



INDUSTRIAL  
LUBRICANTS



ORLEN OIL is a leading manufacturer and distributor of lubricants with a 20-year tradition. The company is part of the PKN ORLEN Group, the largest player in Central and Eastern Europe.

The systematically developed portfolio of specialist products meets the needs of customers in every branch of industrial production. In-house research and production facilities guarantee the ability to create unique solutions tailored to customers' needs. A comprehensive range of products and services enables the maintenance costs of industrial plants to be optimised.

ORLEN OIL, a company within the Polski Koncern Naftowy ORLEN SA Corporate Group, is involved in the comprehensive production and distribution of lubricants.



With a focus on high quality, it constantly carries out a series of studies and tests to optimise production and ensure high, stable quality for the products it manufactures.
























ORLEN OIL follows regulations and monitors current market trends on an ongoing basis. Recently, it has been rapidly developing its synthetic products while not forgetting its range of mineral and semi-synthetic oils. It offers an advanced range of engine oil technologies, oils for modern industrial transmissions, stationary as well as mobile hydraulic systems, circulating oil systems and bearings for steam, gas and water turbines, machining oils as well as greases.

The company works closely with leading additive manufacturers, research and development centres, manufacturers of industrial machinery and equipment and, above all, with customers. This results in products that create value and excel by meeting the highest user requirements, including increased machine productivity, long-lasting lubrication and reduced environmental impact. The highest quality of the oils is confirmed by the quality specifications and approvals and authorisations of the world's leading machine manufacturers, including Flender, Denison Hydraulics, Siemens, Cincinnati Machine.



***AN EXPERT  
IN YOUR INDUSTRY***



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Product name	Density at 15°C [kg/m³]	Kinematic viscosity at 40°C [mm²/s]	Viscosity index	Flow temperature [°C]	Flash point [°C]	Corrosion effect on Cu plate, 100°C/3h	Quality class
HYDROL BIO HEES EL 46	919,8	47,0	191	-48	300	1	PN-ISO 15380 Table 4
HYDROL BIO HETG EL 46	917,7	47,7	207	-23	306	1	PN-ISO 15380 Table 2
HYDROL POWER L-HV 32	855,9	32,2	186	-39	-	1a	DIN 51524-3 HVLP; ISO 6743-4 HV; ISO 11158 HV
HYDROL POWER L-HV 46	866,8	48,6	180	-39	-	1a	
HYDROL POWER L-HV 68	871,5	68,4	180	-36	-	1a	
HYDROL SYNT PE 46	839,0	43,7	140	-54	258	1a	DIN 51524-3 HVLP; ISO 6743-4 HV; ISO 11158 HV
HYDROL EXTRA L-HV 32	853,9	32,0	158	-42	-	1a	DIN 51524-3 HVLP; ISO 6743-4 HV; ISO 11158 HV
HYDROL EXTRA L-HV 46	878,4	47,0	157	-39	-	1a	
HYDROL EXTRA L-HV 68	884,4	68,6	155	-36	-	1a	
HYDROL ARCTIC L-HV 15	874,4	15,9	330	-63	136	1a	DIN 51524-3 HVLP; ISO 6743-4 HV; ISO 11158 HV
HYDROL ARCTIC L-HV 32	866,0	32,2	263	-56	164	1a	
HYDROL PREMIUM L-HV 15	845,6	16,3	153	-39	191	1a	DIN 51524-3 HVLP; ISO 6743-4 HV; ISO 11158 HV
HYDROL PREMIUM L-HV 22	861,7	21,7	152	-37	195	1a	
HYDROL PREMIUM L-HV 32	867,3	31,6	165	-39	203	1a	
HYDROL PREMIUM L-HV 46	875,6	45,9	148	-34	210	1a	
HYDROL PREMIUM L-HV 68	880,5	65,9	146	-30	221	1a	
HYDROL L-HV 15	856,6	16,0	198	-40	178	1a	DIN 51524-3 HVLP; ISO 6743-4 HV; ISO 11158 HV
HYDROL L-HV 22	862,6	22,2	169	-39	192	1a	
HYDROL L-HV 32	868,2	30,8	155	-35	205	1a	
HYDROL L-HV 46	875,9	44,8	154	-42	209	1a	
HYDROL L-HV 68	880,3	65,0	148	-30	223	1a	
HYDROL L-HV 100	884,3	91,6	148	-30	232	1a	
HYDROL EXTRA HLP-D 32	869,0	31,9	99	-35	216	1a	

PREMIUM - zinc-free oils  
PAO - poly-alpha-olefins

Approvals	Product description
-	Easily biodegradable hydraulic oil produced on the basis of specially selected synthetic esters. Recommended for industrial and mobile hydrostatic hydraulic systems where there is a potential risk of oil leaking into the environment.
-	Easily biodegradable hydraulic oil produced on the basis of a specially selected vegetable oil. Recommended for industrial and mobile hydrostatic hydraulic systems where there is a potential risk of oil leaking into the environment.
Central Mining Institute certificate mark B; Parker Denison HF0, HF1, HF2	Hydraulic oils with a higher viscosity index for lubricating the hydraulic systems of mobile construction, mining and stationary industrial machinery. The DYNAVISR technology developed by EVONIK allows for reduced fuel consumption and reduced energy consumption.
-	Synthetic, zinc-free and ashless hydraulic oil produced on the basis of poly-alpha-olefins (PAO). Recommended for use in heavy-duty power transmission systems and hydraulic drive and control systems where very difficult operating conditions and high ambient temperatures and humidity prevail.
Central Mining Institute certificate mark B; Eaton Vickers Brochure 03-401-2010 (M-2950-S, I-286-S); Parker Denison HF0, HF1, HF2	Hydraulic oils with a high viscosity index and excellent shear resistance. They are mainly intended for lubrication of the hydraulic systems of mobile construction and mining machinery operating in very difficult conditions (working pressure in hydraulic pumps up to 50 MPa), variable temperatures and humidity.
-	Hydraulic oils with excellent low-temperature properties and a very high viscosity index. Intended for use in hydraulic systems operating at extremely low ambient temperatures.
-	Zinc-free hydraulic oils intended for heavy-duty power transmission systems and hydraulic drive and control systems operating under extreme conditions of high pressure and over a wide temperature range.
-	Hydraulic oils intended for use in heavy-duty drive systems, high-pressure fixed and variable displacement piston pumps and precision hydraulic controls and systems. These oils are characterised by a high level of antiwear properties and additionally improved viscosity-temperature properties compared to L-HM hydraulic oils.
-	High-quality, zinc-free hydraulic oil with cleaning properties. The product is intended for use in stationary and mobile hydraulic systems operating in variable working conditions under high pressure and high thermal load. The oil is especially dedicated to continuous operation and where there is a danger of contamination of the system with water or condensed steam.





Product name	Density at 15°C [kg/m³]	Kinematic viscosity at 40°C [mm²/s]	Viscosity index	Flow temperature [°C]	Flash point [°C]	Corrosion effect on Cu plate, 100°C/3h	Quality class
HYDROL PREMIUM HLP-D 32	874,1	31,1	98	-34	215	1	DIN 51524-2 HLPD; ISO 6743-4 HM; ISO 11158 HM
HYDROL PREMIUM HLP-D 46	879,5	45,9	98	-27	225	1	
HYDROL PREMIUM HLP-D 68	883,5	68,3	96	-25	230	1	
HYDROL PREMIUM HVLP-D 46	877,5	47,4	177	-42	230	1	DIN 51524-3 HVLPD; ISO 6743-4 HV; ISO 11158 HV
HYDROL PREMIUM L-HM 22	864,3	22,5	102	-34	194	1a	DIN 51524-2 HLP; ISO 6743-4 HM; ISO 11158 HM
HYDROL PREMIUM L-HM 32	874,4	31,8	102	-28	210	1a	
HYDROL PREMIUM L-HM 46	879,0	45,6	102	-27	212	1a	
HYDROL PREMIUM L-HM 68	884,2	65,0	102	-26	224	1a	DIN 51524-2 HLP; ISO 6743-4 HM; ISO 11158 HM
HYDROL L-HM/HLP 10	853,9	10,1	101	-36	162	1a	
HYDROL L-HM/HLP 15	860,8	15,1	102	-35	180	1a	
HYDROL L-HM/HLP 22	865,3	21,9	102	-35	195	1a	
HYDROL L-HM/HLP 32	873,5	30,4	103	-30	211	1a	
HYDROL L-HM/HLP 46	879,5	45,3	104	-30	227	1a	
HYDROL L-HM/HLP 68	885,6	66,8	100	-27	237	1a	
HYDROL L-HM/HLP 100	891,0	99,7	96	-26	247	1a	
HYDROL L-HM/HLP 150	893,8	138,6	95	-24	269	1a	
HYDROL L-HL 15	858,4	14,4	100	-35	180	1a	
HYDROL L-HL 22	866,6	21,9	103	-33	197	1a	
HYDROL L-HL 32	874,1	31,0	103	-30	218	1a	
HYDROL L-HL 46	880,1	45,5	101	-28	224	1a	
HYDROL L-HL 68	884,8	66,4	98	-27	230	1a	
HYDROL L-HL 100	888,1	94,7	93	-24	241	1a	
HYDROL L-HL 150	892,6	136,9	93	-24	247	1a	DIN 51524-2 HLPD; ISO 6743-4 HM; ISO 11158 HM
HYDROL HLP-D 22	867,1	22,1	106	-33	217	1	
HYDROL HLP-D 32	873,8	30,9	104	-33	210	1	
HYDROL HLP-D 46	880,7	45,7	102	-30	225	1	
HYDROL HLP-D 68	886,2	67,6	99	-30	232	1	NO-91-A202:2019 STANAG 3748:2015 MIL-PRF-5606J
ORLEN OIL H-515	869,9	13,1	390	-63	93	1 (135stC/ 72h)	
HYDROL HLPT 46	877,5	42,7	123	-39	220	1	DIN 51524-2 HLP; ISO 6743-4 HM; ISO 11158 HM
HYDROL HVLP-D 46	874,5	46,3	157	-39	230	1	DIN 51524-3 HVLPD; ISO 6743-4 HV; ISO 11158 HV
HYDROL SPECIAL 46	875,6	48,8	123	-39	220	1	DIN 51524-2 HLP; ISO 6743-4 HM; ISO 11158 HM
HYDROL SPECIAL 68	883,8	69,3	115	-42	225	1	
O.OIL OTHP3 ISO VG 32	872,0	30,9	122	-42	202	1	DIN 51524-2 HLP; ISO 6743-4 HM; ISO 11158 HM

PREMIUM - zinc-free oils  
PAO - poly-alpha-olefins

Approvals	Product description
-	Zinc-free hydraulic oil with cleaning properties. The product is intended for use in stationary and mobile hydraulic systems operating in variable working conditions under high pressure and high thermal load. The oil is especially dedicated to continuous operation and where there is a danger of contamination of the system with water or condensed steam.
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Eaton Vickers Brochure 03-401-2010 (M-2950-S, I-286-S)	Zinc-free hydraulic oils intended for heavy-duty power transmission systems and hydraulic drive and control systems operating under extreme conditions of high pressure and over a wide temperature range.
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Central Mining Institute certificate mark B	
Central Mining Institute certificate mark B; Parker Denison HF0, HF1, HF2	Hydraulic oils intended for heavy-duty power transmission and hydraulic drive and control systems, i.e. hydraulic transmissions, regulating and controlling mechanisms and other similar equipment, where difficult operating conditions and increased ambient temperatures and humidity prevail.
Central Mining Institute certificate mark B	
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Central Mining Institute certificate mark B	Hydraulic oils are intended for use in low- and medium-duty power transmission systems and hydraulic drive and control systems of hydrostatic drive equipment operating under moderate temperature conditions.
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Schuler - Müller Weingarten DT55006	Hydraulic oils with washing properties, intended for use in various types of stationary and mobile hydraulic systems of machines and devices operating under normal and heavy operating conditions, especially continuously and where there is a danger of the system becoming contaminated with water or condensed steam.
-	Hydraulic oil for aviation and ground technology. The product is intended for use in hydraulic systems, shock absorber assemblies and hydraulic dampers of aircraft and hydraulic systems of ground technology.
-	Hydraulic oil intended for heavy-duty power transmission and hydraulic drive and control systems, i.e. hydraulic transmissions, regulating and controlling mechanisms and other similar equipment, where difficult operating conditions and increased ambient temperatures and humidity prevail. Product with enhanced physical and chemical parameters.
-	Hydraulic oil with cleaning properties and a high viscosity index. Product is intended for stationary and mobile hydraulic systems of machinery and equipment operating in normal and heavy-duty conditions with a risk of contamination of the system with water or condensed steam. It can be used on construction machinery operating in high air pollution.
-	Hydraulic oils with improved oxidation resistance. Intended for lubricating power transmission systems, hydraulic drive and control and regulation mechanisms, hydraulic transmissions. The products have been developed for use in stationary and mobile industrial machinery, vehicles, construction and mining machinery.
Meets the requirements of: Parker Denison HF0, HF1, HF2	Mineral hydraulic oil intended for stationary and mobile machines, buses, forklifts, trucks and construction machinery with automatic transmission. Can also be used as HM hydraulic fluid.



Table Viscosity classification of industrial oils according to ISO 3448

Viscosity class in accordance with ISO 3448	Permissible kinematic viscosity range at 40°C for a given oil class [mm <sup>2</sup> /s]
2	1,98 - 2,42
3	2,88 - 3,52
5	4,14 - 5,06
7	6,12 - 7,48
10	9,00 - 11,0
15	13,5 - 16,5
22	19,8 - 24,2
32	28,8 - 35,2
46	41,4 - 50,6
68	61,2 - 74,8
100	90 - 110
150	135 - 165
220	198 - 242
320	288 - 352
460	414 - 506
680	612 - 748
1000	900 - 1100
1500	1350 - 1650

Table Classification of industrial oils according to ISO and DIN

ISO 6743/4	DIN 51 524	Composition	Application
HL	HL	Mineral oils with improved anti-corrosion and antioxidant properties.	Hydraulic oils are intended for use in low- and medium-duty power transmission systems and hydraulic drive and control systems of hydrostatic drive equipment operating under moderate temperature conditions.
HM	HLP	HL oils with improved anti-wear properties.	Hydraulic oils intended for heavy-duty power transmission and hydraulic drive and control systems, i.e. hydraulic transmissions, regulating and controlling mechanisms and other similar equipment, where difficult operating conditions and increased ambient temperatures and humidity prevail.
-	HLPD	Mineral oils with anti-wear, anti-oxidation and anti-corrosion additives. They contain cleaning and dispersing additives.	For use in various types of stationary and mobile hydraulic systems on machinery and equipment operating under normal and heavy-duty conditions, where there is a risk of contamination of the system with water or condensed steam.
HV	HVLP	HM oils with improved viscosity-temperature properties.	Hydraulic oils intended for use in heavy-duty drive systems, high-pressure fixed and variable displacement piston pumps and precision hydraulic controls and systems.
HEES	-	Synthetic esters.	Biodegradable hydraulic oils recommended for industrial and mobile hydrostatic hydraulic systems where there is a potential risk of the oil leaking into the environment.
HETG	-	Triglycerides.	

Product name	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Water content by distillation	pH of emulsion	Approvals	Product description
<b>HYDROKOP SYNETIC</b>	80,0	52	7 to 10	Safety certificate "B" No. B/2348/IV/2022. Approval for use in mining.	Emulsifying concentrate intended for the production of micro-emulsions with a concentration of 0.5-2 % (m/m) to be used in the mining industry as flame-retardant HFAE hydraulic fluid using waters with a total hardness of up to 750 mg CaCO <sub>3</sub> /l (42°n).
<b>HYDROKOP SEMISYNETIC</b>	52,0	60	8 to 10	Safety certificate "B" No. B/2538/II/2021. Approval for use in mining.	Microemulsion emulsifying concentrate intended for the production of micro-emulsions with a concentration of 0.5-2 % (m/m) to be used in the mining industry as flame-retardant HFAE hydraulic fluid using waters with a total hardness of up to 750 mg CaCO <sub>3</sub> /l (42°n).

Product name	Density at 20°C [g/ml]	Crystallisation temperature, max. [°C]	Flow temperature [°C]	Approvals	Product description
<b>KONHYDR T</b>	1,076	-35	107	-	Product intended for the transport and temporary corrosion protection of hydraulic power equipment whose components are made of steel, copper, zinc, brass and aluminium. The liquid can be used as a working medium in refrigeration systems and as a liquid for sprinkling the floors and sides of coal wagons in winter to prevent coal from freezing and caking.



## Hydraulic-transmission oils

Product name	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Viscosity index	Flow temperature [°C]	Flash point [°C]	Resistance to foaming, 1st sequence [ml/ml]	Quality class	Approvals	Product description
<b>GALKOP 46</b>	882,3	46,8	100	-26	221	0/0	DIN 51517-3 CLP; DIN 51524-3 HLP	Central Mining Institute certificate mark B	Hydraulic-transmission oils recommended for lubricating hydraulic systems and mechanical transmissions in the mining industry and industrial machines.
<b>GALKOP 68</b>	887,6	70,6	100	-25	241	0/0			
<b>GALKOP 100</b>	889,2	98,6	97	-24	257	0/0			
<b>GALKOP 150</b>	892,9	151,7	95	-18	260	0/0			
<b>TRANSOL V 32</b>	869,5	32,3	107	-36	218	20/0	DIN 51517-3 CLP; DIN 51524-2 HLP	Voith Turbo 3625-006058; Voith Turbo 3625-006072; Voith Turbo 3625-006073; Voith Turbo 3625-008426;	Hydraulic-transmission oil for industrial stationary clutches and hydrodynamic transmissions of heavy-duty machinery.



Product name	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Viscosity index	Flow temperature [°C]	Flash point [°C]	Corrosion effect on Cu plate, 100°C/3h	FZG	Quality class	Meets the requirements of	Product description
TRANSGEAR PAG 150	998,7	152,8	201	-30	>260	1	>13	DIN 51517-3 CLP	David Brown Typ G	Synthetic industrial transmission oils are produced on the basis of polyalkylene glycols. Oils intended for heavy-duty mechanical transmissions of industrial equipment operating at temperatures in excess of 200°C.
TRANSGEAR PAG 220	100,9	217,7	174	-30	>260	1	>13			
TRANSGEAR PAG 320	100,8	329,2	198	-30	>260	1	>13			
TRANSGEAR PAG 460	100,6	480,7	225	-28	>260	1	>13			
TRANSGEAR PAO 150	852,9	140,4	168	-51	258	1	>12	DIN 51517-3 CLP; ISO 6743-6 CKD/CKS/CKT; ISO 12925-1 CKD/CKS/CKT	Central Mining Institute certificate mark B	Synthetic industrial transmission oils manufactured on the basis of poly-alpha-olefins (PAO) and esters. Products intended for various types of heavy-duty transmissions in industrial machinery and equipment exposed to micropitting, operating at temperatures up to 180°C.
TRANSGEAR PAO 220	881,3	206,5	163	-39	236	1	>12			
TRANSGEAR PAO 320	858,0	326,0	176	-45	274	1	>12			
TRANSGEAR PE-150	876,1	147,8	160	-39	240	1	>12	DIN 51517-3 CLP; ISO 12925-1 CKD; ANSI/AGMA 9005-F16 US Steel 224	Has the approval of: Flender T7300, Rev.16; Central Mining Institute certificate mark B	Synthetic industrial transmission oils. Products intended for various types of heavy-duty transmissions in industrial machinery and equipment exposed to micropitting, operating at temperatures up to 180°C.
TRANSGEAR PE-220	883,9	216,3	163	-39	232	1	>12			
TRANSGEAR PE-320	891,7	318,2	169	-39	238	1	>12			
TRANSGEAR PE-460	898,1	449,2	166	-36	238	1	>12			
TRANSOL SP-68	885,1	68,1	101	-28	223	1	12	DIN 51517-3 CLP; ISO 6743-6 CKD; ISO 12925-1 CKD	AGMA 9005-E02; U.S. Steel 224; David Brown S1.53.101	Industrial transmission oils, manufactured from selectively refined mineral oils and an EP - Extreme Pressure - type additive package. Products intended for heavy-duty mechanical transmissions of industrial equipment operating at temperatures up to 120°C.
TRANSOL SP-100	890,3	99,8	100	-27	230	1	12			
TRANSOL SP-150	894,2	154,4	99	-24	232	1	12			
TRANSOL SP-220	897,8	224,6	97	-23	260	1	12			
TRANSOL SP-320	900,6	320,9	95	-18	265	1	12			
TRANSOL SP-460	903,1	467,5	95	-17	265	1	12			
TRANSOL SP-680	905,6	681,0	94	-15	264	1	12			
TRANSOL SP-1000	905,7	1036,0	94	-12	265	1	12			
TRANSOL CLP 68	886,0	67,1	102	-28	230	1	12	DIN 51517-3 CLP; ISO 6743-6 CKC; ISO 12925-1 CKC	AGMA 9005-E02; U.S. Steel 224	Industrial transmission oils, manufactured from selectively refined mineral oils and an EP - Extreme Pressure - type additive package. Products intended for heavy-duty mechanical transmissions of industrial equipment operating at temperatures up to 120°C.
TRANSOL CLP 100	889,9	99,0	98	-27	233	1	12			
TRANSOL CLP 150	893,9	157,6	99	-27	236	1	12			
TRANSOL CLP 220	897,9	221,9	95	-24	263	1	12			
TRANSOL CLP 320	900,9	320,2	96	-21	261	1	12			
TRANSOL CLP 460	904,6	456,4	94	-17	260	1	12			
TRANSOL CLP 680	904,3	671,0	95	-15	259	1	12			
TRANSOL 68	885,0	68,0	99	-27	229	1	12	DIN 51517-3 CLP; ISO 6743-6 CKC; ISO 12925-1 CKC	-	Industrial transmission oils, manufactured from selectively refined mineral oils and an EP - Extreme Pressure - type additive package. Products intended for heavy-duty mechanical transmissions of industrial equipment operating at temperatures up to 100°C.
TRANSOL 100	890,1	97,9	96	-25	230	1	12			
TRANSOL 150	894,0	158,8	96	-24	235	1	12			
TRANSOL 220	897,8	224,6	95	-24	260	1	12			
TRANSOL 320	901,3	317,2	95	-15	261	1	12			
TRANSOL 460	904,6	471,5	94	-15	261	1	12			
TRANSOL 680	904,6	676,5	95	-15	260	1	12			

EP - Extreme Pressure



Product name	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Viscosity index	Flash point in open cup [°C]	Flow temperature [°C]	Quality class	Product description
<b>CORALIA PAG 46</b>	42,5	190	226	-48	ISO 6743-3; ISO L-DGC	Synthetic oil on the basis of water-insoluble polyalkylene glycols intended for lubricating screw compressors compressing natural gas, LPG, and other hydrocarbon gases operating under heavy-duty conditions. CORALIA PAG 46 oil is not miscible with mineral oils or other synthetic oils and cannot be used to top up oil in these systems, or vice versa. When replacing previously used mineral/synthetic compressor oil with CORALIA PAG 46 oil, an oil change operation must be carried out in conjunction with cleaning and flushing of the compressor lubrication system.
<b>CORALIA PAG 85</b>	89,4	216	304	-46	ISO 6743-3; ISO L-DGC	Synthetic oil based on water-soluble polyalkylene glycols for lubricating reciprocating and rotary compressors for natural gas, LPG and other hydrocarbon gases. CORALIA PAG 85 oil is not miscible with mineral oils or other synthetic oils and cannot be used to top up oil in these systems, or vice versa. When replacing previously used mineral/synthetic compressor oil with CORALIA PAG 85 oil, an oil change operation must be carried out in conjunction with cleaning and flushing of the compressor lubrication system.
<b>CORALIA PAG 150</b>	146,3	207	260	<-40	ISO 6743-3; ISO L-DGC	Synthetic oil based on water-insoluble polyalkylene glycols. CORALIA PAG 150 oil is not miscible with mineral oils or other synthetic oils and cannot be used to top up oil in these systems, or vice versa. When replacing previously used mineral/synthetic compressor oil with CORALIA PAG 150 oil, an oil change operation must be carried out in conjunction with cleaning and flushing of the compressor lubrication system. The product is suitable for both rotary and reciprocating compressors where the oil is in constant contact with process gases.
<b>CORALIA PE 32</b>	32,4	-	-	-56	ISO 6743-3; ISO L-DAJ	Synthetic oils (based on polyalphaolefins) intended for lubricating rotary, vane and screw air compressors operating under heavy-duty conditions.
<b>CORALIA PE 46</b>	45,2	-	-	-54		
<b>CORALIA PE 68</b>	62,2	-	-	-48		
<b>CORALIA HC 100</b>	101,8	-	236	-37	ISO 6743-3; ISO L-DAA, DAG; DIN 51506 VDL	Piston and rotary air compressor oils for spray- and splash-lubricated air compressors intended for normal and heavy-duty operating conditions.
<b>CORALIA HC 150</b>	136,4	-	248	-34		
<b>CORALIA ST 32</b>	33,6	-	-	-36	ISO 6743-3; ISO L-DAA; L-DAB, DAG; DIN 51506 VDL	Oils for rotary air compressors, rotary vane and screw compressors with or without oil injection, operating under medium conditions. The products are used in circulating oil systems integrated into a transmission lubrication system and systems integrated into a turbine or compressor.
<b>CORALIA ST 46</b>	47,4	-	-	-33		
<b>CORALIA T 32</b>	30,9	-	214	-12	ISO 6743-3; ISO L-DAH; ISO 6743-5 L-TSE, L-TGE; DIN 51524 part 1 L-HL	Oils intended for lubricating rotary air compressors operating in medium conditions. It can also be used as a hydraulic fluid in turbine regulation systems and to lubricate circulating systems of steam, gas and water turbines.
<b>CORALIA T 46</b>	41,7	-	232	-9		
<b>CORALIA VDL 32</b>	30,8	-	-	-	ISO 6743-3; ISO L-DAA, L-DAB; DIN 51506 VDL	Oils intended for lubricating reciprocating, screw (with or without oil injection) and vane (with oil injection) air compressors operating in medium conditions.
<b>CORALIA VDL 46</b>	44,5	-	-	-12		
<b>CORALIA VDL 68</b>	64,7	-	-	-		
<b>CORALIA VDL 100</b>	104,4	-	-	-		
<b>CORALIA VACUUM</b>	103,8	-	280	-10**	-	Oil intended for use in rotary vacuum pumps.
<b>CORALIA L-DAB 68</b>	64,2	97	123	-24	ISO 6743-3; ISO L-DAB	Oils intended for lubrication of reciprocating air compressors and rotary vane compressors, drip-lubricated, with medium operating conditions.
<b>CORALIA L-DAB 100</b>	96,3	92	256	-18		
<b>CORALIA L-DAB 150</b>	141,4	91	276	-12		
<b>CORALIA L-DAB 320</b>	320,9	92	304	-9		
<b>CORALIA L-DAB 460</b>	476,1	93	314	-6		
<b>CORALIA L-DAA 46</b>	44,7	100	223	-12	ISO 6743-3; ISO L-DAA	Oils intended for lubrication of reciprocating air compressors and rotary vane compressors, drip-lubricated, with light operating conditions.
<b>CORALIA L-DAA 68</b>	68,0	97	248	-12		
<b>CORALIA L-DAA 100</b>	101,4	93	243	-12		
<b>CORALIA L-DAA 150</b>	147,4	89	272	-12		

\*\* Solidification temperature [°C]

Product name	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Flash point in open cup [°C]	Flow temperature [°C]	Quality class	Application
<b>FRIGOL POE 68</b>	68,3	272	-42	ISO 6743-3; ISO L-DRD	Synthetic oils (polyester-based) intended for use in refrigeration compressors and air-conditioning units with HFC, HCFC refrigerants.
<b>FRIGOL POE 100</b>	99,5	262	-33		
<b>FRIGOL M 68</b>	66,4	202	-35	ISO 6743-3; ISO L-DRE	Oil intended for lubrication of all types of refrigeration compressors operating with refrigerants of the CFC (e.g. R12), HCFC (e.g. R22) and ammonia group.

Product name	Kinematic viscosity at 50°C [mm <sup>2</sup> /s]	Flash point in open cup [°C]	Solidification point [°C]	Quality class	Application
<b>FRIGOL TZ-13</b>	13,4	176	-50	PN-C-96072:1974 TZ-13	Oils intended for lubricating ammonia refrigeration compressors, e.g. two-stage compressors with a circulating lubrication system.
<b>FRIGOL TZ-19</b>	26,8	228	-34	PN-C-96072:1974 TZ-19	
<b>FRIGOL TZ-28</b>	29,5	230	-34	PN-C-96072:1974 TZ-28	
<b>FRIGOL WZ</b>	31,2 *	164	-45	PN-C-96072:1974 WZ	Oil intended for lubrication of ammonia and acid-carbon refrigeration compressors with evaporator temperatures up to -45°C, e.g. single-stage, horizontal, slow-running compressors.

\* Kinematic viscosity at 20°C  
**PAG** - polyalkylene glycol  
**POE** - polyesters





Product name	Density at 15°C [kg/m³]	Kinematic viscosity at 40°C [mm²/s]	Kinematic viscosity at 100°C [mm²/s]	Viscosity index	Flow temperature [°C]	Flash point [°C]
VELOL P 150	878,1	152,9	15,5	102	-33	280
VELOL P 220	885,6	228,9	19,9	101	-27	284
VELOL M 220	896,2	220,2	18,2	91	-12	272
VELOL M 460	902	475	30,6	93	-15	315
VELOL RC 32	875,7	32,9	-	101	-21	215
VELOL RC 46	881,9	47,2	-	101	-18	217
VELOL RC 68	884,5	64,6	-	99	-21	224
VELOL RC 100	887,9	98,4	-	98	-15	243
VELOL RC 220	896,2	216,8	-	96	-18	252
VELOL RC 320	900,4	315,3	-	92	-12	255
VELOL 9Q	844,2	10,0 *	-	-	-44	146
VELOL 19	856,6	20,2 *	-	-	-43	168
VELOL 8	866,9	12,2	-	100	-12	176
VELOL 10	864,2	21,1	-	100	-27	196
VELOL 15	874,3	31,5	-	102	-24	222
VELOL 20	879,2	45,4	-	99	-15	222
VELOL 50	888,1	99,3	-	91	-24	264
VELOL 60	891,9	115,6	-	93	-15	232
L-AN 10	853,4	10,3	2,7	101	-18	154
L-AN 15	850,4	16,2	3,6	110	-15	172
L-AN 22	863,2	21,1	4,2	99	-15	210
L-AN 32	875,1	31,7	5,3	101	-12	224
L-AN 46	879,4	45,4	6,6	98	-12	225
L-AN 55	883,0	58,1	-	97	-9	244
L-AN 68	883,6	66,4	8,4	97	-12	240
L-AN 100	889,6	98,4	10,9	95	-10	258
L-AN 150	892,0	145,1	13,8	90	-10	276
L-AN 15Z	853,8	15,8	-	-	-33	-
L-AN 46Z	880,8	48,1	-	-	-30	-
L-AN 68Z	885,5	66,2	-	-	-24	-
L-AN Z 320	899,6	328,5	-	-	-18	281

\* Kinematic viscosity at 20°C [mm²/s]

Quality class	Meets the requirements of	Product description
DIN 51502 C	DIN 51517-1 C; DIN 51517-2 CL	Circulating oils characterised by very good oxidation resistance and good water release properties. The products are compatible with SRE-NBR 28/SX type seals and are used in machine circulation systems, low and medium duty enclosed transmissions and light duty, reciprocating, rotary, vane air compressors.
-	-	Fluid friction bearing oil for large metallurgical units in the sheet rolling process. In addition, it can be used as a non-emulsifying, refined, high-quality machine oil. The product meets MORGOL's basic requirements
ISO 6743-13 GB; DIN 51502 CG	Fives Cincinnati P-53 - Fives Cincinnati P-47 - Fives Cincinnati P-50 -	Oils for all types of slideways and, in particular, for lubricating horizontal slideways operating at moderate temperatures and under moderate to medium loads. They guarantee proper slide operation with particular emphasis on proper friction characteristics and the elimination of the "stick-slip" phenomenon.
-	-	Machine oils for through- and bath lubrication of high-speed textile machine components, machine tools and other precision equipment components in accordance with lubrication instructions. They can also be used for machining metals: steel, brass, e.g. turning, milling, threading, etc.
ISO 6743-1 AN	-	Oils used for light- and medium-duty rotating machine parts such as rolling and plain bearings, guides, spindles. They can also be used in washing and rinsing processes for mechanical components of machines and tanks.
ISO 6743-1 AN; DIN 51502 AN	DIN 51501	Machine oils are intended for light- to medium-duty operating elements of industrial machinery and equipment, such as rolling and sliding bearings, guides, mechanical transmissions, spindles and auxiliary friction nodes.  Low-solidifying machine oils intended for light- to medium-duty operating elements of industrial machinery and equipment, such as rolling and sliding bearings, guides, mechanical transmissions, spindles and auxiliary friction nodes.

Product name	Density at 15°C [kg/m³]	Kinematic viscosity at 50°C [mm²/s]	Kinematic viscosity at 100°C [mm²/s]	Solidification point [°C]	Flash point [°C]	Acid value [mg KOH/g]
GREASED MACHINE OIL MN-11	896	82,2	-	-13	292	0,15
GREASED MACHINE OIL MN-15	898,4	111,2	-	-13	286	0,02
CYLINDER OIL CL-17 (PN-240)	901,6	-	28,1	-8	304	0,03
CYLINDER OIL CL-30 (PP-280)	902,2	-	43,0	-6	324	0,03
CYLINDER OIL CL-40 (PW-300)	906,1	-	52,6	-6	326	0,05
CYLINDER OIL P 28	904,0	-	29,4	-6	308	-
CYLINDER OIL B 28	902,8	-	31,3	-6	325	-
AXLE OIL U	886,1	46,9	-	-27	253	-

EP - Extreme Pressure  
AW - Antiwear

Standards	Product description
PN-56/C-96074	Greased machine oils are a mixture of mineral oils with oxidised vegetable oil. They are used for lubricating: steam engine bearings of rolling stock, bearings exposed to contact with water, with which greased machine oils form a permanent lubricating emulsion, and machine bearings exposed to higher specific loads.
PN-61/C-96095	Cylinder oils are intended for lubricating cylinders, shunting parts and glands of steam engines. The main function of these oils is to prevent ring and cylinder wear and to seal spaces operating at high temperatures and with steam.
-	
PN-61/C-96097	Oil primarily intended for lubricating sliding bearings in steam locomotives, rail and tramway cars.



Product name	Density at 15°C [kg/m³]	Kinematic viscosity at 40°C [mm²/s]	Viscosity index	Flow temperature [°C]	Flash point [°C]	Corrosion effect on Cu plate, 100°C/3h	Oil air-release capacity at 50°C [min.]	RPVOT (oxidation test) [min.]
TURBINEX POWER TG PREMIUM 32	857,3	31,9	115	-18	212	1	2,7	1520
TURBINEX POWER TG PREMIUM 46	857,3	46,6	113	-18	244	1	2,7	1447
TURBINEX TG PREMIUM 32	842,5	31,6	132	-24	244	1	2,1	>2300
TURBINEX TG PREMIUM 46	845,6	43,6	130	-21	250	1	2,5	>2300
TURBINEX TG 32	877,5	32,6	96	-15	218	1	2	>1300
TURBINEX TG 46	879,0	43,4	98	-12	225	1	2,5	>1300
TURBINEX TU 32	877,0	32,3	96	-12	222	1	2,4	>1000
TURBINEX TU 46	878,7	42,9	96	-12	232	1	2,7	>1000
TURBINEX TU 68	884,0	61,9	96	-12	248	1	4	>1000



Quality class	Approvals	Opis produktu
DIN 51515 part 1; DIN 51515 part 2; ISO 8068	<b>Meets the requirements of:</b> General Electric HTGD 90117 AC, Siemens 901305, 901304, GEK 107395A Skoda Power, BS 489	Turbine oils recommended for the lubrication and cooling of gas and steam turbine bearings, gas-steam turbines operating in the CCGT combined cycle, also equipped with gears. Oils intended for turbine systems where elevated operating temperatures and pressures are present. They can also be used as hydraulic fluids in turbine regulation systems and to lubricate, among other things, marine turbochargers of main and auxiliary engines fuelled by exhaust gas.
	MAN TED 1000454696 Rev.03 <b>Meets the requirements of:</b> Siemens 901305, 901304, GE HTGD 90117, GEK 107395A Skoda Power, BS 489	
DIN 51515 part 1; DIN 51515 part 2; ISO 8068	Alstom HTGD 90117; Siemens TLV 901304; Siemens TLV 901305; Skoda Power	
	Alstom HTGD 90117; Siemens TLV 901304; Siemens TLV 901305; Skoda Power	
DIN 51515 part 1; DIN 51515 part 2; ISO 8068	Alstom HTGD 90117; Siemens TLV 901304; Siemens TLV 901305, Skoda Power	
	Siemens TLV 901304; Siemens TLV 901305; Skoda Power. Meets the requirements of: Alstom HTGD 90117	
DIN 51515 part 1; DIN 51515 part 2; ISO 8068	Alstom HTGD 90117; Siemens TLV 901304; Siemens TLV 901305; Skoda Power	Turbine oils recommended for the lubrication and cooling of bearings in steam and water turbines also equipped with gears. The oils can be used in not particularly strained gas turbines under normal operating conditions. They can also be used as hydraulic fluids in turbine regulation systems and to lubricate, among other things, marine turbochargers of main and auxiliary engines fuelled by exhaust gas.
	Siemens TLV 901304; Siemens TLV 901305; Skoda Power. Meets the requirements of: Alstom HTGD 90117	
	-	

Product name	Density at 15°C [kg/m³]	Kinematic viscosity at 40°C [mm²/s]	Kinematic viscosity at 50°C [mm²/s]	Flow temperature [°C]	Flash point [°C]	Corrosion effect on Cu plate, 100°C/3h	Deemulsification number [s]	Standards	Product description
TURBINE OIL T-30	881,0	49,9	30,8	-13	240	1	120	ZN-66/MPCh/NF-104	Turbine oils for the circulating bearing lubrication of steam turbines, water turbines and geared turbine sets in the case of a common oil circuit.



Product name	Kinematic viscosity at 100°C [cSt]	Flow temperature [°C]	Flash point in open cup [°C]	Total alkaline number TBN [mg-KOH/g]	CCS structural viscosity at -20°C	Sulphated ash [(%/m/m)]	Approvals	Product description
DELGAS PREMIUM L 40	13,9	-24	276	4,6	-	0,53	-	Oil intended for use in various types of stationary, four-stroke gas engines (including Jenbacher) naturally aspirated and turbocharged, fuelled with methane-rich gases such as landfill gas, mine gas and biogas. It can be used in three-way and selective catalyst systems.
DELGAS L 40	13,8	-27	272	5,7	-	0,46	MWM TR-0199-99-2105; INNIO Jenbacher TA 1000-1109, series 2, 3, 4 (version A and B) and 6 (version C and E), class A gases; Bergen Engines AS: B35:40, C26:33 and K-type engines, for medium-speed natural gas engines	Oil for use in various types of stationary, four-stroke gas engines (e.g. Jenbacher, MWM) running predominantly on natural gas. It can be used in three-way and selective catalyst systems.
DELGAS M 40	13,7	-34	274	10,5	-	0,68	-	Oil for use in various types of stationary, four-stroke gas engines (including Jenbacher, MAN, Deutz) naturally aspirated and turbocharged, fuelled with methane-rich gases such as landfill gas, mine gas and biogas. It can be used in three-way and selective catalyst systems.
DELGAS M 15W-40	14,5	-24	224	10,2	6320	0,97	-	Oil for use in various types of four-stroke gas engines fuelled by natural gas as well as other methane-rich gases such as landfill gas and biogas. The product is mainly dedicated to the naturally aspirated and turbocharged gas engines of containerised generators. It can be used in three-way and selective catalyst systems.
DELGAS A 15W-40	14,7	-36	230	2,0	4700	0,001	-	Ashless oil intended for use in two-stroke natural gas-fuelled engines operating in gas transmission and compression stations.

## AN EXPERT IN YOUR INDUSTRY





Product name	Kinematic viscosity at 40°C [mm²/s]	Emulsion appearance at 20°C	pH 5% of emulsion	Corrosion protection capacity on steel plates using the Herbert method	Emulsion stability at 24h/20±50°C	Refractive index at 20°C
UNICOOL MIKRO EP	65,0	Transparent to iridescent liquid	9,2	H0	withstands	1,4
UNICOOL MIKRO E	1,0		-	H0	1A/1R/withstands	2,5
UNICOOL MIKRO 40 P	15,8	Transparent to iridescent liquid	9,4	H0	1A/1R/withstands	2,3
UNICOOL MIKRO 40 PS	5,6		9,4	H0		-
UNICOOL MIKRO 40 PW	15,8		9,4	H0		2,3
UNICOOL AL.	54,0	-	9,3	-	-	1,1
UNICOOL WO	29,0	Milk emulsion	9,2	H0	withstands	1,5
EMULGOL DS 30	28,5	Clear, homogeneous, amber-coloured liquid	9,2			1,5
EMULGOL ES-12	30,5	Clear, homogeneous, amber-coloured liquid	9,1			1,4

EP - Extreme Pressure

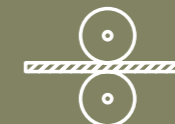
Water hardness [°n]	Material to be processed	Recommended working concentrations	Product description
From 10°n to 20°n	<ul style="list-style-type: none"> <li>steel</li> <li>cast iron</li> <li>non-ferrous metals</li> <li>very hard materials, e.g. alloy steels</li> </ul>	<ul style="list-style-type: none"> <li>heavy grinding: 3-5%,</li> <li>heavy chip machining (turning, milling): 3-5%,</li> <li>very heavy chip machining (reaming, threading): 5-8%.</li> </ul>	Semi-synthetic emulsifying concentrate (microemulsion) with EP additives, used for heavy metalworking operations: cutting, grinding.
	<ul style="list-style-type: none"> <li>cast iron</li> <li>iron alloys and stainless steel</li> <li>aluminium alloys</li> <li>plastic materials</li> </ul>	<ul style="list-style-type: none"> <li>normal machining (turning, milling): light (3%), medium-heavy (5-6%)</li> <li>grinding: light (1.5-2%), medium-heavy (3-5%)</li> <li>stamping, forming: light (3-4%), medium-heavy (5-6%)</li> <li>reaming: light (4-5%), medium-heavy (8-10%)</li> </ul>	Semi-synthetic emulsifying concentrate (microemulsion) used for typical machining processes: turning, milling, drilling, reaming, threading, shaping, grinding. Suitable for low- and high-pressure CNC systems. It can be used in central systems and on individual machines.
From 10°n to 15°n	<ul style="list-style-type: none"> <li>cast iron</li> <li>iron alloys and stainless steel</li> <li>aluminium alloys</li> <li>plastic materials</li> </ul>	<ul style="list-style-type: none"> <li>normal machining (turning, milling): light (3%), medium-heavy (5-6%)</li> <li>grinding: light (1.5-2%), medium-heavy (3-5%)</li> <li>stamping, forming: light (3-4%), medium-heavy (5-6%)</li> <li>reaming: light (4-5%), medium-heavy (8-10%)</li> </ul>	Semi-synthetic concentrate (microemulsion), used for typical machining processes: turning, milling, grinding. Suitable for low- and high-pressure CNC systems. It can be used in central systems and on individual machines. The product should be stored at a temperature of +10°C to +30°C in the manufacturer's packaging protected from dust, frost and excessive heat.
	<ul style="list-style-type: none"> <li>steel</li> <li>cast iron</li> <li>copper</li> <li>aluminium and their alloys</li> </ul>	<ul style="list-style-type: none"> <li>normal machining (turning, milling): light (3%), medium-heavy (5-6%)</li> <li>grinding: light (1.5-2%), medium-heavy (3-5%)</li> <li>stamping, forming: light (3-4%), medium-heavy (5-6%)</li> <li>reaming: light (4-5%), medium-heavy (8-10%)</li> </ul>	Semi-synthetic concentrate (microemulsion), used for typical machining processes: turning, milling, drilling, reaming, deep-hole drilling, threading, shaping, grinding. Suitable for low and high-pressure CNC systems. It can be used in central systems and individual machines.
	<ul style="list-style-type: none"> <li>cast iron</li> <li>iron alloys and stainless steel</li> <li>aluminium alloys</li> <li>plastic materials</li> </ul>	<ul style="list-style-type: none"> <li>normal machining (turning, milling): light machining (3%), medium (5-6%), heavy (7-8%).</li> <li>grinding: light machining (1.5-2%), medium (3-5%), heavy (3-5%).</li> <li>heavy chip machining (tapping, deep drilling): light machining (3-4%), medium (6-8%), heavy (9%)</li> <li>stamping, forming: light machining (3-4%), medium (5-6%), heavy (6-8%)</li> <li>reaming: light machining (4-5%), medium (8-10%), heavy (10-12%).</li> </ul>	Semi-synthetic concentrate (microemulsion), used for typical machining processes: turning, milling, drilling, reaming, deep-hole drilling, threading, shaping, grinding. Suitable for low and high-pressure CNC systems. It can be used in central systems and individual machines.
< 10°n	<ul style="list-style-type: none"> <li>aluminium</li> <li>aluminium alloys</li> <li>steel and copper alloys</li> </ul>	<ul style="list-style-type: none"> <li>grinding: (3-5%)</li> <li>rough turning: (3-5%)</li> <li>smooth turning, finish reaming, threading: (5-8%)</li> <li>extrusion: (8-20%)</li> </ul>	Semi-synthetic concentrate (microemulsion) for universal use in metal machining operations. Suitable for low- and high-pressure CNC systems. It can be used in central systems and on individual machines.
10°n to 15°n	<ul style="list-style-type: none"> <li>steel</li> <li>cast iron</li> <li>non-ferrous metals and their alloys</li> <li>copper and aluminium alloys</li> </ul>	<ul style="list-style-type: none"> <li>On water with a general hardness of up to 15°N:</li> <li>grinding: (3-4%)</li> <li>normal chip machining (e.g. turning, milling): (4-8%)</li> <li>heavy chip machining (e.g. threading): (8-10%, up to 15% for very heavy processing)</li> </ul>	Cooling lubricant fluid (milk emulsion) for various machining operations
	<ul style="list-style-type: none"> <li>steel</li> <li>cast iron</li> <li>non-ferrous metals and their alloys</li> <li>copper and aluminium alloys</li> </ul>	<ul style="list-style-type: none"> <li>On water with a general hardness of up to 15°N:</li> <li>grinding: (3-5%)</li> <li>turning, milling, drilling, reaming: (5-10%)</li> <li>threading: (10-15%)</li> </ul>	Cooling lubricant fluid (milk emulsion) for various machining operations.
	<ul style="list-style-type: none"> <li>steel</li> <li>cast iron</li> <li>non-ferrous metals and their alloys</li> <li>copper and aluminium alloys</li> </ul>	<ul style="list-style-type: none"> <li>On water with a general hardness of up to 15°N:</li> <li>grinding: (3-5%)</li> <li>turning, milling, drilling, reaming: (5-10%)</li> <li>threading: (10-15%)</li> </ul>	Cooling lubricant fluid (milk emulsion) for various machining operations.



Product name	Density at 15°C [g/cm <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Flow temperature °C	Flash point °C	Welding load [kG]
ACP-1E	0,86	16,7	-3	148	-
ACP-2E	0,87	21,3	-15	153	-
ACP-3E	0,87	26,5	-1	159	-
FREZOL HC 800	0,90	22,8	-21	172	620
FREZOL HC 2200	-	25	-	-	700
FREZOL WS 8	0,88	8	-	125	-
FREZOL EPX 22	0,89	23	-15	170	450
FREZOL EPX 32	0,89	31,5	-12	230	500
FREZOL EPX 46		44,5	-12	240	500
FREZOL EP 5	0,87	5,2	-	120	-
FREZOL EP 32	0,89	33,2	-	205	-
FREZOL 22	0,87	22	-	-	200
FREZOL 32	0,88	30	-	-	200
FREZOL C 3280	0,90	55	-	-	>800
FREZOL CUT 3	0,84	4,5	-66	134	-
FREZOL CUT 25	-	-	-	-	-
FREZOL CUT 25 A	0,88	23	-12	198	-
FREZOL CUT 32	0,88	34,4	-12	224	-
FREZOL CUT 32 A	0,88	31,98	-12	224	-
FREZOL CUT OC	0,88	15,8	-12	182	-
FREZOL CUT OC MULTI	0,88	15,8	-12	180	800
FREZOL CUT EC AL	0,87	12,5	-57	176	-
FREZOL UNICUT 22	0,88	24,8	-15	200	-
FREZOL UNICUT 32	0,89	36,7	-12	202	-
SULFOFREZOL 1	0,87	22	-16	162	-
METALWORKING OIL SM	0,87	23,3	-6	180	-
MILTRON AM 46	0,88	43,5	-18	220	250

EP - Extreme Pressure

Machining processes	Product description
<ul style="list-style-type: none"> <li>forming of steel, cast iron, copper and aluminium alloys</li> <li>machining of toothing by chiselling • reaming with multi-cutters</li> <li>thread cutting</li> </ul>	<p>Cutting oils for machining steel, cast iron, copper alloys and aluminium at high specific pressures and high cutting speeds. ACP machining oils are environmentally friendly, chloride-free, non-emulsifying metalworking oils.</p>
<ul style="list-style-type: none"> <li>circumferential milling • reaming of steel with a multi-cutting reamer • thread cutting • rolling • gear shaving • pull broaching</li> </ul>	
<ul style="list-style-type: none"> <li>deep drilling • working on automatic machines</li> </ul>	
<ul style="list-style-type: none"> <li>milling (e.g. gears) • turning • threading • reaming • gear shaving</li> <li>chiselling and broaching</li> </ul>	<p>New generation, non-emulsifying oils intended for use in heavy metalworking operations where a coolant with high lubricating film strength and high anti-wear properties is required.</p>
<ul style="list-style-type: none"> <li>honoring • grinding • lapping</li> </ul>	<p>Oil recommended for machining steel, non-ferrous metals and carbides during heavy and medium duty machining operations. It has been developed for metalworking processes where mineral-based machining oils are not suitable.</p>
<ul style="list-style-type: none"> <li>turning • broaching • milling • chiselling • threading • reaming • cutting-off</li> </ul>	<p>Machining oils intended for use in operations that require a coolant with a high lubricating film strength. Particularly suitable for machining difficult-to-cut, stainless and acid-resistant steels.</p>
<ul style="list-style-type: none"> <li>grinding • contour grinding</li> </ul>	<p>Oil intended for use in high-speed grinding and contour grinding operations on components made from tempered alloy steels.</p>
<ul style="list-style-type: none"> <li>turning • broaching • milling • chiselling</li> </ul>	<p>Oil intended for use in machining processes that require a coolant with a high lubricating film strength. Recommended for machining stainless and acid-resistant steels.</p>
<ul style="list-style-type: none"> <li>milling (e.g. gears)</li> <li>turning</li> <li>threading</li> </ul>	<p>Oils intended for use in light to medium processing operations on copper and its alloys and ferrous and non-ferrous metals.</p>
	<p>Non-emulsifying concentrate for heavy metal machining, intended as an EP booster at a minimum of 10% to the oil used in the system. It guarantees improved EP properties of the system, which consequently facilitates the machining of difficult-to-machine parts.</p>
<ul style="list-style-type: none"> <li>grinding</li> <li>metal honing</li> </ul>	<p>Machining oil intended for specific ferrous metal finishing work and the machining of steel and aluminium alloys.</p>
<ul style="list-style-type: none"> <li>grinding</li> <li>turning</li> <li>milling</li> <li>drilling</li> <li>threading</li> </ul>	<p>Machining oil for use in high-performance grinding operations and for machining with precision tools at low to medium cutting speeds. Suitable for machining steel and non-ferrous metals. The product is not dedicated for the machining of copper and its alloys.</p>
	<p>Machining oil for use in high-performance grinding operations and for machining with precision tools at low to medium cutting speeds.</p>
	<p>The product is not dedicated for the machining of copper and its alloys.</p>
	<p>Versatile machining oil for a wide range of applications, both for operations with precisely defined tool geometries and for grinding. Suitable for machining steel, non-ferrous metals and yellow metals. It can be used as a multifunctional circulating oil.</p>
<ul style="list-style-type: none"> <li>turning • milling • drilling (including deep drilling)</li> <li>internal and external threading grinding</li> </ul>	<p>Oil intended for machining operations with precisely defined cutting tool edge geometry. Recommended even for machining materials with very poor machinability.</p>
<ul style="list-style-type: none"> <li>turning • milling • drilling • reaming</li> </ul>	<p>Machining oil mainly for NC and CNC machining centres and for machining non-ferrous metals and their alloys. It provides an excellent effect of both cutting and cooling.</p>
<ul style="list-style-type: none"> <li>milling • turning • internal and external threading</li> <li>drilling (including deep drilling)</li> </ul>	<p>Oils intended for machining operations with precisely defined cutting tool edge geometry. Recommended even for machining materials with very poor machinability and for complex machining operations performed in gear manufacturing. Not suitable for machining non-ferrous metals.</p>
<ul style="list-style-type: none"> <li>machining</li> </ul>	<p>A depressant and sulphurised mineral oil for machining steel and cast iron at high speeds and high cutting tool edge temperatures, and for machining high-strength and heat-resistant steels. Not recommended for machining non-ferrous metals and where a high surface smoothness grade of the workpiece material is required. Active sulphur content 0.40% (m/m).</p>
<ul style="list-style-type: none"> <li>machining • broaching • threading</li> </ul>	<p>Greased oil is used as a finished coolant for machining alloys: ferrous and non-ferrous metals at low cutting speeds and cutting tool cutting edge temperatures of up to 120°C.</p>
<ul style="list-style-type: none"> <li>drilling • turning • threading</li> </ul>	<p>Multifunctional machining oil for lubricating and cooling tools in steel machining. It fulfils the functions of a circulating oil and its innovative technology also allows it to be used safely in the hydraulic and gear systems of processing equipment.</p>



Product name	Kinematic viscosity at 40°C [mm²/s]	Flash point (in open cup) min. [°C]	Flash point (in closed cup) min. [°C]	Flow temperature [°C]	Cooling rate [C/s]	Incineration residue [%]	Acid number [mg-KOH/g]	Recommended oil bath temperatures	Product description
<b>HARTEX 70</b>	22,0	180	160	-15	96	-	0,1	40-80°C	Low-temperature quenching oil intended for the heat treatment of cast iron alloy steels and carburised steels, especially in closed furnaces with a controlled atmosphere, for which a high surface cleanliness of the workpieces is required. The product also works successfully in through-baths.
<b>HARTEX 70 S</b>	24,0	195	180	-	96	0,20	-		Low-temperature quenching oil intended for the heat treatment of cast iron and steel components, particularly in closed furnaces with controlled atmospheres, for which high surface cleanliness of the workpieces to be quenched is required.
<b>HARTEX 70 XS</b>	21,0	-	185	-	99	0,10	-		
<b>HARTEX 70 XKP</b>	41,0	-	-	-	100	-	-		
<b>HARTEX 120</b>	45,0	220	200	-12	89	-	-	110-130°C	Medium-temperature quenching oil intended for the heat treatment of cast iron and steel components, particularly in closed furnaces with controlled atmosphere, for which high surface cleanliness of the workpieces to be quenched is required.
<b>HARTEX 160</b>	220,5	240	220	-9	80	-	-	160-180°C	High-temperature quenching oil intended for the heat treatment of cast iron and steel components, particularly in closed furnaces with controlled atmospheres, for which high surface cleanliness of the workpieces to be quenched is required.
<b>HARTEX WK</b>	14,0	190	-	-	105	-	-	40-80°C	Low-temperature quenching oil intended for the heat treatment of cast iron and steel components, particularly in closed furnaces with controlled atmospheres, for which high surface cleanliness of the workpieces to be quenched is required.
<b>HARTEX WZ</b>	31,5*	145	-	-	-	0,20	0,05		Low-temperature quenching oil intended for the heat treatment of cast iron and steel components for which small geometrical deformations are permitted at the required cooling rate.
<b>OH-70 M</b>	22,1	160	140	5	-	0,20	-		
<b>OH-120 M</b>	44,5	200	180	-5	-	0,60	-	110-130°C	Medium-temperature quenching oil intended for the heat treatment of cast iron and steel components for which small geometrical deformations are permitted at the required cooling rate.
<b>OH-150 M</b>	66,0	215	-	-6	-	-	-	130-150°C	Medium-temperature quenching oil intended for the heat treatment of cast iron and steel components for which small geometrical deformations are permitted at the required cooling rate.
<b>OH-160 M</b>	222,1	250	230	-3	-	0,90	-	160-180°C	High-temperature quenching oil intended for the heat treatment of cast iron and steel components for which small geometrical deformations are permitted at the required cooling rate.

\* Kinematic viscosity at 20°C

Product name	Density at 15°C [g/cm³]	Kinematic viscosity at 40°C [mm²/s]	Open cup flash point [°C]	Lubricating properties – weld load [kG]	Product description
<b>PRESSOL PT 1</b>	0,78	1	52	-	Oil mainly intended for use in the stamping process of painted steel sheets in roofing manufacture. The surface of the sheet metal after treatment does not require degreasing or other cleaning operations. The product can be applied to the sheet metal surface by brush, roller and by spraying.
<b>PRESSOL WK</b>	0,90	86	214	800	Lubricating-cooling oil recommended for precision extrusion and rolling processes. The product has additives that provide increased lubricating film strength, improved anti-corrosion performance and facilitate the washing process of components after machining operations.
<b>PRESSOL ST</b>	-	205	-	800	Oil for extrusion (all types of presses) and hollowing in the cold plastic machining process. Recommended for all types of materials, including aluminium and copper.
<b>VERY DEEP-DRAWING OIL</b>	0,91	330	240	620	The oil is used when stamping workpieces with difficult geometries and sharp curves that require very high pressures, e.g. when stamping bath tubs, sinks made of cold-rolled, high-alloy and stainless steel.
<b>PLASTIC MACHINING OIL OP-35</b>	0,90	84	222	500	Plastic machining oil used as a cooling lubricant in the cold forging process. Product formulated on the basis of sulphurised mineral oil and additives with antioxidant and anticorrosive properties.



Nazwa produktu	Density at 15°C [kg/m³]	Kinematic viscosity at 20°C [mm²/s]	Kinematic viscosity at 40°C [mm²/s]	Solidification point [°C]	Flash point [°C]	Protective properties	Product description
<b>ANTYKOL TS-120</b>	900,7	120,0*	211,8	-	220	-	Protective oil for saturating self-lubricating sintered powder bushings and plain bearing races.
<b>ANTYKOL 100 S</b>	891,7	-	105,9	-26	204	Corrosion on steel shank (Met.B – seawater): no corrosion	Maintenance oil used to protect the internal surfaces of internal combustion engines, air compressors and engine pumps against corrosion.
<b>ANTYKOL 101</b>	872,1	-	10,8	-	174		Maintenance oil recommended for temporary protection against atmospheric corrosion of components made of ferrous and non-ferrous metals. The product can be used to maintain and lubricate weapons, machinery, precision mechanisms and spare parts. Because it is compatible with fuel fractions and forms a thin oil film, it can serve as a preservative for engines and injection pumps.
<b>AKORINOL L-5Q</b>	835,5	5,2	3,2	-15	92	-	Oil recommended for cleaning metal products and inter-operational corrosion protection. In addition, the product washes away and dissolves grease-based impurities.

\* Kinematic viscosity at 50°C [mm²/s]

Product name	Density at 15°C [kg/m³]	Kinematic viscosity at 40°C [mm²/s]	Flash point [°C]	Acid number [mg KOH/g]	Quality class	Application method	Product description
<b>KONKRETON V-BIO</b>	877,3	7,15	150	6,4	ISO 6743 B	• spray • roller	Low viscosity, biodegradable anti-adhesive oils intended for lubricating moulds made of steel, aluminium, plastic and wood, used in the manufacture of precast concrete and other concrete components. The products also protect steel moulds against corrosion in the short term.
<b>KONKRETON BIO-BIT</b>	884,7	10,72	-	-	ISO 6743 B		
<b>KONKRETON V</b>	842,7	4,7	146	6,1	ISO 6743 B	• spray	Anti-adhesive oil intended for lubrication of moulds used in the manufacture of precast concrete elements and other concrete components. The product can be used to lubricate cold metal and plastic moulds.
<b>KONKRETON VS</b>	849,4	5,7	115	6,2	ISO 6743 B	• spray	Anti-adhesive oil intended for lubrication of moulds used in the manufacture of precast concrete elements and other concrete components. The product can be used to lubricate cold moulds.
<b>KONKRETON L</b>	866,5	21,8	222	3,3	ISO 6743 B	• spray	Anti-adhesive oil intended for lubrication of cold moulds used in the production of concrete elements and lightweight concrete blocks.
<b>KONKRETON N</b>	878,2	38,8	228	3,1	ISO 6743 B	• spray	Anti-adhesive oil intended for lubrication of moulds used in the production of concrete elements and lightweight concrete blocks. Oils can be used to lubricate cold moulds by spraying in the manufacture of cellular concrete.
<b>KONKRETON P</b>	887,4	79,8	254	3,2	ISO 6743 B	• brush	Anti-adhesive oil intended for lubrication of moulds used in the production of concrete elements and lightweight concrete blocks.
<b>KONKRETON S</b>	891,1	112,5	278	3,3	ISO 6743 B	• spray • roller	Anti-adhesive oils intended for lubrication of moulds used in the manufacture of cellular concrete blocks, where an increased thickness of the separation layer is required. Thanks to their suitable properties, the products can be used in the production process all year round.
<b>KONKRETON XS</b>	894,4	156,1	280	3,0	ISO 6743 B		
<b>KONKRETON AZ</b>	845,5	9,4	156	3,2	ISO 6743 B	• spray • brush	Anti-adhesive oil intended for lubrication of moulds used in the production of lightweight concrete blocks, concrete circles and fences and precast concrete elements of various sizes.
<b>KONKRETON MK S-E</b>	874,6	7,2	142	6,7	ISO 6743 B	• spray • brush • roller	Low viscosity anti-adhesive oils intended for lubrication of steel, aluminium, plastic and wooden moulds used in the manufacture of precast concrete and ceramic products.
<b>KONKRETON MK S-L</b>	863,5	6,2	150	6,4	ISO 6743 B		
<b>KONKRETON SEPAR</b>	864,3	5,5	142	13,4	ISO 6743 B		
<b>KONKRETON SDA</b>	866,5	7,8	154	10,7	ISO 6743 B		
<b>KONKRETON 30</b>	867,8	6,8	146	74	ISO 6743 B		
<b>ANTI-ADHESIVE OIL B-0</b>	864,1	17,5	184	6,0	ISO 6743 B	• spray • brush	Anti-adhesive oil intended for lubrication of steel moulds with large surface areas and high unit pressures.
<b>FORMEX Q</b>	847,8	12,5*	110	5,9	ISO 6743 B	• spray • brush • roller	Anti-adhesive oil intended for lubrication of steel moulds in precast concrete and reinforced concrete production, as well as for steel and timber formwork in the construction industry.
<b>CERAMOL Q</b>	835,8	4,3*	100	5,4	ISO 6743 B	• spray • brush • roller	Oil used in the manufacture of stoneware and porcelain and electrical porcelain.
<b>CERAMIC PRODUCT OIL BQ</b>	835,2	4,3*	100	6,2	ISO 6743 B	• spray • brush • roller	Anti-adhesive oil used in the manufacture of ceramic products. Product used in the manufacture of stoneware and porcelain and electrical porcelain as a component of kaolin paste.
<b>SEPARATION OIL</b>	881,9	30,3	202	-	-	• spray • brush	Separation oil intended for the preparation of a water-in-oil emulsion used to eliminate the phenomenon of asphalt mass sticking to the metal surfaces of asphalt transport vehicles, road paving machines and rollers.

\* Kinematic viscosity at 20°C [mm²/s]

# Heat transfer medium



Product name	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Kinematic viscosity at 100°C [mm <sup>2</sup> /s]	Viscosity index	Flow temperature [°C]	Flash point [°C]	Residue after coking [% (m/m)]	Product description
<b>ITERM SYNT 3P</b>	1025,8*	15,0	2,8	-	** -34	194	-	Synthetic heat transfer medium used in closed-loop heating equipment where temperatures from -20°C to 350°C occur, incidentally up to 375°C.
<b>ITERM-4</b>	837,9	4,1	1,5	-	-28	135	-	Heat transfer oil for industrial cooling and heating systems, heaters and oil systems used for heating and closed-loop heating equipment.
<b>ITERM 4 HT</b>	851,1	19,6	4,1	107	-15	206	0,01	High-performance oil for heat exchange systems used in closed heating systems in the temperature range from -15°C to 285°C, industrial cooling and heating systems and heaters and oil systems for preheating.
<b>ITERM 5</b>	866,7	30,2	5,2	100	-15	226	0,01	High-tech heat transfer medium recommended for closed and open, oil-fired heating systems, closed industrial systems, cooling and heating installations with operating temperatures up to 315°C-320°C (temperature in the oil mass) and for solid-fuel furnaces where additional heat extraction systems exist.
<b>ITERM 6 MB</b>	877,7	40,1	5,9	94	-18	236	0,24	Heat transfer medium recommended for use in closed heating systems in the temperature range from -10°C to 285°C, industrial cooling and heating systems, heaters and oil heating systems and solid fuel fired furnaces where additional heat extraction systems are present.
<b>ITERM 30 MF</b>	906,9	640,1	38,3	98	-15	302	0,61	Oil for lubricating machinery and equipment operating at temperatures of up to 200°C, e.g. conveyor chains in dryers.
<b>ITERM 32</b>	879,3	33,1	5,4	98	-15	215	-	Heat transfer medium recommended for use in closed heating systems, industrial cooling and heating systems, heaters and oil systems for heating.
<b>ITERM 100</b>	868,3	20,1	4,4	95	-18	216	0,03	Heating oil intended for use as a heat transfer medium in heating equipment and installations where the temperature of the oil in the mass does not exceed 200°C. Can be used in open systems as well as hermetically sealed systems.

\* Density at 20°C [kg/m<sup>3</sup>]

\*\* Solidification temperature [°C]



# Electrical insulating oils

Product name	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Kinematic viscosity at -30°C [mm <sup>2</sup> /s]	Flow temperature [°C]	Flash point [°C]	Breakdown voltage [kV]	Antioxidant content	Meets the requirements of	Product description
<b>ORLEN OIL TRAF0 EN</b>	0,88	10,3	1000	-60	142	66	none	PN-EN IEC 60296 RIET edition 2012	Uninhibited electrical insulating oil intended for insulating and cooling various types of electrical equipment. The product is recommended for heavy-duty use in electrical equipment requiring oil, including the filling of power and distribution transformers, switches, rectifiers and switchgear.



# Saw oils

Product name	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Viscosity index	Flow temperature [°C]	Flash point (in open cup) [°C]	Product description
<b>PILAROL EKO</b>	0,84	63,1	200	-26	>230	Biodegradable oil intended for lubricating the cutting system (chain) and guides of power saws used in forestry or horticulture.
<b>PILAROL</b>	0,88	64,9	90	-30	>220	High-quality oil intended for lubricating the cutting system (chain) and guides of power saws used in forestry or horticulture.
<b>PILAROL VG 140</b>	0,89	140,0	91	-28		
<b>PILAROL VG 150</b>	0,89	157,4	97	-24		



## Oils for locomotives



Nazwa produktu	Quality class API	Viscosity class SAE	Kinematic viscosity at 100°C [mm <sup>2</sup> /s]	Viscosity index	Flow temperature [°C]	Flash point [°C]	Total alkaline number [mg-KOH/g]	Product description
<b>O.OIL LOKOMOTIV PREMIUM CD 40</b>	CD	40	14,7	103	-24	242	13	Oil for heavy-duty railway compression-ignition engines operating under high thermal and mechanical loads.
<b>O.OIL LOKOMOTIV EXTRA CF 40</b>	CF	40	14,5	100	-25	242	14	Engine oil intended primarily for lubricating heavy-duty, diesel railway internal combustion engines operating under heavy-duty operating conditions.
<b>O.OIL LOKOMOTIV STANDARD CD 40</b>	CD	40	15,3	95	-18	250	9	Mineral engine oil, intended primarily for lubricating heavy-duty, diesel railway internal combustion engines operating under heavy-duty operating conditions. It can also be used to lubricate diesel engines of a similar type in other technical equipment.



## Oils for shock absorbers

Product name	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Kinematic viscosity at -30°C [mm <sup>2</sup> /s]	Viscosity index	Flow temperature [°C]	Flash point (in open cup)	Resistance to foaming: sequence I sequence II sequence III	Product description
<b>AMORTYZOL 15-WL 150</b>	0,87	15,8	460	180	-49	164	70/0 90/0 50/0	Lubrication oil for telescopic shock absorbers intended to dampen vibrations in vehicle suspensions, truck loading ramps and vehicle hydraulics.

## Oils for pneumatic equipment



Product name	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Flow temperature [°C]	Flash point (in open cup) [°C]	Appearance at 20°C	Lubricating properties - weld load [kG]	Opis produktu
<b>PNEUMATIC VG 32</b>	0,88	31,2	-18	>160	Clear, without any suspended matter	-	Oil intended for lubrication of pneumatically driven equipment, e.g. upholstery staplers, drills, assembly spanners, etc., requiring lubrication of internal moving parts.
<b>PNEUMATIC VG 100</b>	0,89	101,0	-30	>220		300	Oil intended for lubrication of heavy-duty pneumatic impact tools such as drills, pneumatic hammers, impact drills, etc.



## Solvents / Removers

Nazwa produktu	Density at 15°C [kg/m <sup>3</sup> ]	Kinematic viscosity at 40°C [mm <sup>2</sup> /s]	Flow temperature [°C]	Flash point [°C]	Opis produktu
<b>TECHNICAL CLEANER O.OIL</b>	836,4	2,6	-	107	The remover is used, among other things, for cleaning, degreasing and maintaining metal parts.
<b>TECHNICAL SOLVENT O.OIL</b>	837,4	2,6	-54	102	A solvent intended for use in coatings, adhesives and anti-adhesive agents.



Product name	NLGI class	Type of thickener	Base oil	Base oil viscosity at 40°C [mm <sup>2</sup> /s]	Application temperature range [°C]	Penetration after kneading at 25°C [1/10 mm]	Dropping point [°C]	Colour	Product description	Additional properties
<b>BENTONITE GREASES</b>										
<b>BENTOMOS 23</b>	2	bentonite	mineral	230	-10÷200	260-300	> 300	dark grey, MoS2 additive	Grease recommended for lubricating rolling and sliding bearings and other friction surfaces with a constant operating temperature above 100°C, mainly in the range of 120-200°C, and with sufficiently frequent replacement or refilling up to approximately 220°C.	It is recommended for use under high, particularly shock loads and is not suitable for lubricating low-torque driven bearings and bearings with low radial clearance.
<b>BENTOR 2</b>								brown		
<b>ALUMINIUM COMPLEX GREASES</b>										
<b>ALITEN EP-1</b>	1	aluminium complex	mineral	150	-20÷120	305-345	> 200	brown	Greases are intended for lubricating rolling bearings.	Recommended for bearing lubrication of equipment with central lubrication systems, operating at low temperatures and requiring long-distance grease transfer.
<b>ALITEN EP-2</b>	2					260-300				Recommended for bearing lubrication of equipment with individual and central lubrication systems operating at high ambient temperatures and requiring short-distance grease transfer.
<b>LITHIUM COMPLEX GREASES</b>										
<b>GREASEN SYNTEX HT 2</b>	2	lithium complex	synthetic	48	-50÷180	260-300	260	brown	Grease intended for lubricating highly loaded and high-speed rolling and sliding bearings and other mechanisms.	It has antistatic properties, and is compatible with copper alloy components as well as a large number of elastomers, making it possible to lubricate metal-plastic, metal-rubber friction interfaces. Allows lubrication of mechanisms exposed to shock loads, vibration, high dust, moisture and water washout.
<b>GREASEN COMPLEX 2</b>	2	lithium complex	mineral	100	-40÷160	260-300	260	brown	Grease intended for lubricating highly loaded rolling and sliding bearings and other mechanisms, also by means of central lubrication systems.	Particularly suitable for lubricating bearings in automotive wheel hubs, electric motors, hot fans, as well as guides, joints and other automotive and industrial mechanisms.
<b>GREASEN EP-23</b>	2	lithium complex	mineral	150	-30÷140	260-300	220	dark grey, MoS2 additive	Grease intended for lubricating heavy-duty friction interfaces and angular gears of strimmers. It is also recommended for use in places where there are frequent changes in the direction of motion or a combination of low speeds and high loads, e.g. in homokinetic joints.	The product is a lithium complex grease with molybdenum disulphide (3%). Resistant to moisture, steam and weak acids and alkalis. The grease is also resistant to vibration, high pressures and shock loads.
<b>LITEN PREMIUM LT-4EP1</b>	1	lithium complex	mineral	150	-30÷140	310-340	250	brown	Greases recommended for lubricating: rolling and plain bearings, also in central lubrication systems, slow-running, low- and medium-duty gears, joints and slideways of machines. It can be successfully used as a multifunctional grease for automobiles.	They are characterised by very high tribological performance and resistance to ageing. The modern additive composition also provides a higher dropping point, better low-temperature properties and higher resistance to water washout, compared to conventional lithium greases.
<b>LITEN PREMIUM LT-4EP2</b>	2					265-295	250			
<b>LITEN PREMIUM LT-4EP3</b>	3					220-250	260			
<b>SMAROL NANO Mower grease</b>	2	lithium complex	mineral	100	-30÷160	260-300	230	dark grey	Grease intended for lubricating angular gears of all types of lawnmowers and trimmers, combustion and electric. It can be successfully used at home, in workshops and on farms to lubricate and protect against corrosion of hinges, locks, threads and vehicle and machine components in a wide range of temperatures.	The product contains a unique NANO formula comprising a mixture of solid nanoparticle lubricating bodies. The grease adheres perfectly to lubricated surfaces, forming a durable film resistant to high loads, moisture, acids, alkalis and very high temperatures

EP - Extreme Pressure

AW - Antiwear

MoS2 - Molybdenum disulphide

\* Non-standard penetration range

\*\* Products available on request



Product name	NLGI class	Type of thickener	Base oil	Base oil viscosity at 40°C [mm <sup>2</sup> /s]	Application temperature range [°C]	Penetration after kneading at 25°C [1/10 mm]	Dropping point [°C]	Colour	Product description	Additional properties
<b>LITHIUM GREASES</b>										
GREASEN LT-4 S-2	2	lithium	mineral	100	-30÷140	265-295	200	green	Grease intended for lubricating: automotive rolling bearings, universal joints during assembly, linkages and guides of machines and other machine elements, plain bearings operating in the permissible temperature range.	-
GREASEN LT-4 S-3	3					220-250				
LITEN LT-4P3	3	lithium	mineral	100	-30÷140	220-260	205	brown	Greases intended for lubricating covered rolling bearings operating in conditions of high demands with regard to properties such as: oxidation resistance, corrosion protection, water resistance and mechanical stability.	Multifunctional products, enhanced by additives with antioxidant, anticorrosive and lubricity-enhancing properties.
LITEN LT-41	1	lithium	mineral	100	-30÷130	310-340	200	brown	Greases intended for rolling and plain bearings.	Refined with a package of additives with antioxidant, anti-rust and lubricating effects. The choice of grease depends on the method of grease supply to the bearing (e.g. central lubrication or manual lubrication), the rotational speed and the operating temperature of the bearing.
LITEN LT-42	2					265-295	202	brown		
LITEN LT-43	3					220-250	205	green		
LITEN EP-0	0	lithium	mineral	150	-20÷120	355-385	190	brown	Greases recommended for lubricating rolling bearings operating under high loads as well as in less loaded bearings where impact loads are present.	For bearing lubrication of equipment with central lubrication systems, operating at low temperatures and requiring very long-distance grease transfer.
LITEN EP-1	1					310-340	200			Intended for lubricating equipment with central lubrication systems, operating at moderate temperatures and requiring long-distance grease transfer.
LITEN EP-2	2					265-295	200			Intended for bearing lubrication of equipment with individual and central lubrication systems operating at high ambient temperatures and requiring short-distance grease transfer.
LITEN EP-3	3					220-250	200			Intended for lubricating bearings of equipment with an individual system.
LITEN EPX-0	0	lithium	mineral	150	-20÷110	350-390	170	brown	Greases recommended for lubricating closed spur and bevel gears.	Applicable in the medium temperature range specified and with medium transmission sealing.
LITEN EPX-00	00					395-435	160			Applies at the lower temperatures of the specified temperature range and with a good seal.
TRANSMISSION GREASE	1	lithium	mineral	100	-30÷130	310-340	200	brown	Grease intended for lubricating gears – spur and bevel gears of power tools.	The grease has very good anti-wear and anti-corrosion properties, which safeguard the proper operation of friction nodes during their service life.
** LITEN LV 2-M	2/3*	lithium	mineral	50	-30÷120	240-280	> 180	dark grey, MoS2 additive	Grease intended primarily for lubricating plain bearings operating under high pressures and dynamic stresses. It is also suitable for lubricating gears, pins, bushings and other mechanisms, as well as slow-running roller bearings.	Due to its high content of solid lubricant (5% MoS2) not recommended for rolling bearings with higher speeds.
** LITEN LVG 2	2/3*			50	-30÷120	240-280	> 180	dark grey, graphite additive	Grease intended primarily for lubricating plain bearings operating under high pressures and dynamic stresses. It is also suitable for lubricating gears, pins, bushings and other mechanisms, as well as slow-running roller bearings.	Due to its content of solid lubricant not recommended for rolling bearings with higher speeds.
** LITEN LVT 2-M	1/2*			200	-25÷120	270-310	> 180	dark grey, MoS2 additive	Grease intended primarily for lubricating plain bearings operating under high pressures and dynamic stresses. It is also suitable for lubricating gears, pins, bushings and other mechanisms, as well as slow-running roller bearings.	Due to its high content of solid lubricant (5% MoS2) not recommended for rolling bearings with higher speeds.
** LITEN LP 00	00			300	-20÷90	400-430	> 150	dark grey, graphite additive	It is mainly intended for lubricating closed, difficult-to-seal transmissions. It has very good adhesion to metal surfaces.	-

EP - Extreme Pressure  
 AW - Antiwear  
 MoS2 - Molybdenum disulphide  
 \* Non-standard penetration range  
 \*\* Products available on request



Product name	NLGI class	Type of thickener	Base oil	Base oil viscosity at 40°C [mm <sup>2</sup> /s]	Application temperature range [°C]	Penetration after kneading at 25°C [1/10 mm]	Dropping point [°C]	Colour	Product description	Additional properties
<b>CALCIUM GREASES</b>										
GREASEN STP	1*	calcium	mineral	40	-20÷60	300-350	95	brown	<p>It is intended exclusively for the periodic lubrication of car chassis, pins, joints, guides. The grease is not suitable for lubrication of rolling bearings and water pump.</p> <p>Grease intended for lubrication of: car springs, open gears, worm gears, screw threads exposed to corrosive action, chains and other heavily loaded friction nodes. It can be used as a typical assembly grease.</p> <p>Greases intended for lubricating heavily loaded rolling bearings, particularly under impact load, also when water is present, e.g. metal rolling mills, presses, heavy construction machinery, etc.</p> <p>Greases recommended for lubricating plain bearings and other friction surfaces. The products are not suitable for lubricating rolling bearings.</p> <p>Recommended for lubricating rolling bearings in rolling mills and auxiliary equipment with a central lubrication system at operating temperatures of up to 60°C as well as in other equipment operating under high and shock loads.</p> <p>Seasonal lubricants intended for lubricating railway shunting equipment of brake mechanisms.</p> <p>Grease intended for periodic corrosion protection of chisels, drills and other metal components in power tools. The product is water and moisture resistant.</p>	The soft consistency of the grease allows for easy use of pneumatic lubrication devices. It is quite resistant to cold water.
GREASEN GRAFIT	≥ 2*	calcium	mineral	100	-20÷60	>250	95	dark grey, granite addition		The product is resistant to cold water. It is not suitable for lubricating any automotive components other than springs. It cannot be used in rolling bearings and other precision mechanisms.
KALTON EP-1	1	calcium	mineral	42	-20÷60	305-345	95	brown		Recommended for central lubrication systems.
KALTON EP-2	2					260-300				Recommended for manual lubrication and for lubricators located close to the lubrication node.
MACHINE GREASE 2	2	calcium	mineral	100	-10÷60	260-300	95	brown		Machine grease 2 is used for lubrication when fed through long, small-diameter lines.
MACHINE GREASE 3	3					215-255				Machine grease 3 is used for lubrication when a higher sealing ability of the bearings is required and when the grease is supplied through larger diameter conduits and over shorter distances.
CSW-1	1	calcium	mineral	130	0÷60	290-325	93	brown		CSW-1 is recommended when supplying grease through long, small-diameter lines or at low ambient temperatures.
CSW-2	2					250-285				
L GREASE FOR MECHANICAL BRAKES (PRG-L)	0/1*	calcium	mineral	150	0÷60	280-380	120	brown		Product to be used in summer.
Z GREASE FOR MECHANICAL BRAKES (PRG-Z)	00*									-20÷60
GREASE FOR CHISELS AND DRILLS	1	calcium	mineral	40	-20÷60	300-350	95	brown	Prevents the drill or chisel from seizing with the power tool chuck. It can be used on most machinery and equipment requiring a grease of NLGI 1 consistency.	
<b>LITHIUM-CALCIUM GREASES</b>										
GREASEN N-EP 00/000	00/000*	lithium-calcium	mineral	35	-30÷90	400-460	165	brown	Greases intended for lubricating friction interfaces in heavy commercial vehicles and buses by means of central lubrication systems. They can be used to lubricate various types of reduction gears lubricated with plastic grease.	The product is MAN 283 Li-P 00/000 approved.
GREASEN S-EP 00/000	00/000*		synthetic	19	-45÷90					Synthetic oil-based product.
LITEN LC EP-1	1	lithium-calcium	mineral	150	-35÷160	310-340	220	brown	Greases intended mainly for lubricating rolling bearings operating under high loads, i.e. when: C/P < 7 for bearings with predominantly radial load C/P > 15 for bearings with predominantly axial load and also when there are shock loads in the operation of less loaded bearings.	Intended for lubricating equipment with central lubrication systems, operating at moderate temperatures and requiring long-distance grease transfer.
LITEN LC EP-2	2*				-30÷160	270-295	245			Intended for bearing lubrication of equipment with individual and central lubrication systems operating at high ambient temperatures and requiring short-distance grease transfer.
LITEN LC EP-3	3				-25÷160	220-250	250			Intended for lubricating bearings of equipment with an individual system
<b>SULFONATE GREASES</b>										
HUTPLEX HV	1/2*	calcium sulfonate	mineral	420	-30÷180	285-315	> 300	brown	High-temperature sulfonate grease intended for lubricating machine components in the mining, metallurgical, heavy industry and marine sectors, especially for friction nodes exposed to high impact loads and low torques operating under high dust and water and brine exposure conditions.	The grease is ideal in coal and copper mines for lubricating bearings, pin connections and other mechanisms of machinery and equipment operating in the specified temperature range. The product also proves its worth in tough metallurgical applications, for lubricating stand roller bearings of rolling mills.
HUTPLEX WR-2	2			180	-25÷180	265-295				High-temperature sulfonate grease intended for lubricating machine elements in the metallurgical industry, especially roller bearings of rolling mills and other friction nodes exposed to high temperatures.
<b>SPECIALITY GREASES</b>										
SMAROL PTFE	spray grease	PTFE	-	-	-30÷250	-	-	white	Grease intended for lubricating machine parts exposed to high temperatures or significant water influences. After application and drying, it leaves a protective layer on the lubricated parts in the form of an oil film, which protects very well against oxidation, thus increasing resistance to ageing. It is resistant to water, steam and aggressive media (most acids and alkalis).	In addition to individual applications, it can be used in industry to lubricate the following components: plain and spherical bearings, chains – also fitted with O-Ring or X-Ring seals, cogs, sprockets, levers, slideways, linear guide systems, spindles, hinges, wire ropes, ball joints, conveyors operating in ovens and dryers.
LR STEEL CABLE GREASE	4	special	mineral	420	-	-	> 55	brown	Grease intended for the maintenance of wire ropes of various designs during their manufacture.	Not suitable for lubricating drum hoist shaft ropes or for Koepe pulley hoist ropes.
** ORLEN OIL KORON L	-	paraffin	mineral	-	-	-	> 48	dark brown to dark green	It is intended for temporary corrosion protection of metal products during storage and transport, particularly for protection in mild climates.	It is hot-applied in liquid form.

EP - Extreme Pressure

AW - Antiwear

MoS<sub>2</sub> - Molybdenum disulphide

\* Non-standard penetration range

\*\* Products available on request



Table 1 Division of plastic greases into consistency classes according to NLGI

Grease consistency class	Consistency	Penetration range according to NLGI	Primary use
000	very smooth	445-475	Mechanical transmissions
00	liquid	400-430	
0	semi-liquid	335-385	
1	very soft	310-340	Roller and plain bearings
2	soft	265-295	
3	medium	220-250	
4	semi-hard	175-205	Special mechanisms
5	hard	130-160	
6	very hard	85-115	

Tab. 2 Types of plastic greases and their characteristics

Type of grease by thickener	Distinguishing features
Lithium greases	<ul style="list-style-type: none"> <li>• versatile application</li> <li>• good water resistance</li> <li>• high durability</li> </ul>
Calcium greases	<ul style="list-style-type: none"> <li>• poor resistance to high operating temperatures</li> <li>• poor grip</li> <li>• very good water resistance</li> </ul>
Aluminium complex greases	<ul style="list-style-type: none"> <li>• very good temperature resistance</li> <li>• very good water resistance</li> <li>• good grip</li> </ul>
Bentonite greases	<ul style="list-style-type: none"> <li>• very good heat resistance</li> <li>• no miscibility with other greases</li> <li>• very good pumpability</li> </ul>
Sulfonate greases	<ul style="list-style-type: none"> <li>• excellent water resistance</li> <li>• excellent load-bearing capacity</li> <li>• very good temperature resistance</li> </ul>
Lithium complex greases	<ul style="list-style-type: none"> <li>• very good temperature resistance</li> <li>• very high durability and mechanical stability</li> </ul>

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ACP-2E	24
ACP-3E	24
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AKORINOL ŁT	28
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ALITEN EP-2	34
AMORTYZOL 15-WL 150	33
ANTYKOL 100 S	28
ANTYKOL 101	28
ANTYKOL N	28
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CORALIA HC 100	14
CORALIA HC 150	14
CORALIA L-DAA 100	14
CORALIA L-DAA 150	14
CORALIA L-DAA 46	14
CORALIA L-DAA 68	14
CORALIA L-DAB 100	14
CORALIA L-DAB 150	14
CORALIA L-DAB 320	14
CORALIA L-DAB 46	14
CORALIA L-DAB 460	14
CORALIA L-DAB 68	14
CORALIA PAG 150	14
CORALIA PAG 46	14
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CORALIA VDL 46	14
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GALKOP 46	11

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HYDROL L-HL 150	8
HYDROL L-HL 22	8
HYDROL L-HL 32	8
HYDROL L-HL 46	8
HYDROL L-HL 68	8
HYDROL L-HM/HLP 10	8

HYDROL L-HM/HLP 100	8
HYDROL L-HM/HLP 15	8
HYDROL L-HM/HLP 150	8
HYDROL L-HM/HLP 22	8
HYDROL L-HM/HLP 32	8
HYDROL L-HM/HLP 46	8
HYDROL L-HM/HLP 68	8
HYDROL L-HV 100	6
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HYDROL POWER L-HV 68	6
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HYDROL PREMIUM L-HM 46	8
HYDROL PREMIUM L-HM 68	8
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TRANSOL 100	12
TRANSOL 150	12
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TRANSOL 320	12
TRANSOL 460	12
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TRANSOL CLP 100	12
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TRANSOL CLP 220	12
TRANSOL CLP 320	12
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