Type A Suffix A MAN 339 Type A (obsolete specification)	Mineral-based ATF. It helps ease gear selection, protection of gear components, and has low foaming tendency. Although designed as ATF, the actual applications include manual transmission in cars and 4x4 vehicles as well as steering systems in commercial vehicles.

POWER STEERING FLUIDS

Product	Density at 15°C kg/l		Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
HAVOLINE® CHL 8642	0.823	156	-54	19.2	6.3	Approvals: MAN M 3289 Performance claims: VW TL521.46 MB 345.0	Advanced generation high performance power steering fluid designed to be used in hydraulic and electro-hydraulic units. It is formulated with synthetic base oils along with carefully selected additives to provide good low temperature performance. Additionally it contains a specific additive component which has been shown to reduce steering pump noise (squeal).
HAVOLINE [®] PSF 9109	0.848	158	-51	20.0	6.0		Advanced generation high performance power steering fluid designed to be used in hydraulic and electro-hydraulic units. It is formulated with specially selected base oils along with carefully selected additives to provide good low temperature performance. Additionally it contains a specific additive component which has been shown to reduce steering pump noise (squeal).

POWER STEERING FLUIDS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
COLD CLIMATE POWER STEERING FLUID	0.860	215	-51	26.5	6.4	Approvals: ZF TE-ML 09 Landrover: All vehicles, for Power Steering and Active Cornering Enhancement (ACE) systems Performance claims: General Motors GM 9985835 Chrysler MS 5931 Saab	It is blended from a mixture of synthetic and mineral base oils along with carefully selected additives to provide good performance in power steering systems. Additionally it contains a specific additive component which has been shown to reduce steering pump noise (squeal). This product is specially formulated to meet the requirements of GM (Delphi Saginaw) and Chrysler specifications covering fluids for use in automotive power steering systems.
PS FLUID 11872	0.876	215	-45	37.0	7.3	<i>Approvals:</i> General Motors GM 9985010 Chrysler MS 5931	This product is blended from high quality solvent refined paraffinic base oils along with carefully selected additives to provide good performance in power steering systems. Additionally it contains a specific additive component which has been shown to reduce steering pump noise (squeal). PSF 11872 is specially formulated to meet the requirements of GM (Delphi Saginaw) and Chrysler specifications covering fluids for use in automotive power steering systems.

BRAKE FLUIDS

Product	Density at 20°C kg/l		Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
BRAKE FLUID DOT 4	1.040 to 1.065	> 120		1000 to 1400	2.0 to 2.5	Performance claims: FMVSS No.116: DOT 4/DOT 3 SAE J 1703 ISO 4925	Meets standards for clutch and brake fluids as demanded by leading OEMs. Intended for use in all applications demanding non-mineral based brake fluids. It is formulated from polyalkene glycol ethers with high molecule mass and poly-alkylene glycol ether borates with advanced corrosion and oxidation inhibitors.

COOLANTS / ANTIFREEZE & CORROSION INHIBITOR

Product	Density at 20°C kg/l	Boiling point, °C	Freezing protection °C	Color	Nitrate, silicate, phosphate, borate, amine	Performance Claims / Approvals / Recommendations	Description				
Coolants / Antifreeze											
HAVOLINE® XLC Concentrate 50% dilution 40% dilution	1.113 1.068 1.056	180 108	- -40 -27	orange	nil	Approved by number of OEMs. For a detailed overview please contact our Area Sales Manager.	Silicate-free additive system provides protection against winter freezing and reduction of the risk of boiling over in summer. This product can be used for at least 650,000 km (cca. 8,000 hours) in truck & bus applications or 250,000 km (cca. 2,000 hours) for passenger cars or 32,000 hours (or 6 years) for stationary engines. It offers long-term protection from corrosion to a wide range of components and metals.				
HAVOLINE® AFC Concentrate	1.125	174		un- coloured	contains silicate and borate	Approved by number of OEMs. For a detailed overview please contact our Area Sales Manager.	Mixed with the appropriate amount of water, it is used as a cooling and heat transferring fluid in combustion engines. It may be used with confidence in engines manufactured from cast iron, aluminium or combinations of the two metals, and in cooling systems made of aluminium or copper alloys.				
TEXACO® ANTIFREEZE AND SUMMER COOLANT Concentrate	1.111	163		un- coloured	nil	Approvals: British Standard BS6580:1992	Formulated with carboxylate technology, combined with carefully selected inhibitors and a highly effective bitterant, this product has reduced toxicity when compared with traditional antifreeze/coolants. It delivers cost-efficient, reliable and robust year-round system protection.				

COOLANTS / ANTIFREEZE & CORROSION INHIBITOR

Product	Density at 20°C kg/l	pH value	Cloud point, °C	Color	Nitrate, silicate, phosphate, borate, amine	Performance Claims / Approvals / Recommendations	Description
Corrosion Inhibitor							
HAVOLINE® XLI Concentrate 5% dilution	1.058	9.4 8.1	-15	un- coloured	nil	Approved by number of OEMs. For a detailed overview please contact our Area Sales Manager.	A low-toxic, environmentally friendly inhibitor concentrate. Mixed with the appropriate amount of water, it is recommended as a coolant, flushing fluid or hot test fluid for engine blocks and all cooling systems. During extensive field testing, the synergistic combination of mono- and di-carboxylic acid has proven to provide an excellent protection for at least 32,000 hours in marine and stationary applications. The product is compatible with glycol-based engine coolants. Depending on the actual application the dosage may vary from 5-10% but a minimum of 5 vol.% of Havoline XLI in water should be used.

HAVOLINE® PERFORMANCE PLUS PRODUCTS

	1	Flash point			matic	Performance Claims /	
Product name	at 15°C		point,	viscosity, mm ² /s		Approvals /	Description
	kg/l	min, °C	max, °C	at 40°C	at 100°C	Recommendations	
Fuel System Treatments							
HAVOLINE [®] PERFORMANCE PLUS (HPP) GASOLINE FUEL SYSTEM CLEANER	0.882	79		6.9			A powerful conditioning additive designed to remove deposits from injectors, valves and combustion chambers. It is designed to be a conditioning treat every 8,000 to 16,000 kilometers. It provides up to 93% clean up of inlet valves, it is not harmful to catalysts, it promotes corrosion protection of fuel system and quickly restores engine power and lost acceleration. It is supplied in 350 ml bottles. One bottle treats 70 to 80 litres of fuel.
HAVOLINE® PERFORMANCE PLUS (HPP) DIESEL FUEL SYSTEM CLEANER	0.849	70		2.1			Specifically designed to provide cleaning of the whole diesel fuel system, with the added advantage of a Cetane improver which improves diesel fuel combustion. It improves lubrication when used with low sulfur diesel fuels helping prevention of wear and premature failure of injector pumps and injectors. It reduces diesel knock, noise and smoothes idling, reduces emissions and helps fuel economy. It is supplied in 350 ml bottles. One bottle treats 50 to 70 litres of fuel.

HAVOLINE® PERFORMANCE PLUS PRODUCTS

Product name	Density at 15°C kg/l	Flash point (PM), min, °C	Pour point, max, °C	Kinen viscosity at 40°C	, mm²/s	Performance Claims / Approvals / Recommendations	Description
Crank Case Treatment							
HAVOLINE® PERFORMANCE PLUS (HPP) CRANK CASE CLEANER	0.814	min 63					HPP Crank Case Cleaner helps to dissolve deposits left in the crankcases of petrol and diesel engines from previous oil fills. It can restore compression by dissolving the deposits from piston rings and hydraulic lifters. HPP Crank Case Cleaner is used just prior to draining the old oil. It will help to clean oil paths and improve oil flow to critical engine components.

UNIVERSAL OILS FOR OFF-ROAD MACHINERY

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	Viscosit	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
Super Universal Tractor Oi	ls	- T			1		
SUPER UNIVERSAL TRACTOR OIL EXTRA SAE 10W-30	0.883	216	-42	66.0	10.3	Approvals: Massey Ferguson M1144/1145 Performance claims: John Deere JDM J27 Ford ESN-M2C159-B1 API CE/CF-4/SF CCMC D4/G2 MB 228.1 MIL-L-2104C/D MIL-L-46152B/21260C API GL-4 Allison C-3/C-4 Caterpillar TO-2 ZF TE-ML 06C/07B DIN 51524/2 HV AFNOR NF E 48602 HV Vickers Denison HF-0	A top tier product designed to meet the requirements of current "Super Tractor Oil Universal" (STOU) specifications. This means that a single lubricant can be used in all of the tractor's oil systems. This allows for a reduction in the number of products which must be stocked, and minimizes the possibility of filling the oil system with the wrong product. It provides protection for petrol and diesel powered engines, wear protection in gearboxes and axles, smooth clutch operation, quiet, trouble-free operation of wet brakes, power delivery in hydraulic systems. It may also be used in applications calling for a "Universal Tractor Transmission Oil" (UTTO), although in these cases Textran® TDH Premium is recommended for better performance.

UNIVERSAL OILS FOR OFF-ROAD MACHINERY

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	Viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
SUPER UNIVERSAL TRACTOR OIL SAE 15W-30	0.885	218	-33	78.0	10.7	Performance claims: Ford ESN-M2C159-A/B Massey Ferguson M1139 API CD/SE API GL-4 DD Allison C-3 Caterpillar TO-2 Vickers Denison HF-0	A product designed to meet the requirements of "Super Tractor Oil Universal" (STOU) specifications. It provides protection for petrol and diesel powered engines, wear protection in gearboxes and axles, smooth clutch operation, quiet, trouble-free operation of wet brakes, power delivery in hydraulic systems.
Transmission/Hydraulic Oi	ls						
TEXTRAN [®] TDH PREMIUM	0.884	224	-45	58.0	9.4	Approvals: Volvo 97303 (WB101) ZF TE-ML-03E/05F/06K Massey Ferguson M1143/M1145 Performance claims: JI Case MS 1206/1207/1209 John Deere JD 20C Ford New Holland: M2C 134 A/B/C/D M2C 86 B/C Massey Ferguson: M1135/M1141 Caterpillar TO-2 DD Allison C-3 API GL-4	A transmission/hydraulic oil blended from solvent refined base oils and special additives to provide high viscosity index, resistance to corrosion and oxidation, anti-wear, EP and foaming properties. Intended for use in transmissions, rear axles and hydraulic systems on equipment where a "Universal Tractor Transmission Oil" (UTTO) is required. It is recommended for the advanced designs of tractors and off-road equipment and approved by Volvo, ZF and Massey Ferguson.

UNIVERSAL OILS FOR OFF-ROAD MACHINERY

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	Viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
TEXTRAN® V32	0.873	220	-39	32.0	5.5	Approvals: VoithTurbo Spec.: 3625-006072 (Type S/TP/DTP/VIR) VoithTurbo Spec.: 3625-006073 (Type R)	A transmission/hydraulic oil specifically developed for the lubrication of heavily loaded torque converters and turbo transmissions. It is suitable for use in Voith turbo couplings in industrial, marine and railway equipment; Voith torque converter transmissions in shunting locomotives and heavy duty construction equipment; Voith hydrodynamic brakes in railway and heavy duty automotive equipment. It may also be used in moderately loaded gearboxes and hydraulic systems.
Hydraulic/Differential Oils		I			1		T
TEXTRAN [®] HD SAE 10W SAE 30 SAE 50	0.884 0.895 0.904	218 248 258	-42 -30 -27	41 89 230	6.5 10.6 19.6	Approvals: Komatsu KES 07.868.1 Performance claims: Caterpillar TO-4 Allison C-4	Product designed to meet the friction, wear and elastomer compatibility requirements of the Caterpillar TO-4 Transmission/Drive Train specification. It helps smooth transmission power transfer under high horsepower conditions and maintains performance under the severe operating conditions of heavy duty equipment. It is formulated without VI improvers, and hence there will be no viscosity drop in service due to shearing effects.

GAS ENGINE OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
GEOTEX [®] HD SAE 40	0.891	240	-30	124.0	13.0	Performance claims: API CD Dorman Diesels Fincantieri Diesels GE Jenbacher MWM-Deutz Perkins Engines Ruston Diesels Mirrlees MAN Waukesha	This oil has been formulated to lubricate high output gas engines, irrespective of the type of gas being utilised. Also for dual-fuel or sparkignited gas engines in stationary applications. It has a relatively high alkalinity reserve, measured by TBN, for combating acidic combustion products derived from trace gas contaminants. It is recommended for use in naturally aspirated or turbocharged gas engines in stationary application, and running on biogas or landfill gas. For gas engines equipped with exhaust catalyst, it is recommended that the user consults the catalyst manufacturers for their limit on Zinc, Phosphorus and Sulphated Ash level.
CHEVRON HDAX [®] LOW ASH GAS ENGINE OIL SAE 40	0.877	230	-18	124.0	13.5	Performance claims: API CD/CF Caterpillar Delaval Deutz GE Jenbacher Superior Wartsila Waukesha Worthington	This is a bright stock-free, low ash, dispersant/detergent type engine oil based on Chevron ISOSYN® Technology. Recommended for four-stroke and selected two-stroke stationary engines fueled by natural or synthetic gas and gas from digester and landfill sources.

GAS ENGINE OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
GEOTEX [®] LA SAE 40	0.892	242	-24	126.0	13.2	Performance claims: API CD GE Jenbacher MAN B&W Deutz MDE MTU Type 1 Perkins Rols Royce Bergen Wartsila Dresser-Rand (categ. III) Caterpillar Waukesha Mirrlees	A low ash, low TBN, mineral gas engine oil specifically developed for lubricating naturally aspirated and turbocharged gas engines in stationary applications and using natural gas as fuel. It contains low levels of Zinc and Phosphorus elements, meeting the requirement of many catalyst manufacturers.
GEOTEX® PX SAE 40	0.849	230	-33	88.8	14.0	Performance claims: MWM-Deutz Ulstein Bergen Caterpillar Dorman Diesels GE Jenbacher MAN Mirrlees Perkins Engines Pielstick Ruston Diesels Wartsila NSD Waukesha	A low ash, low TBN, gas engine oil specifically developed for use in high performance stationary gas engines running on natural gas or other non-corrosive gases. It offers long drain intervals. Its low Zinc and Phosphorus content makes it suitable for use in gas engines using exhaust catalyst.

GAS ENGINE OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
GEOTEX[®] LF SAE 40	0.889	242	-24	139.0	14.0	Performance claims: API CD Dorman Diesels GE Jenbacher MAN MDE Mirrlees Deutz Perkins Engines Ruston Diesels Waukesha Fincantieri Diesels	A mineral gas engine oil specifically developed for use in high performance stationary gas engines running on landfill, sewage or natural gas with high sulphur content. It has a relatively high alkalinity reserve, measured by TBN, for combating acidic combustion products derived from trace gas contaminants. It is compatible with NSCR type of exhaust catalysts. For other types of exhaust catalyst, it is recommended that the user consults the catalyst manufacturers for their limit on Zinc, Phosphorus and Sulphated Ash level.
GEOTEX[®] MULTIGRADE SAE 15W-40	0.883	218	-30	100.0	13.8	Performance claims: API SG/CE MAN 3271-1 DAF HP-Gas Leyland MB 226.9 MIL-L-2104E/46152D Allison C-3 Caterpillar TO-2 Mack EO-K/2 Cummins NTC 400 Iveco Volvo	A shear-stable multigrade gas engine oil. It is developed for lubricating heavy duty sparkignited gas engines running on natural gas, compressed natural gas (CNG) or liquefied petroleum gas (LPG). It is primarily recommended for automotive gas engines used in transportation such as bus and truck applications, also in diesel engines running on low sulphur fuel or petrol. It provides piston deposit control, wear protection, helps extended oil drain intervals and reduces oil consumption. When used in engines fitted with exhaust catalyst, the user is advised to consult the catalyst manufacturer for their recommendations on zinc, phosphorus and ash limits.

Product	Density at 15°C	Flash point (COC),	Pour point,	_	matic /, mm²/s	Performance Claims / Approvals /	Description
Floduct	kg/l	min, °C	max, °C		at 100°C	Recommendations	Description
Marine Engine Oils							
URSA [®] MARINE SAE 15W-40 SAE 40	0.884 0.891	226 236	-39 -27	101.0 128.9	13.8 14.0	Performance claims: ACEA E2-96 API CG-4 Daimler MB 228.1/229.1 MAN 271 Volvo VDS Recommended for many OEMs. For details, please contact our Area Sales Manager.	Heavy duty diesel crankcase lubricants, meeting the performance requirements for marine diesel engines. It is recommended for the lubrication of turbocharged and naturally aspirated trunk piston marine diesels running on gasoil. It is particularly intended for coastal motorships, fishing vessels, harbor tugboats, pilot boats and other inland waterways vessels. It can be applied to propulsion and auxiliary diesels.
DELO [®] 1000 MARINE SAE 30 SAE 40	0.887 0.900	240 240	-18 -18	102.5 135.0	11.7 14.2	Performance claims: API CF	A high performance medium alkaline diesel engine oil for medium and high-speed trunk piston diesel engines. It is developed for use in a wide variety of trunk piston engines, including the high output medium speed engines using high sulphur gas oil or Marine Diesel Oil with a maximum sulphur level of 1.5%. It is blended from high quality base oils and selected additives which protect the oil from oxidation and provide very good detergent/dispersant properties.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
DELO [®] SHP SAE 40	0.890	240	-15	135.0	14.0	Approvals: MB 228.2 MTU Type 2 Performance claims: ACEA E2-96 API CF, CD/SF Deutz-MWM D5 Komatsu Mack EO-K/2 Perkins (Shrewbury)	Delo SHP is a heavy duty diesel crankcase lubricant, meeting the performance requirements for Super High Performance Diesel engine oil (SHPD). Delo SHP is manufactured from high quality base oils and compounded with additives to provide lubrication of heavy duty (turbocharged) high-speed diesel engines under severe operating conditions. It contains detergent/dispersant, anti-oxidation and anti-wear additives.
TARO [®] 20 DP SAE 30 SAE 40	0.910 0.910	240 240	-18 -18	94.0 135.0	11.3 14.0	Meets the requirements of a number of marine diesel engine manufacturers. For details, please contact our Area Sales Manager.	Medium alkaline diesel engine oil for medium and high speed trunk piston diesel engines burning low sulphur heavy fuels (with a sulphur content up to 2%) or marine diesel oil (MDO). It has very good viscosity control when used in severe high temperature service and its alkalinity retention characteristics reduce corrosive wear over long periods of operation.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
TARO [®] 30 DP SAE 30 SAE 40	0.910 0.910	240 240	-18 -18	94.0 135.0	11.0 14.0	Meets the requirements of a number of marine diesel engine manufacturers. For details, please contact our Area Sales Manager.	High alkaline diesel engine oil for medium and high speed trunk piston diesel engines burning residual fuels with a maximum sulphur level of 4%. It is blended from high quality base oils and additives that help protection against ring sticking, piston deposits, and wear under severe operating conditions.
TARO [®] 40 XL SAE 40	0.910	240	-18	135.0	14.5	Performance claims: API CF Approved by a number of marine diesel engine manufacturers. For details, please contact our Area Sales Manager.	It is a high alkaline diesel engine oil for medium speed trunk piston diesel engines burning residual fuels with a maximum sulphur level of 4.5%. The dedicated detergent and dispersant additive system helps piston cleanliness as well as very good heavy fuel related contaminants handling characteristics. This results in reduction of both "hot" (piston lands and grooves, piston undercrown, purifier preheaters) and "cold" (crankcase, cambox, rocker area, fuel pumps, purifier bowl) deposits.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
TARO [®] 50 XL SAE 40	0.920	240	-15	135.0	14.0	Performance claims: API CF Approved by a number of marine diesel engine manufacturers. For details, please contact our Area Sales Manager.	It is a high alkaline diesel engine oil for medium speed trunk piston diesel engines burning residual fuels with a maximum sulphur level of 4.5%. The dedicated detergent and dispersant additive system helps piston cleanliness as well as very good heavy fuel related contaminants handling characteristics. This results in reduction of both "hot" (piston lands and grooves, piston undercrown, purifier preheaters) and "cold" (crankcase, cambox, rocker area, fuel pumps, purifier bowl) deposits.
TARO [®] SPECIAL HT 70 SAE 50	0.930	270	-15	230.0	20.0	<i>Approvals:</i> MAN B&W Wartsila Mitsubishi Heavy Industries	This lubricant is particularly intended for cylinder lubrication of crosshead engines, operating at very high mechanical and thermal loads reaching up to 160 bar in maximum cylinder pressure and up to 270°C in liner temperature at top dead center. It is blended from highly refined, paraffinic base oils and carefully selected additives to help ring and liner wear protection and piston cleanliness.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C		matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
TARO® SPECIAL HT LS 40 SAE 50	0.920	270	-15	230.0	20.0	Approvals: MAN Diesel Wärtsilä	This is a 40 BN SAE 50 cylinder lubricant intended for lubrication of cylinders of slow-speed engines using low sulphur fuel (<1.5 to 2 wt% sulphur) and operating at very high mechanical and thermal loads reaching up to 160 bar in maximum cylinder pressure and up to 270°C in liner temperature at top dead center.
VERITAS® 800 MARINE SAE 20 SAE 30	0.880 0.890	240 240	-12 -12	68.0 111.0	8.5 11.9	Performance claims: Wärtsilä MAN B&W Mitsubishi	A crankcase lubricant for low speed crosshead type diesel engines. It is manufactured from highly refined lubricating oil stocks and has very good anticorrosion and antifoam properties. The oil has a moderate level of alkalinity to neutralize acidic combustion products that can enter the crankcase. Special additives give the oil detergent properties which help cleanliness of crankcases. The combination of detergency and the oxidation stability helps provide clean piston interiors where oil is used for cooling.

Product	Density at 15°C kg/l		Pour point, max, °C	Kinematic viscosity, mm²/s at 40°C at 100°C		Performance Claims / Approvals / Recommendations	Description
Marine Gear Oils							
PINNACLE [®] MARINE GEAR ISO VG 220	0.890	250	-45	220.0	22.7	Approvals: Westfalia Alfa-Laval Rolls Royce Marine Lohman-Stolterfoht Ortlinghaus Performance claims: AGMA 250.04 (5EP) US Steel 224 DIN 51517/3	A synthetic gear lubricant based on a mixture of polyalphaolefins and diesters. It offers very good oxidation stability at elevated temperatures, help extended oil drain life and wear protection. It is recommended for the lubrication of plain and roller bearings and open and closed gears at high temperatures. It is suitable for application by bath, splash or circulation systems and specially targeted for the lubrication of purifier gears and reduction gears.

CHAIN & CHAIN SAW LUBRICANTS

Product	at 15°C	Flash point (COC),	point,	viscosity	matic /, mm²/s	Performance Claims / Approvals /	Description
Biodegradable Chain Saw I	kg/l Lubricar	min, °C ∩ts	max, °C	at 40°C	at 100°C	Recommendations	
BIOSTAR [®] CHAIN BAR 80	0.923	306	-36	80.0	19.4		This product is specially developed to overcome long term, potentially harmful effects of petroleum based chain saw oils on the ecological balance of the forests. It has a high degree of biodegradability and exhibits low toxicity values. It provides good anti-wear characteristics assured by good adhesion to surfaces. Tt is recommended for lubrication of chain saws during summer and winter and is suitable for use with various types of wood. It can be used at a wide temperature range from 20°C up to 40°C.
Chain Lubricants							
CHAIN LUBRICANT ISO VG 680	0.906	236	-12	680.0	39.5		This is a special lubricating and maintenance oil for chains. Owing to its high adhesive power and the high lubricity, less energy is lost in friction, the chain is protected against rust and wear is reduced. After the chain has been cleaned and dried, the lubricant is sprayed evenly and economically onto the chain. After a reaction period of a few minutes, optimal adhesion is reached.

Product	at	Flash point (COC),	point,	viscocity	matic /, mm²/s	Performance Claims / Approvals /	Description
	15°C,	min, °C	max, °C	at 40°C	at 100°C	Recommendations	
Industrial Hydraulic Fluids	_						
RANDO [®] EP ASHLESS ISO VG 32 ISO VG 46 ISO VG 68	0.870 0.880 0.881	216 230 238	-30 -30 -27	32.0 46.0 68.0	5.3 6.9 8.7	DIN 51524-2 class HLP ISO 6743-4 class L-HM ISO 11158 HM Approvals: Vickers I-256-S Cincinnati Milacron P68/P69/P70 Krauss Maffei Kunstoftechnik Hydraulic Oil	Hydraulic oils designed for heavy duty application and contain no zinc. They are recommended for all kinds of hydraulic equipment where anti-wear, extreme pressure and anti-corrosion properties have to be provided by the oil. This is required in cases of high thermal stress. An advantage of ash-free additives is that filterability properties of the oil will be improved, especially if contamination by water is expected. These oils have been used successfully in plastic extruders.
RANDO® HD ISO VG 10 ISO VG 22 ISO VG 32 ISO VG 46 ISO VG 68 ISO VG 100 ISO VG 150	0.847 0.864 0.876 0.876 0.881 0.883 0.887	176 196 224 232 248 252 274	-27 -30 -36 -33 -33 -27 -30	10.0 22.0 32.0 46.0 68.0 100.0 150.0	2.8 4.3 5.4 6.8 8.5 11.4 14.8	DIN 51524, Part 2 HLP SAE MS1004 MS Approvals: Denison HF-0/HF-1/HF-2 Performance claims: Cincinnati Milacron P68/P69/P70 Sperry Vickers M-2950-S/I-286-S US Steel 136/137 Bosch Rexroth RE 90 220	A series of hydraulic oils based on solvent refined base oils, blended with rust and oxidation inhibitors. They contain foam inhibitors and a special high stability anti-wear additive. They are compatible with bronze and steel components and all types of valves and servos. Recommended for use in high-performance, heavy duty hydraulic systems, including high speed/pressure vane and gear pumps, and axial piston pumps. Also recommended for machine tool lubrication where an anti-wear type product is required. Particularly suitable for common head-stock/gearbox way-lubricant system.

Product	Density at 15°C,	Flash point (COC), min, °C	Pour point, max, °C	viscocity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
RANDO® HD-Z ISO VG 15 ISO VG 22 ISO VG 32 ISO VG 46 ISO VG 68 ISO VG 100	0.855 0.859 0.867 0.874 0.880 0.884	160 194 204 216 230 246	-57 -39 -42 -42 -39 -39	15.0 22.0 32.0 46.0 68.0 100.0	3.9 5.0 6.5 8.2 11.0 14.0	DIN 51524, Part 2 HLP DIN 51524, Part 3 HVLP SAE MS1004 MS Performance claims: Cincinnati Milacron P68/P69/P70 Sperry Vickers M-2950-S/I-286-S US Steel 136/137 Bosch Rexroth RE 90 220	An extension of the Rando HD series incorporating a shear-stable viscosity index improver additive. These grades exhibit all the qualities of the HD series and in addition have multigrade viscosity properties. They have been specifically developed to meet the industry needs for a high VI (viscosity index), anti-wear hydraulic oil. These lubricants have a wide operating temperature window (OTW), even under high shear rate conditions.
HYDRAULIC OIL AW ISO VG 32 ISO VG 46 ISO VG 68	0.876 0.881 0.881	216 238 248	-24 -24 -24	32.0 46.0 68.0	5.3 6.8 8.6	DIN 51524-2 class HLP ISO 6743-4 class L-HM	Texaco Hydraulic Oils AW are universally applicable hydraulic oils that can be used in a broad range of light and average loaded hydraulic installations where not more than DIN 51524 – 2 (HLP) is required. Texaco Hydraulic Oils AW are based on solvent refined mineral oils containing anti-corrosion, anti-oxidant, anti-foam and Zn-based anti-wear additives.

Product	Density at	Flash point (COC),	Pour point,	_	matic /, mm²/s	Performance Claims / Approvals /	Description
Troduct	15°C,	min, °C	max, °C		at 100°C	Recommendations	Bescription
Biodegradable Hydraulic F	luids						
HYDRA [®] ISO VG 46	0.922	255	-45	45.2	9.3	WHC 1	A biodegradable, zinc-free hydraulic oil based on synthetic base stock. It is specifically designed for applications where the possibility of environmental contamination could occur. It shows good viscosity/ temperature characteristics, hence wide temperature range application (-30°C up to 95°C) is possible. The product is fully miscible with conventional mineral oil based fluids.
Fire-resistant Hydraulic Flu	ids	1	· · · · · · · · · · · · · · · · · · ·		1		
SAFETY FLUID HFAS	1.061	-	-15			Meets ISO 6743 (HFAS) Meets ISO 12922 (HFAS) Meets 7 th Luxemburg Report	A high quality aqueous concentrate which contains a mixture of efficient organic inhibitors, a protective agent for copper alloys, a dispersant-detergent agent and an antifoam additive. It could be used either as a corrosion protection fluid or as a fire-resistant fluid type HFAS (S = Synthetic). The product provides a high level of safety and reliability to the user. It helps energy savings and is environmentally acceptable.

Product	Density at 15°C,	Flash point (COC), min, °C	Pour point, max, °C	viscocity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
GLYTEX [®] HFC ISO VG 46	1.074 at 20°C	-	-27	47.0		Approvals: 7 th Luxembourg Report (CHERCHAR - France) Renault France (T843457)	A HFC fire resistant hydraulic fluid formulated to provide a high level of safety and reliability for the user. The high water content increases the safety even in case of significant evaporation. It is neutral to materials used in hydraulic systems (such as steel, aluminum, brass, rubber and plastic). It is recommended for hydraulic systems operating close to hot surfaces and flames and where a fire hazard exists: mines, steel industry, forging, marine and aviation.
SYNSTAR® HYDRAULIC HFDU ISO VG 46	0.924	320	-30	45.3	9.5	Meets 7 th Luxembourg Report	HFDU type fire resistant fluid meeting the 7 th Luxembourg Report. The product is based on synthetic esters and an anti-wear/antioxidant package. It is recommended in hydraulic systems operating close to hot surfaces and flames and where a fire hazard exists in case of a leak of the pressurized hydraulic fluid.

PNEUMATIC TOOL LUBRICANTS

Product	Density at 15°C kg/l	Flash point, min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
ARIES [®] ISO VG 32 ISO VG 100	0.908 0.886	165 220	-27 -24	31.0 105.0	5.3 10.2		Specially formulated products for the lubrication of percussion-type air tools. Additives are used to impart tackiness, antifogging and anti-foaming properties. Recommended for percussion-type air tools, including rock drill, paving breakers, pneumatic pile drivers, jack hammers, etc. used in the mining and construction industries. They are also recommended for industrial plain and antifriction bearings.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic <u>/, mm²/s</u> at 100°C	Performance Claims / Approvals / Recommendations	Description
Mineral Gear Oils MEROPA® ISO VG 68 ISO VG 100	0.881	225	-30	68.0	8.5		Gear lubricants blended from high quality base stocks and an effective sulphur-phosphorus EP additive package designed to reduce wear of enclosed gears and other equipment operated under heavy loads and shock conditions. They
ISO VG 100 ISO VG 150 ISO VG 220 ISO VG 320 ISO VG 460 ISO VG 680 ISO VG 1000 ISO VG 1700	0.897 0.891 0.895 0.899 0.903 0.920 0.934 0.898	228 230 240 242 246 250 254 260	-27 -24 -21 -21 -15 -15 -15	100.0 150.0 220.0 320.0 460.0 680.0 1000.0 1700.0	11.2 14.5 19.0 24.0 32.0 37.0 45.5 79.7	Performance claims: DIN 51517/3 AGMA 250.04 US Steel 224 Textron Power Transmission Cincinnati Milacron	are inhibited to provide good foam resistance and water separating characteristics which make them well suited for circulating systems where water contamination is a hazard. They are non-corrosive to gear and bearing materials such as steel, copper, bronze, babbitt or cadmium-nickel. Typical applications include enclosed gear system, chain drives, sprockets, plain and anti-friction bearings, slide guides, and flexible couplings.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
MEROPA [®] BM ISO VG 680 ISO VG 1000 ISO VG 1700	0.920 0.928 0.924	262 250 238	-12 -12 -15	680.0 1000.0 1700.0	37.0 45.0 62.0	Performance claims: DIN 51517/3 DIN 51502 type CLP F	Gear lubricants blended from high quality base stocks, an effective sulfur-phosphorus EP additive package and molybdenum disulphide. They are designed to help reducing wear of enclosed gears and other equipment operated under heavy loads and shock conditions. They are inhibited to provide good foam resistance and are non-corrosive to gear and bearing materials such as steel, copper, bronze, babbitt or cadmium-nickel. Good oxidative and thermal stability to provide long service life.
MEROPA [®] WM ISO VG 320	0.895	250	-18	320.0	24.4	Performance claims: US Steel 224 AGMA 9005-E02 David Brown ET 33/80 DIN 51517/3 Cincinnati Milacron Flender Valmet	This oil series has been specially designed to provide a high micro pitting protection. They are blended from selected high quality base stocks and an advanced and effective sulphurphosphorus EP additive package designed to reduce wear of enclosed gears and other equipment operated under heavy loads and shock conditions. It surpasses the loadstage 10 in the FZG micro pitting test (FVA.54/I-IV) and is therefore classified as GFT-High.

	_	Flash point		_	matic	Performance Claims /	
Product	at 15°C		point,		y, mm ² /s	Approvals / Recommendations	Description
	kg/l	min, °C	max, °C	at 40°C	at 100°C	Recommendations	1
Synthetic Gear Oils		1	Ι		1		1
PINNACLE® EP ISO VG 150 ISO VG 220 ISO VG 320 ISO VG 460	0.850 0.853 0.855 0.856	244 234 240 246	-48 -48 -42 -39	150.0 220.0 320.0 460.0	18.8 26.1 35.2 46.5	Approvals: David Brown (Type H) Performance claims: DIN 51517/3 AGMA 250.04/251.02 US Steel 224	Synthetic lubricants suitable for a wide range or gear applications involving mobile and industrial equipment. These oils are especially recommended for equipment operated under adverse conditions where short service life with conventional lubricants can be expected. Typical uses include enclosed gear cases, speed reducers, plain and anti-friction bearings, flexible couplings, chain drives and sprockets. They may be applied by bath splash, circulating and spray lubrication systems. These oils are fully compatible with mineral oils that might be left over in the system.
PINNACLE® WM ISO VG 320	0.856	240	-48	320.0	35.4	Approvals: Bosch Rexroth Moventas Arburg Performance claims: US Steel 224 AGMA 9005-E02 David Brown ET 33/80 DIN 51517/3 Cincinnati Milacron Valmet	Synthetic based gear lubricants designed for use in equipment operated under adverse conditions of heavy load or shock loading, elevated temperatures or water contamination. They have been specially designed to provide a high micro pitting protection. They are recommended for a variety of gears on mobile contractor type equipment, open pit and underground mining equipment, cement mills, ball mills, rolling mills, crushers, shakers, hoists, conveyors, kilns, winches, machine tools, skip lines and marine equipment.

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
SYNLUBE® WS ISO VG 150 ISO VG 220 ISO VG 320 ISO VG 460 ISO VG 680 ISO VG 1000	1.057 1.062 1.062 1.067 1.072 1.089	284 284 282 284 287 296	-45 -42 -39 -36 -33 -30	150.0 220.0 320.0 460.0 680.0 1000.0	25.0 42.0 61.0 83.0 122.0 175.0	Approvals: Flender Performance claims: DIN 51 517/3	A family of synthetic industrial gear lubricants showing continous performance under demanding operating conditions. They are based on water soluble polyalkylene glycols, thus helping micro pitting protection and EP performance. Furthermore, the product shows thermal stability and good corrosion protection. They are NOT miscible with mineral oils and should preferably not be mixed with other polyglycol based lubricants in order to preserve the designed properties of Synlube WS.

CIRCULATING OILS

Product	Density at 15°C kg/l	Flash point, min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
HONOR [®] ASHLESS AW ISO VG 150	0.890	240	-12	150.0		Performance claims: Morgan Lubrication Spec.Rev 1.0 Danieli St. 0.000.002	These lubricants are formulated from selected high VI base oils combined with a high quality additive package which is metal free and provides good wear protection, rust inhibition and water separation properties. These are circulating oils specifically designed for the lubrication of ferrous and non-ferrous Morgan no-twist mills and Morgoil back up-roll bearings. Other applications include general lubrication of gears and bearings. The metal-free additive package limits staining on the steel plates.
HONOR [®] AW ISO VG 220	0.897	260	-9	220.0	19.0	Performance claims: Morgan Lubrication Spec.Rev 1.0 Danieli St. 0.000.002	A circulating oil for application in the steel mill industry. This lubricant is formulated from selected high VI base oils combined with high quality additives which are metal free and provide rust inhibition and good wear protection and water separation properties. It does not cause corrosion of steel, copper, bronze, babbitt, or cadmium nickel bearing metals at typical operating temperatures.

CIRCULATING OILS

Product	Density at 15°C kg/l	Flash point, min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
OMNIS® ISO VG 22 ISO VG 32 ISO VG 68 ISO VG 100 ISO VG 150 ISO VG 220 ISO VG 460	0.861 0.853 0.880 0.884 0.887 0.898 0.905	220 220 242 260 266 268 300	-20 -20 -20 -21 -20 -18 -10	20.0 32.0 67.4 102.0 153.0 220.0 460.0	4.0 5.4 8.7 10.7 14.4 19.0 30.4		A range of solvent refined paraffinic mineral oils which have high viscosity indices, low pour points and low carbon forming tendencies. They are recommended for use in some stationary diesel engines, gas and dual fuel engines and reciprocating air compressors where non detergent, low deposit crankcase oils are required. They do not contain ash forming additives. They are also suitable for use as general machine lubrications, quench oils and process oils.
PAPER MACHINE OIL XL ISO VG 150 ISO VG 220	0.883 0.886	256 272	-9 -9	150 220	15.1 18.2	Performance claims: FAG SKF	A series of specially formulated metal-free anti- wear circulating oils for use in paper machine lubrication systems. Designed for circulating systems benefiting from effective anti-wear/EP protection and oxidation performance.

WAY LUBRICANTS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
WAY LUBRICANT X ISO VG 68 ISO VG 220 ISO VG 320	0.879 0.892 0.895	229 241 242	-33 -27 -24	68.0 220.0 320.0	9.8 19.7 24.3	Performance claims: DIN 51524, Part 2 Cincinnati Milacron P47/P50 General Motors LS-2 SKC	A series of lubricants, especially designed for the lubrication of slideways in metal processing machines. They are chlorine-free, which make them more environmentally acceptable. They have a static friction coefficient which is lower than the kinematic friction coefficient, which will prevent stick-slip effect on the slideways. They are not easily washed away by emusifiable cutting fluids. These oils show wetting and sticking properties, which enhance the build up of a thick oil film and which prevent the lubricant from dripping off, even from vertical surfaces.

TURBINE OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
REGAL [®] PREMIUM EP ISO VG 32 ISO VG 46 ISO VG 68	0.859 0.863 0.871	220 226 248	-15 -15 -12	32.0 46.0 68.0	5.5 5.5 8.3	Performance claims: DIN 51515/T1 L-TD/L-TG ISO 8086 L-TSE/L-TGE BS 489 GEC Alstom NBA P50001A/P50003A GEK Fiat Avio Laborelec KEMA Atlas Copco 790.21.2E Solar ABB Stal 812101-09 MAN Turbo TQL-T2 Approvals: Siemens TLV 9013 04 Alstom HTGD 90117U Skoda Power Tp00100P	A high temperature resistant gas turbine oil which can also be applied in steam turbines. For this reason it is a recommended lubricant in combined cycle units lubricated with one system. The all-round properties of Regal Premium EP make it suitable for the lubrication of a wide range of equipment associated with the turbines for which it is recommended. Typical applications include air compressors, bath and circulating systems supplying bearings, lightly to moderately loaded gear sets, pumps, electric motors and low to moderate pressure hydraulic systems. It is NOT recommended for aviation gas turbines in either aircraft or non-aviation service.

TURBINE OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
REGAL [®] EP ISO VG 100 ISO VG 150 ISO VG 220 ISO VG 320	0.883 0.886 0.893 0.890	260 260 276 270	-18 -12 -12 -12	100.0 150.0 220.0 320.0	10.9 14.6 18.7 23.4	Performance claims: DIN 51515/T1 L-TD ISO 6743/5 BS 489	A family of turbine oils which provide oxidation stability, anti-corrosion and anti-wear properties. They have good resistance to sludge formation, water separating characteristics, foam resistance and air-release properties, together with low temperature performance. They are recommended for use in the lubrication systems of mineral oil lubricated steam and hydraulic turbines operating under various service conditions, and for gas turbines in moderate service where high ambient temperatures are not present in the bearing housings. They are NOT recommended for aviation gas turbines in either aircraft or non-aviation service.
REGAL [®] SGT 22	0.995	280	-62	25.6	5.1	Approvals: MIL-PRF-23699F Class STD GE D50 TF1 (ML engines) Rolls Royce (Allison) EMS 53 (501 & T56) Rolls Royce (Derby) RB 211 Avon Olympus Tyne Spey	An advanced stationary gas turbine oil based on a blend of specially designed polyolesters and additives. It provides an improved thermal and oxidation stability under severe operating conditions, low carbon deposit and sludge forming tendencies, rust and corrosion protection, rapidly releases entrained air. It is recommended for aeroderivative gas turbines exposed to severe operating environment in non-aviation applications such as industrial power generation, gas transmission and marine propulsion.

AIR & GAS COMPRESSOR OILS

	1	Flash point			matic	Performance Claims /	
Product	at 15°C	(COC),	point,		y, mm²/s	Approvals /	Description
	kg/l	min, °C	max, °C	at 40°C	at 100°C	Recommendations	
Air Compressor Oils							,
COMPRESSOR OIL EP VD-L ISO VG 46 ISO VG 68 ISO VG 100 ISO VG 150	0.879 0.885 0.889 0.894	234 244 248 286	-24 -18 -12 -12	46.0 68.0 100.0 150.0	6.8 8.9 11.3 14.9	Performance claims: DIN 51506 VD-L Teikoku Machinery Air compressors Tanabe Reciprocating type compressors Sperre Reciprocating type compressors Hatlapa V-Line piston compressors Hamworthy vertical compressors	They are blended with selected high quality paraffinic base oils. A well formulated additive package provides oxidation resistance, corrosion protection and EP characteristics. Very little deposit on pistons and valves is produced, even at high temperatures, thus reducing the risk of fire and explosion in compressors. This line of compressor oils has characteristics required to provide a smooth, economical compressor operation especially under severe conditions.
CETUS [®] PAO ISO VG 46 ISO VG 68	0.842 0.845	232 240	-57 -57	46.0 68.0	8.1 10.3	Approvals: Tanabe ABB Performance claims: Atlas Copco ECB 573 DIN 51506 VD-L	Synthetic compressor oils based on polyalphaolefins and an advanced additive package. It is recommended for lubrication of rotary screw compressors. Additionally, it is recommended for other types of compressors, like single and multistage reciprocating compressors, and single and multistage centrifugal compressors where an ISO 46 viscosity grade is required. It is specifically suited for the lubrication of turbochargers in marine diesel engines.

AIR & GAS COMPRESSOR OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
CETUS [®] DE ISO VG 100	0.962	252	-39	96.6	10.2	Performance claims: Compair Hamworthy Matsubara Sperre Tanabe (Type H)	Specifically designed for lubrication of reciprocating compressors operating at high discharge temperatures and discharge pressures. It is a fully synthetic lubricant based on diester technology. It provides an extended drain interval, reduced oil consumption and lower maintenance costs. It may not be compatible with some zinc plated components (including galvanized), seals, paints, plastics, etc. found in systems designed for petroleum oils. When there is any doubt regarding the compatibility of system components with these diester based lubricants, the equipment manufacturer should be consulted.
CETUS [®] S ISO VG 46	0.850	252	-30	46.0	6.9	Performance claims: DIN 51506 VD-L	A semi-synthetic compressor oil, blended with selected oxidation stable base oils. It has been specifically developed for screw compressors, operating at moderate discharge temperatures (< 100°C) and discharge pressures (< 15 bar). This product allows extended drain intervals.

AIR & GAS COMPRESSOR OILS

Product	Density at 15°C kg/l		Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
Gas Compressor Oils							
LPG COMPRESSOR OIL	1.055	260	-30	185.0	35.0	Approvals: Sulzer Burckhardt A.G. (K-type) Howden Compressors Ltd Performance claims: Linde	A fully synthetic oil, polyalkylene glycol based, for the lubrication of hydrocarbon and chemical gases compressor units. It is used for the following gases: 1. liquefied petroleum gases - propane and butane 2. liquefied natural gases - methane and ethane 3. hydrocarbon chemical gases - ethylene, propylene and butylene 4. chemical gases - vinylchloride, ammonia, butadiene It is particularly suitable for marine service on vessels carrying specialist liquefied gas cargoes. It should not be mixed with mineral oils.

REFRIGERATION COMPRESSOR OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
CAPELLA® WF ISO VG 32 ISO VG 46 ISO VG 68	0.906 0.910 0.915	178 188 198	-45 -39 -36	30.0 43.8 68.0	4.4 5.4 6.7	DIN 51503 BS 2626/1992, type A Approvals: Sulzer, Bitzer, Tecumsec, Carrier, York, Sabroe, J&E Hall Performance claims: Tecumsec, Belgium Daikin, Robert Bosch (G), Heinrich Huppman (G), Dorin (I), Matsushita (J), Trane, DWM Copeland (US), Kelvinator Inc (US)	A line of oils for the lubrication of compressors used in refrigeration and air-conditioning systems. They are manufactured from specially refined and processed naphthenic pale oils, to meet the requirements of many refrigeration equipment manufacturers. They have low freon floc temperatures and pour points. They do not 'wax-out' under the low temperature conditions typically encountered in modern refrigeration systems. These oils are suitable for refrigeration units using fluorinated hydrocarbon refrigerants (such as R12, R22, R502) and ammonia.
CAPELLA[®] PREMIUM ISO VG 68	0.859	260	-42	68.0	9.2	DIN 51 503 Part 1 KA group	Oil that is specially designed for the lubrication of ammonia refrigeration compressors. This is a semi-synthetic oil containing an additive package to provide resistance to deposits and rust. It has a resistance to oxidation in the presence of ammonia, leaving the circuits clean and free from sludge. The lower volatility versus conventional mineral oils limits the oil consumption. The lower carry over of oil beyond the evaporator avoid tube coating cutting down the efficiency. It is NOT recommended for refrigeration systems using halogenated refrigerants (freons).

REFRIGERATION COMPRESSOR OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
CAPELLA® A ISO VG 68	0.836	260	-57	68.7	10.6	Performance claims: DIN 51.503 BS 2626/1992 ABB Stal Refrigeration AB Sabroe Broedrene Gram	Fully synthetic oil for the lubrication of ammonia refrigeration compressors. It does not contain additives. It is recommended for use in refrigeration and air-conditioning systems requiring lubricant with low-temperature performance: minimum evaporator temperatures of -60°C. They are particularly suitable for reciprocating and screw compressors operating at discharge temperatures exceeding 100°C.
CAPELLA® HFC ISO VG 32 ISO VG 55 ISO VG 100	1.005 1.011 1.000	240 270 275	-48 -39 -39	32.0 53.0 100.0	5.7 8.4 11.1	Performance claims: Bitzer Bock Carrier Danfoss Dorin Electrolux Embraca/Aspera Frigopol Gram Grasso Maneurop Sabroe ABB Stahl Sulzer	Based on polyolesters, they provide thermal and chemical stability in presence of the environmentally safe hydrofluorocarbon (HFC) refrigerants, especially R134a, R404a, R507 These oils have undergone numerous compressor tests and demonstrated improved compressor cleanliness as well as complete absence of copper transfer. They are especially suited for the first-fill and retrofit lubrication of refrigeration compressors in large food retails, industrial systems, air conditioning and heat pump equipment and cooling systems in the transport sector.

REFRIGERATION COMPRESSOR OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
REFRIGERATION LOW TEMP ISO VG 68	0.870	190	-42	68.0		Performance claims: Sabroe Bock Bitzer Carrier Thermoking Dorin Danfoss Necchi/ ERC Howden	Fully synthetic oil for the lubrication of compressors used in R22 and R502 refrigeration systems, operating at low evaporator temperatures: -35°C (R22) and -25°C (R502). It does not contain additives, but it is very stable towards chlorofluoromethane type refrigerant gases and iron casting. They are NOT suitable for use in AMMONIA refrigerating installations.

INSULATING OILS

	Density	Flash	Pour	Kine	matic	Performance Claims /	
Product	at 20°C	point,	point,		y, mm²/s	Approvals /	Description
	kg/l	min, °C	max, °C	at 20°C	at 40°C	Recommendations	
Transformer Oils			1				
TRANSFORMER OIL INHIBITED	0.875	140	-45	19.0	8.9	DIN 57370 VDE 0370 Part 1, Class A IEC 296 (1982), Class 1&2 Siemens TUN 901293	A mineral-base insulating oil designed for use as transformer, transducer, and switchgear oil and in similar equipment, also at low temperatures in outdoor use. It is an inhibited, low-viscosity lubricant manufactured from a naphthenic base oil. The pre-dried product has a breakdown voltage greater than 60 kV. Main benefits of this oil are its high dielectric strength and high oxidation stability, ensuring a long service life of the oil charge, as well as its neutral behaviour towards insulating material.
TRANSFORMER OIL GK-2	0.867	155	-54		9.6	Laborelec Performance claims: IEC 60296 (2003) BS 148 (1997) ASTM D3487 Type I NBN C27-101 (1985) NF C27-101 (1982) DIN 57370 (VDE 0370)	A mineral-base insulating oil designed for use as transformer, transducer, and switchgear oil and in similar equipment, also at low temperatures in outdoor use. It is a non-inhibited, low-viscosity lubricant manufactured from a naphthenic base oil. The pre-dried product has a breakdown voltage greater than 70 kV (after treatment). Main benefits of this oil are its high dielectric strength and high oxidation stability, ensuring a long service life of the oil charge, as well as its neutral behaviour towards insulating material.

INSULATING OILS

Product	Density at 20°C kg/l	Flash point, min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 40°C	Performance Claims / Approvals / Recommendations	Description					
Electrical Discharge Machining fluids												
EDM FLUID ISO VG 2 ISO VG 5	0.817 0.832	104 128	-30 -6	3.6 5.9	2.4 3.7	Performance claims: Charmilles Corporation of America Cincinatti Milling Machine Company Easco Products Excello Corporation Ingersol Milling Machine Company	High-flash point, low viscosity, low odour products that meet the requirements for high grade electrical discharge machining fluids. They offer high flash point, minimum evaporation loss, long life time of electrode and fluid. EDM Fluid 5 is recommended for rough finishing operations or shaping operations and EDM Fluid 2 is suitable for the finest cut operations.					

PROCESS OILS

Product	Density at 15°C	Flash point (COC),	Pour point,	_	matic /, mm²/s	Performance Claims / Approvals /	Description
rioddet	kg/l	min, °C	max, °C		at 100°C	Recommendations	Description
Paraffinic and Naphtenic O	ils						
TEXNAP [®] 9 13 22	0.888 0.895 0.901	146 150 178	-57 -42 -42	9.0 13.0 22.0	2.3 2.7 3.7		These oils are solvent refined and hydrofinished naphthenic distillate oils. They are characterized by low pour points, good solvency properties and oxidation stability. They are widely used as extenders/softeners for rubbers and plastics, for the manufacturing of printing ink, as leather tanning agents, for the manufacturing of shoe polish, as carrier for soluble oils, as textile conditioner, as dust binding for ores.
TEXPAR [®] 5 12 22 100 460	0.815 0.849 0.860 0.882 0.902	119 162 170 233 250	-12 -12 -15 -12 -3	5.6 11.6 19.6 104.0 473.0	1.6 2.9 4.1 11.5 30.8		These oils are solvent-extracted and dewaxed paraffinic mineral oils manufactured by hydrofinishing treatment. They provide low volatility, low aromaticity, and non-staining properties. They show good low temperature characteristics with color stability and oxidation resistance. They are widely used for the manufacturing of printing ink, as carrier for soluble oils, as extenders/softeners for rubbers, plastics, as carrier for lubricant additives, as anti-dust oil for fertilizers and explosives, as leather impregnating oil, as adjuvants in herbicides.

PROCESS OILS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 40°C	Performance Claims / Approvals / Recommendations	Description
White Oils							
WHITE OIL PHARMACEUTICAL 30 40 70 120 240	0.847 0.865 0.852 0.864 0.868	156 182 215 190 265	-12 -12 -9 -15 -9	32.0 38.0 60-75 115.0 215.0	14.4 16.5 24.0 40.0 70.0	Meet the requirements of: German pharmacopoeia European pharmacopoeia British pharmacopoeia US pharmacopoeia FDA 21 CFR 178.3620 FDA 21 CFR 172.878	These are colourless, clear, oily, odorless, non-fluorescent liquids. The different levels of viscosity have been carefully planned to permit a wide range of uses. They are of particular value in the following applications: pharmaceuticals and cosmetics, food, chemicals, lubricants, industrial applications - rubber, plastics, paper, ropes, textiles, agriculture and precision machinery.
WHITE OIL TECHNICAL 40	0.865	166	-18	40.0	17.0	Meet the requirements of: FDA 178 3620 b/c	White Oils Technical are transparent to light-yellow, largely colorless mineral oils. They exhibit a high degree of purity and excellent color stability and resistance to aging. The product complies with the purity standards of the U.S. Food and Drug Administration (FDA 178 3620 b/c).

HEAT TRANSFER FLUIDS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
TEXATHERM® ISO VG 32 ISO VG 46	0.857 0.860	220 235	-21 -15	32.0 46.0	5.4 6.9	Performance claims: DIN 51522-Q	These are heat transfer fluids formulated to meet the stringent requirements of hot circulating systems operating at temperatures of up to 320°C. They exhibit very good thermal and oxidation stability. Their high thermal conductivity and low viscosity at the relevant operating temperatures will help high heat transfer rates with limited pumping energy. They are used in industries such as those processing asphalt, soap, plastics, waxes, paper, fibre boards and many specialities, where close temperature control is needed during manufacturing or processing. Also, they have low toxicity and are suitable for use in heat transfer systems of food, feed and drink plants, although without formal NSF H1 approval.

HEAT TRANSFER FLUIDS

Product	Density at 15°C kg/l	Flash point (COC), min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
TEXATHERM [®] HT ISO VG 22	0.915	205	-50	18.7	3.4	Performance claims: DIN 51522-Q	A heat transfer medium suitable for operation over a wide temperature range between -50 and 320°C. Owing to its synthetic nature, it exhibits high thermal and oxidative stability. It facilitates plant start-up even at ambient temperatures below 0°C. The low pour point is particularly advantageous in such plants where pipes and expansion tanks are installed outdoors. It is used for indirect heat transfer in closed systems operating, for example, in the chemical industry, leather industry (shoe factories), textile industry, rubber industry, building materials industry, chipboard manufacturing plants, in laundries, food and fodder industries.
TEXATHERM® U ISO VG 32	0.869	195	-9	32.0	5.3	Performance claims: DIN 51522-Q	This oil is used for indirect heat transfer in closed systems up to 300°C. It exhibits high thermal and oxidative stability. It can be easily pumped through the circulation system because of its favorable viscosity grade. Energy consumption is therefore kept low. Keeps system clean in a long period.

RUST PREVENTIVE OILS

Product	Density at 15°C kg/l	Flash point, min, °C	Pour point, max, °C	viscosity	matic /, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
METAL PROTECTIVE OIL L	0.899	140	-15	18.0			A mineral oil based rust preventive oil, additivated with specially selected inhibitors, which protect steel during storage against rust and corrosion. The oil covers metallic surfaces with a thin, tight film. The formation of colored rings on steel plates, which have been stacked or rolled up in a storage room for a long period of time is avoided. It does not contain any solvent, but it can be diluted up to 10% to make it more fluid. It should never be applied on dirty and wet surfaces.
RUSTPROOF COMPOUND L	0.901	52			imately GI 2		Very viscous rust preventive product based on wax. On the surface it leaves a strong water resistant film. It is not neccesary to clean surface before applying it. For easier applying, it is recommended to dilute it with solvent. It protects up to 3 years in open, and under cover substantially longer.
RUSTPROOF OIL 944D	0.836	40		3.0			A low viscous water-displacing fluid, providing an oily film, which ensures corrosion protection to pieces that have undergone a humid treatment. It is economic in use, owing to its high surface covering power. It permits the user to apply the product by immersion, spraygun or brush, thereby obtaining efficiency ratings of 50-55 m²/kg product. It can be easily washed off by any conventional degreasing method.

RUST PREVENTIVE OILS

Product	Density at 15°C kg/l	Flash point, min, °C	Pour point, max, °C	viscosity	matic y, mm²/s at 100°C	Performance Claims / Approvals / Recommendations	Description
RUSTPROOF OIL 960	0.800	40		2.4-3			A low viscous water-displacing barium free fluid, providing an oily film, which ensures corrosion protection to pieces that have undergone a humid treatment. It expels water from metallic surfaces, thereby yielding a thin oily film. It looses dirt, rust, etc., due to its penetrating power and can be used to clean fire arms. It contains white spirit type solvent, but does not contain benzene or chlorinated solvents.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
Lithium (Li) based greases	i T		1			
MULTIFAK [®] EP NLGI 0 NLGI 1 NLGI 2	ISO-L-XCCEB 0/1/2 DIN KP 0/1/2 K-30	-30 up to 120 (140)*	Li	180	Approvals: MAN 283 (NLGI 2) MB 267 (NLGI 2)	Multipurpose EP grease containing highly refined mineral base oils, lithium thickener, EP additives and rust and oxidation inhibitors. Also suitable as a multipurpose automotive grease for general purpose applications. They are non-corrosive to nonferrous bearing metals as well as steel, they are very shear stable, protect against rust and resist water washing. They can resist heavy, continuous and shock loads, high speeds.
MULTIFAK [®] EP NLGI 000	ISO-L-XCCEB 000 DIN GP 000 K-30	-30 up to 120 (140)*	Li	>160	Approvals: Mecafluid Manual Pump PG 14 Automatic Pump PGA+GRG Distributors IDR+IDG+IT	Semi fluid high quality multipurpose greases containing anti-oxidants, anti-corrosion, anti-wear and EP additives. They are very shear stable, retain their original consistency while working, protect against rust and resist water washing. Recommended for use as multipurpose chassis lubricant in centralised lubricating systems under adverse conditions - high and low temperatures, heavy, continuous and shock loads, high speeds. They are also suitable for large rolling element bearings in mining, construction, and marine equipment operating under adverse conditions.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
MULTIFAK® T EP NLGI 2	ISO-L-XBCEB 2 DIN KP 2 K-20	-20 up to 130 (150)*	Li	190		A quality multipurpose lithium EP grease on a semi-synthetic base (mineral oil+polymer) for lubrication of cars, industrial and construction machines. It is particularly useful for bearings which are seldom lubricated and not easy to access but work under severe working conditions.
MULTIFAK® PREMIUM NLGI 3	ISO-L-XCCEA 3 DIN K 3 K-30	-30 up to 140	Li	190		A multipurpose industrial lithium soap product for slow moving operations, prepared from a well refined mineral oil. It is non-corrosive to non-ferrous bearing metals as well as steel. Multifak Premium 3 has a good oxidation stability and can be used in continuous service up to +140°C.
MULTIFAK® 264 EP NLGI 00/000	ISO-L-XEBEB00/000 DIN GP 00/000 K-50	-50 up to 120	Li	>160	Approvals: Willy Vogel Tecalamit Lincolm MB DBL 6833.00 MB Blue Book Spec.264 MAN 283- Li P00	A light green coloured lithium grease based on mineral oils. The grease has good mechanical stability and water resistance. A well formulated additive package helps rust protection, anti-wear properties and oxidation stability. The grease is suited for centralised lubricating installations of utility vehicles as well as for outside working units having long tubing. It may also be used for gears where grease lubrication is recommended.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
MOLYTEX [®] EP NLGI 2	ISO-L-XCCEB 2 DIN KPF 2 K-30	-30 up to 130	Li	210	Recommended for: ASTM D4950 - LB Association of American Railroads Spec. M-929-75	Multipurpose lithium EP grease containing molybdenum disulfide. It is especially developed for use in constant-velocity joints and for construction, mining and agricultural applications. Molytex EP grease is formulated to perform well in conditions of high loads and extreme temperatures. Additionally, Molytex EP grease helps material resistance to rust and is resistant to water washout.
COUPLING GREASE NLGI 0/1	ISO-L-XCCIB 0/1 DIN KP 0/1 K-30	-10 up to 120 (160)*	Li and polymers	>190	Recommended for: Browning, Esco, Falk, Eugen Schmidt, Koppers, Jaure, Wartsila, Fast, Renke, USDA H2, AGMA CG-1/2/3 Type	It is specially formulated to resist to oil separation when subjected to the high centrifugal forces normally found in couplings. In actual field experience this grease has shown its ability to perform satisfactorily beyond 3 years. This product should be used in all grease couplings, especially in those hard to service or those operating under severe conditions.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
STARPLEX® EP NLGI 2 NLGI 3	ISO-L-XCDHB 2 DIN KP 2 N-30 ISO-L-XBDEB 3 DIN KP 3 N-20	-35 up to 140 (180)* -20 up to 150 (200)*	Li- complex	>250	Performance claim: Volvo	Special multi-purpose lead-free lubricant developed for long-term service in ball and roller bearings in the high temperature range. Starplex EP contains a mineral base oil component and a temperature resistant lithium complex soap as thickener, the special additives included improve the EP properties so effectively that safe long-term lubrication is possible even under extreme operating conditions. It provides corrosion protection even under extreme environmental impacts, it has good sealing properties.
STARPLEX® PREMIUM NLGI 1	ISO-L-XCDHB 1 DIN KP 1 N-30	-30 up to 150 (220)*	Li- complex	230		It is intended for use in heavily loaded equipment operating under adverse conditions. It is especially recommended for grease lubricated bearings on paper machines where its outstanding water resistance characteristics, EP properties, oxidation stability and high dropping point eliminates the need for separate greases in the machine's wet end and felt roll bearings. It will also lubricate highly loaded bearings in the press section.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description					
Calcium (Ca) based grease	Calcium (Ca) based greases										
904 GREASE NLGI 1	ISO-L-XCAHA 1 DIN MF 1 C-30	-30 up to 60	Ca	110		A smooth calcium soap grease containing approximately 12% graphite for curve rail lubrication. It provides wear protection of wheel flange and rail due to the reduction of metal-to-metal contact. It also reduces the noise on curves. It is suitable for a wide variety of track and wheel lubricator systems.					
TEXCLAD [®] NLGI 2	ISO-L-XAAIB 2 DIN MF 2 C-10 DIN KF 2 C-10	-10 up to 60	Ca	106		It is a blackish, smooth and buttery water stabilised calcium grease containing selected graphite and molybdenum disulfide additives. It can be used in cases where the content of bitumen is an environmental problem. Texclad 2 reduces wear by providing a tough durable film. It is recommended for use on fifth wheels and open gears of construction machinery, ball mill gears and large enclosed spur gears where oil leakage is a problem.					

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
NOVATEX [®] EP NLGI 2	ISO-L-XCCEB 2 DIN KP 2 K-30	-30 up to 120	Ca	145	<i>Approvals:</i> Hoesch Rothe Erde	Novatex EP is calcium-12-hydroxystearate grease made with a specially selected high viscosity mineral oil and containing extreme pressure and antiwear additives as well as oxidation and corrosion inhibitors. Specifically recommended for the lubrication of plain and roller bearings of steel and paper mill equipment which operate at temperatures up to 120°C. It is good under heavy water-washing conditions where extreme pressure properties must be maintained.
TEXANDO® CX EP NLGI 2	ISO L-XBDHB 2 DIN KP 2 N-20	-25 up to 140 (180)*	Ca- complex	>240	Approvals: Voest Alpine FAG SKF	A water resistant and consistent lubricant based on calcium complex soap and refined mineral oil. It provides mechanical stability and load-carrying capacity. Oxidation and corrosion inhibitors help reliable corrosion protection and long lifetime. Suitable for the lubrication of heavy loaded bearings and joints (CV-joints and spindles) subjected to medium rotational speeds or low to medium speed as well as to unsteady motion even in the presence of water.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
TEXANDO [®] FO 20 NLGI 2	ISO L-XCDHA 2 DIN K 2 N-30	-30 up to 150 (250)*	Ca- complex	280	Approvals: Ford G-MC001-4505 Black&Decker Voest Alpine Alsen Breitenburg FAG SKF	Calcium complex grease which contains highly refined solvent neutral base oil. It also contains a carefully selected additive package to improve oxidation resistance and corrosion protection. It can be used in a wide temperature range. It is completely waterresistant, both against boiling water and against slightly acidic or slightly alkaline solutions. Within its wide usable temperature range it provides effective protection against wear due to the complex soap system.
Sodium (Na) based grease	s					
MARFAK [®] NLGI 00 NLGI 1	ISO L-XBBAA 00/1 DIN G 00 H-20 DIN K 1 H-20	-20 up to 95	Na	N/A (00) 170 (1)		These are fibrous sodium soap greases. The fibrous nature of these products enables them to effectively protect equipment from contaminants like dust by providing a seal. The sodium soap also has inherent rust protection capability because of its ability to emulsify small quantities of water. They are used to lubricate plain and slow speed antifriction bearings. They form a tough durable film. Recommended for use as chassis lubricants for passenger cars, trucks, buses, farm and construction equipment.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description				
Open gear greases										
TEXCLAD® NLGI 2		For more details: see "Calcium (Ca) based greases"								
TEXCLAD [®] AL EP NLGI 00/000	ISO L-XBGHB 00/000 DIN OGPF00/000 S- 30	-30 up to 200 (250)*	Al- complex	>250		Texclad AL EP 00/000 is a sprayable aluminium complex grease based on high performance mineral oils. It contains very fine graphite. Texclad AL greases are designed for automatic spray lubrication of toothed wheels, gear rings, toothed racks and pinions under high pressure and temperature operations. They suit for lubrication of rotary furnaces or similar hot lubricating points even under dusty and wet conditions.				
TEXCLAD [®] AL EP NLGI 0	ISO L-XBGHB 0 DIN OGPF 0 S-20	-20 up to 200 (250)*	Al- complex	>250		Texclad AI EP 0 is a sprayable aluminium complex grease based on high performance mineral oils. It contains very fine graphite. Texclad AL greases are designed for automatic spray lubrication of toothed wheels, gear rings, toothed racks and pinions under high pressure and temperature operations. They suit for lubrication of rotary furnaces or similar hot lubricating points even under dusty and wet conditions.				

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
TEXCLAD® AL EP NLGI 1 NLGI 2	ISO L-XBDHB 1/2 DIN KP 1/2 P-20	-25 up to 150 (200)*	Al- complex	>250		Texclad AL EP 1 and 2 are natural colouring aluminium-complex greases based on mineral oil. These greases are suitable for lubrication of roller and friction bearings under high pressure and high temperatures even under dusty and wet conditions. Especially suitable for mining, sugar, cement and steel industry applications.
TEXCLAD [®] AL HV NLGI 0	ISO-L-XBGHB0 DIN OGPF 0 S-20	-20 up to 200 (250)*	Al- complex	>250		Texclad AL HV 0 is a sprayable aluminium complex grease based on semi-synthetic oils which can be sprayed. It contains very fine graphite. Texclad AL HV 0 is designed for automatic spray lubrication of toothed wheels, gear rings, toothed racks and pinions of any kind under high pressure and temperature operations. It suits for lubrication of rotary furnaces or similar hot lubricating points even under dusty and wet conditions.

Product	Quality level	Operating temp., °C	Thickener type	Dropping point, °C	Performance Claims / Approvals / Recommendations	Description
Polyurea greases						
HIGH TEMP PREMIUM 2 NLGI 2	ISO L- XCFHB 2 DIN KPHC 2 P-30	-30 up to 180 (200)*	polyurea	>240		High Temp Premium is a polyurea EP grease based on synthetic base oils (PAO). It is a high temperature grease for the lubrication of plain and roller bearings and it is recommended in high temperature applications where conventional greases tend to harden.
CHEVRON SRI GREASE NLGI 2	ISO L- XCFIA 2 DIN K 2 N-30	-30 up to 175	polyurea	243	Recommended by: bearing manufacturers electric motor manuf. auto manufacturers For more details please contact our Area Sales Manager.	A high temperature ball and roller bearing grease formulated with ISOSYN® base stocks, a synthetic polyurea ashless organic thickener, and advanced rust and oxidation inhibitors. Recommended for use in antifriction bearings operating at high speeds (10,000 rpm and greater) where silent operations are required.

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