



PRODUCTS





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September 2024

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GENERAL

LENOL proudly offers its customers superior quality marine lubricant products in major ports worldwide. As your dependable partner, LENOL guarantees our customers the finest support possible for your vessels' lubricant requirements. This brochure includes a list of our products and technical details on our products.

Apart from main grade lubricants, LENOL's secondary grade range consists of TITAN, RENOLIN, RENISO, and RENOLIT. This product range is a trademark of FUCHS LUBRICANTS GERMANY GmbH, and is exclusively for marine applications. For further detailed technical information please refer to the corresponding Technical Data sheet (TDS) or Safety Data Sheet (SDS).

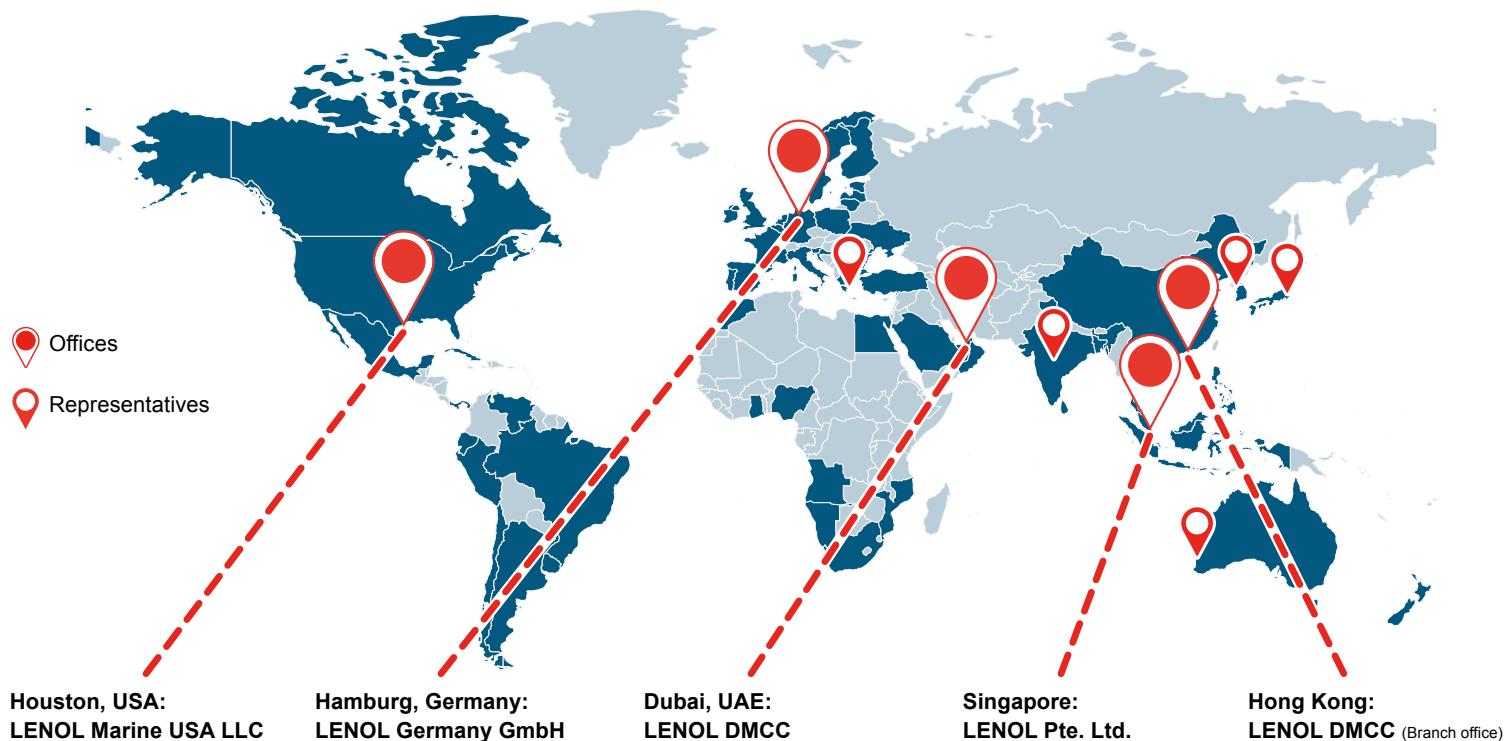
Health, Safety and Environmental Protection

LENOL maintains safe and sustainable work practices in strict compliance with Global Health, Safety and Environment Standards. LENOL is committed to act in a socially responsible manner, to protect the environment and preserve natural resources.

To ensure efficient and safe usage of LENOL lubricants and products, users are required to assess and use the products in a safe manner

whilst complying with all applicable laws and regulations. Safety Data Sheets are available for all products, and can be requested from your LENOL representative. They describe the products in terms of safety in use, handling and transportation. For further information about LENOL products or procedures, please do not hesitate to contact your LENOL Representative or visit our website at www.lenolmarine.com

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MAIN GRADES

	Grade	BN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	SAE	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Marine Cylinder Lubricants									
LENOL CL 140	60	140	980		22		-6	240	<ul style="list-style-type: none"> Marine cylinder lubricants for low-speed engines Excellent deposit control, antiwear properties and scuffing prevention LENOL CL 140, 100 and 70 for operation on HFO and low sulphur fuel oil (LSFO<1.5%S) Short term operation on very low sulphur fuel oil (VLSFO<0.5%S) or ultra low sulphur fuel oil (ULSFO<0.1%S) possible with certain engine designs MAN Cat. I cylinder lubricant for all low-speed two-stroke engines operating on LSFO (<1.5%S), VLSFO (<0.5%S) and ULSFO (<0.1%S) MAN Cat. II cylinder lubricant recommended for MAN B&W two-stroke engines Mark 9 and higher, and for all low-speed two-stroke engines operating on LSFO (<1.5%S), VLSFO (<0.5%S) and ULSFO (<0.1%S) Marine cylinder lubricant for all low-speed two-stroke diesel engines running on VLSFO (<0.5%S) and ULSFO (<0.1%S) including LNG, methanol, ethane and LPG
LENOL CL 100	50	100	960		20		-6	240	
LENOL CL 70	50	70	935		20		-6	240	
LENOL CL 40	50	40	919		19.5		-6	230	
LENOL CLX 40	50	40	915		20		-6	230	
LENOL CLX 20	50	20	903		18.5		-6	230	

	Grade	BN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	SAE	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
System Oil									
LENOL 6 S 30	30	6	891		11.5		-6	220	<ul style="list-style-type: none"> Alkaline marine crankcase lubricant for low-speed marine diesel crosshead engines Outstanding thermal and oxidation stability and detergency

	Grade	BN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	SAE	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Trunk Piston Engine Oils									
LENOL 55 TP 40	40	55	923		14.5		-6	230	<ul style="list-style-type: none"> Trunk piston engine oils for highly rated medium speed diesel engines BN range from BN 15 to BN 55: optimal adaption to the sulphur content of the fuel in use Excellent thermal and oxidation stability, outstanding detergency and dispersancy Exceptional deposit control, especially in oil-cooled piston undercrowns High quality alkaline lubricants recommended for marine trunk piston engines running on ISO 8217 type DMA/DMB/DMC fuels Especially designed for applications requiring a higher level of detergency/dispersancy and liner lacquer control
LENOL 50 TP 40	40	50	919		14.5		-6	230	
LENOL 40 TP 40	40	40	915		14.5		-6	230	
LENOL 30 TP 40	40	30	911		14.5		-6	230	
LENOL 20 TP 40	40	20	901		14.5		-6	230	
LENOL 15 TP 40	40	15	898		14.5		-6	230	
LENOL 30 TP 30	30	30	905		11.5		-6	230	
LENOL 20 TP 30	30	20	899		11.5		-6	230	
LENOL 15 TP 30	30	15	898		11.5		-6	230	
LENOL 10 TPX 40	40	10	891		14.5		-15	230	
LENOL 10 TPX 30	30	10	891		11.5		-15	230	

	Grade	BN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	SAE	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Trunk Piston Engine Oils									
LENOL SHPD 40	40	9	898		13.7		-15	230	<ul style="list-style-type: none"> Premium quality mineral-based monograde engine oils Extended oil change intervals For latest generation high-speed marine and power generation four-stroke turbocharged engines running on distillate fuel with sulphur contents from zero up to 1%wt
LENOL SHPD 30	30	9	898		11.3		-15	220	

SECONDARY GRADES

Mineral Oils

	Grade	BN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	SAE	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Other Engine Oils									
LENOL DD 40	40	7	894	143	15	100	-15	225	<ul style="list-style-type: none"> High quality, low ash, heavy duty, detergent diesel engine oil Specifically for Detroit Diesel two-stroke engines and other engines requiring API-CF SAE 40
LENOL SHPD Ultra 15W-40	15W-40	10	886	104	15.2	135	-30	224	<ul style="list-style-type: none"> Multigrade engine oil for the latest generation of heavy duty four-stroke turbocharged engines Extended time between overhauls API CI-4/SL specified
TITAN Truck SAE 15W-40	15W-40		885	103	14.3	141	-28	237	<ul style="list-style-type: none"> All-season SHPD engine oil with a high alloy ration Optimal for auxiliary/emergency generator engines and lifeboat propulsion API CG-4 specified
TITAN Cargo MC SAE 10W-40	10W-40		876	100	14.5	146	-42	220	<ul style="list-style-type: none"> Long-life oil for high-speed diesel engines Outstanding cold start performance Improves fuel economy
TITAN 2T 100S			876	47.5	8.44		-42	130	<ul style="list-style-type: none"> Fully synthetic high performance two-stroke engine oil Does not leave deposits on the spark plug Best adapted for outboard engines

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Hydraulic Oils									
RENOLIN B 15 HVI	15	0.5	859	15	3.8	151	-45	180	<ul style="list-style-type: none"> Multigrade hydraulic fluids Wide temperature range Suitable for severe load conditions Can be used for general lubrication of bearings and gearboxes requiring a high viscosity index and good load carrying capacity Denison HF0 approved
RENOLIN B 22 HVI	22	0.5	866	22	4.9	156	-45	175	
RENOLIN B 32 HVI	32	0.5	871	32	6.3	152	-48	178	
RENOLIN B 46 HVI	46	0.5	879	46	8.1	149	-45	186	
RENOLIN B 68 HVI	68	0.5	868	68	11	153	-33	240	
RENOLIN B 100 HVI	100	0.5	871	100	13.5	140	-24	240	
RENOLIN B 150 HVI	150	0.5	881	150	17.7	130	-24	260	
Low Temperature Hydraulic Oils									
RENOLIN ZAF 15 LT	15	0.5	855	15	5.5	370	-48	120	<ul style="list-style-type: none"> Multigrade oil for hydraulic systems, bearings and transmissions Excellent low temperature behaviour Extremely high viscosity index
RENOLIN ZAF 32 LT	32	0.5	867	32	9	270	-60	170	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Gear Oils									
RENOLIN CLP 68	68	0.6	886	68	8.7	99	-24	236	<ul style="list-style-type: none"> High performance gear oils with outstanding extreme pressure characteristics and load carrying capacity Recommended for spur, helical and bevel enclosed gears with circulation or splash lubrication Operating temperatures up to 100°C and peaks above 120°C For all applications where CLP oil according to DIN 51517-3 is recommended Meet and exceed all current requirements of gear and bearing manufacturers CKC/CKD according to ISO12925-1
RENOLIN CLP 100	100	0.6	890	100	11.2	98	-24	240	
RENOLIN CLP 150	150	0.6	894	150	14.5	94	-24	250	
RENOLIN CLP 220	220	0.6	896	220	18.9	96	-24	260	
RENOLIN CLP 320	320	0.6	900	320	24	95	-14	255	
RENOLIN CLP 460	460	0.6	901	460	30.4	95	-12	270	
RENOLIN CLP 680	680	0.6	918	680	36.8	88	-10	270	
TITAN Supergear 80W-90		1	890	134	14.4	108	-27	220	<ul style="list-style-type: none"> Mineral universal gear oil for transmission and axle gearboxes for outboard motors SAE 80W-90 classified
Transmission Fluid									
TITAN ATF 4000			862	37.8	7.6	174	-50	190	<ul style="list-style-type: none"> Multipurpose transmission fluid DEXRON III performance

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Turbine Oils									
RENOLIN Eterna 32	32	0.12	842	32	5.6		-15	220	<ul style="list-style-type: none"> New generation of turbine oils For gas, steam, expansion turbines and turbo chargers
RENOLIN Eterna 46	46	0.12	846	46	7.6		-15	220	
RENOLIN Eterna 68	68	0.12	851	68	9.9		-15	230	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Heat Transfer Oils									
RENOLIN Therm 320	32	<0.05	870	43.7	6.5		-12	225	<ul style="list-style-type: none"> High performance heat transfer fluid for closed heat transfer systems with or without forced circulation According to DIN 51522
LENOL Thermo HT	32	<0.05	870	30.5	5.3		-12	210	
LENOL Thermo LT	15	<0.05	840	14	3		-42	185	<ul style="list-style-type: none"> Heat transfer oil with exceptional low temperature properties
LENOL Thermoclean			1050					>160	<ul style="list-style-type: none"> Cleaning additive for heat transfer systems

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Air Compressor Oils									
LENOL RC 68	68		870	68	8.5	93	-20	235	<ul style="list-style-type: none"> VDL air compressor oils for piston and rotation compressors For final compression temperatures up to 220°C Based on special mineral oils According to DIN 51506
RENOLIN 503	68	0.1	878	68	8.6	97	-12	248	
LENOL RC 100	100		887	100	11	93	-20	248	
RENOLIN 504	100	0.1	880	96	10.8	95	-12	255	
LENOL RC 150	150		895	150	14.1	90	-15	258	
RENOLIN 505	150	0.1	888	154	14.4	90	-9	258	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Refrigeration Oils									
RENISO KM 32	32	0.01	881	32	4.9	63	-45	202	<ul style="list-style-type: none"> Special naphthenic refrigeration oils compatible with Ammonia NH₃ (R717) and CFC/HCFC (R12/R22) For open, semi-hermetic and hermetic compressors
RENISO KS 46	46	0.01	895	46	5.8	47	-42	195	
RENISO KC 68	68	0.01	900	68	7.2	45	-39	200	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Gear Oils									
RENOLIN Unisyn CLP 220	220	0.6	852	220	25.7	148	-45	260	<ul style="list-style-type: none"> Fully synthetic gear oils based on polyalphaolefin For applications requiring a long-life CLP-HC type According to DIN 51517-3
RENOLIN Unisyn CLP 320	320	0.6	860	320	35	155	-42	260	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Air Compressor Oils									
RENOLIN Unisyn OL 46	46	0.1	843	46	7.9	146	< -60	260	<ul style="list-style-type: none"> Synthetic PAO compressor oil for flooded or oil injection screw type air compressors
RENOLIN Unisyn OL 68	68	0.1	845	68	10.6	144	< -60	265	
LENOL Syn E 100	100		961	97	9.3	80	-35	274	<ul style="list-style-type: none"> Diester based synthetic oil designed for reciprocating compressors and vacuum pumps
RENOLIN SE 100	100		987	107	10.7	80	-36	268	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Refrigeration Oils									
RENISO Triton SEZ 32	32	0.03	1007	32	6.1	141	-48	240	<ul style="list-style-type: none"> Chlorine-free, polyolester-based refrigeration oils compatible with chlorine-free HFC refrigerants (e.g. R134a, R404a and R410c) Depending on the viscosity, can be used for hermetic, semi-hermetic and open piston compressors as well as screw type and turbo compressors Excellent compatibility with elastomers and all materials used in refrigeration circuits
RENISO Triton SE 55	55	0.03	1009	55	9	143	-51	270	
RENISO Triton SEZ 68	68	0.03	973	65.6	9.5	125	-45	258	
RENISO Triton SEZ 100	100	0.03	965	100	11.8	107	-39	288	
RENISO Triton SE 170	170	0.03	972	173	17.6	111	-24	260	
RENISO Triton SE 220	220	0.01	980	235	20.7	103	-27	285	
RENISO S 68	68	0.01	869	68	6.2		-33	188	<ul style="list-style-type: none"> Alkylbenzene-based synthetic refrigeration oil compatible with chlorine containing refrigerants (e.g. R22, R502, R401A/B, R402A/B), iso-butane (R600a) and propane (R290) RENISO S 68 can also be used for NH₃ (R717)
RENISO SP 100	100	0.01	871	100	7.9		-24	190	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Gas Compressor Oil									
RENOLIN LPG 185	185	0.6	1012	185	29.1	197	-36	280	<ul style="list-style-type: none"> High performance gas compressor oil based on polyalkylene glycol Compatible with hydrocarbon chemical gases (propane, butane, ethylene and mixtures), petroleum gases, natural gases with a high amount of methane and other chemical gases (NH₃, butadiene) Suitable for piston, screw and vane compressors

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Stern Tube Oil									
RENOLIN CLP 220 Plus	220	0.7	899	220	18.9	96	-24	260	<ul style="list-style-type: none"> Emulsifying stern tube oil 95% of load capacity when mixed with 5% water

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Environmentally Acceptable Hydraulic Oils (EAL)									
PLANTOSYN 32 HVI	32	0.55	915	32	6.23	148	-46	220	<ul style="list-style-type: none"> High performance hydraulic and lubricating oils based on saturated synthetic esters Rapidly biodegradable Fully compliant with ISO15380: HEES and OECD-Guideline 301B EU Ecolabel
PLANTOSYN 46 HVI	46	0.55	913	46	8.2	150	-36	280	
PLANTOSYN 68 HVI	68	0.55	916	68	10.55	143	-27	280	

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Environmentally Acceptable Gear Oils (EAL)									
PLANTOGear 100 S	100	0.7	924	100	15.8	135	-33	280	<ul style="list-style-type: none"> High performance synthetic ester-based gear oil Rapidly biodegradable DIN 51517-3 compliant, approved by major gear manufacturers FZG load stage >12 EU Ecolabel
PLANTOGear 150 S	150	0.7	926	150	19.1	145	-30	280	
PLANTOGear 220 S	220	0.7	938	220	26.2	152	-30	280	
PLANTOGear 320 S	320	0.7	943	320	35.1	155	-30	280	

	NLGI Grade	Dropping Point	Temperature Range	Base Oil Viscosity	Color	Thickener	Application
		°C	°C	cSt at 40°C			
Greases							
LENOL Grease CSX 2	2	>280	-20 to +160	200	brown	calcium sulphonate complex	<ul style="list-style-type: none"> Multipurpose grease with high performance concerning water resistance, working stability, EP and AW properties
RENOLIT CXI 2	2	>270	-20 to +160	350	brown	calcium sulphonate complex	
LENOL Grease LX 2/3	2/3	>260	-30 to +160	140	brown	lithium complex	<ul style="list-style-type: none"> For plain and roller bearings under high load in humid atmosphere
RENOLIT LX-PEP 2/3	2/3	>250	-30 to +150	170	green	lithium complex	
LENOL Grease LM 2	2	>190	-30 to +130	200	black	lithium with MoS ₂	<ul style="list-style-type: none"> For plain and roller bearings with extended re-greasing intervals
RENOLIT FLM 2	2	>180	-30 to +140	100	black	lithium with MoS ₂	
RENOLIT EP X1	1	>170	-15 to +120	1050	black	lithium	<ul style="list-style-type: none"> Coupling grease with outstanding performance at high rotation speeds due to exceptional base oil viscosity
LENOL Grease CSX 0	0	>280	-30 to +160	140	brown	calcium sulphonate complex	<ul style="list-style-type: none"> Multipurpose greases with good water and aging resistance, corrosion protection, AW properties and load capacity Easily pumpable in central lubricating systems
RENOLIT CX-EP 0	0	>250	-30 to +140	120	brown	calcium sulphonate complex	
RENOLIT LZR 000	00/000	>160	-40 to +110	43	green	lithium calcium	<ul style="list-style-type: none"> Free-flow adhesive grease for centralized lubrication systems

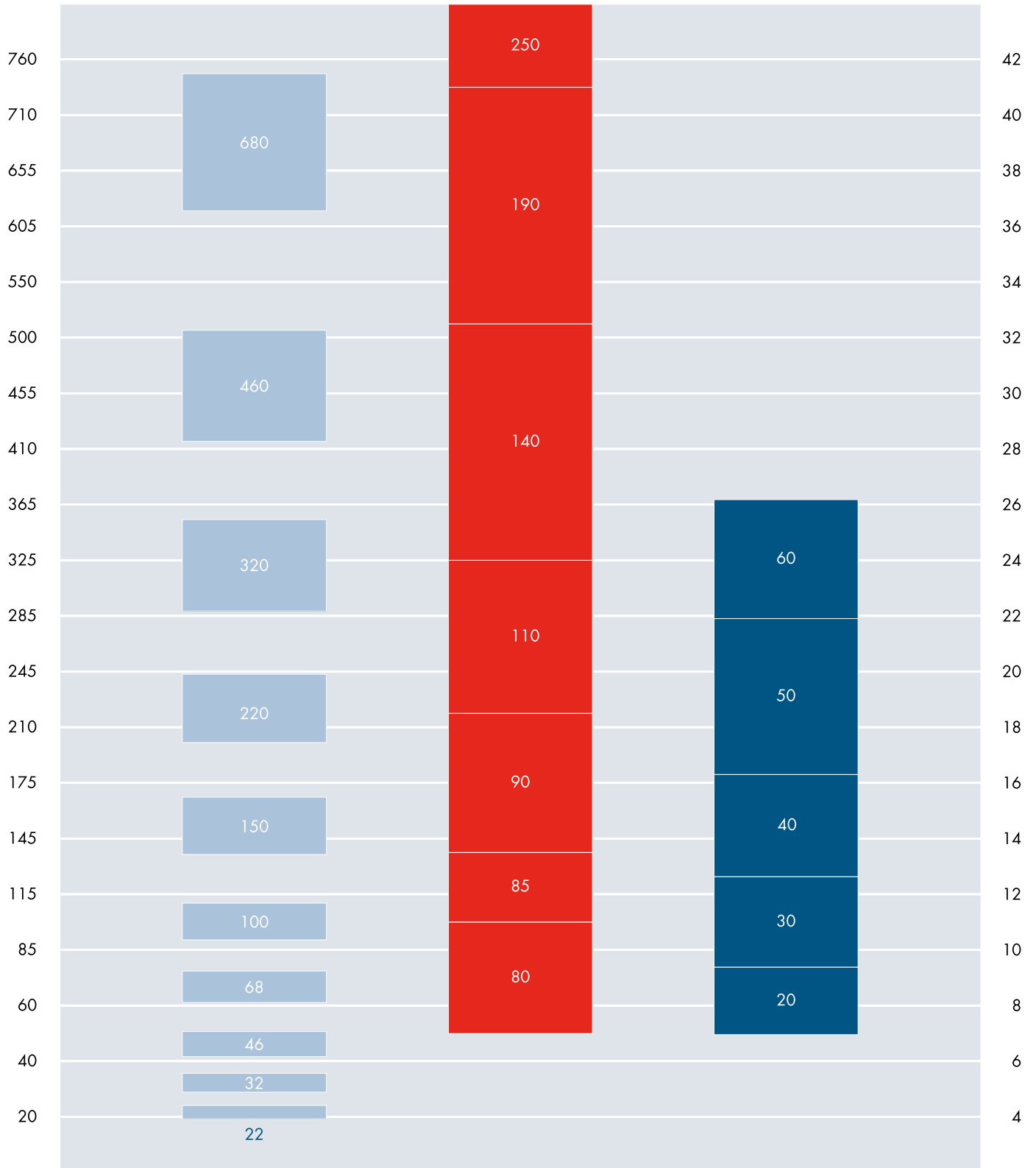
Environmentally Acceptable Greases (EAL)									
LENOL Grease BIO 2	2	>200	-30 to + 120	345	brown	lithium	<ul style="list-style-type: none"> Environmentally acceptable extreme pressure greases based on biodegradable synthetic esters Suitable for a wide range of deck and engine applications (e.g. plain/ roller bearings, central lubricating systems, ropes, open gears) Compliant with US regulations 		
PLANTOGEL 2S (EAL)	2	>170	-40 to + 120	105	white	lithium calcium			
LENOL Grease BIO 0	0	194	-40 to + 80	320	brown	lithium			

	Grade	TAN	Density kg/m ³	Kinematic Viscosity		VI	Pour Point	Flash Point	Application
	ISO VG	mgKOH/g	15°C	cSt at 40°C	cSt at 100°C		°C	COC in °C	
Corrosion Protection & Multi-Purpose Oil									
ANTICORIT DFW 8301			811					>65	<ul style="list-style-type: none"> Barium-free corrosion preventive and dewatering fluid which forms a thin, waxy film For corrosion protection of metal parts, spare parts, tools, etc. Multi-purpose oil offering corrosion protection, penetration and lubrication Good cleaning properties
TC 50 Plus			850					>75	

VISCOSITY CLASSIFICATION

Kinematic Viscosity at 40 °C cSt (mm/s²)

Kinematic Viscosity at 100 °C cSt (mm/s²)



ISO VG Grades

SAE Gear Oil Grades
SAE J306 (06.2005)

SAE Engine Oil Grades
SAE J300 (01.2015)

VISCOSITY-TEMPERATURE DIAGRAM

Kinematic Viscosity mm^2/s (cSt)

