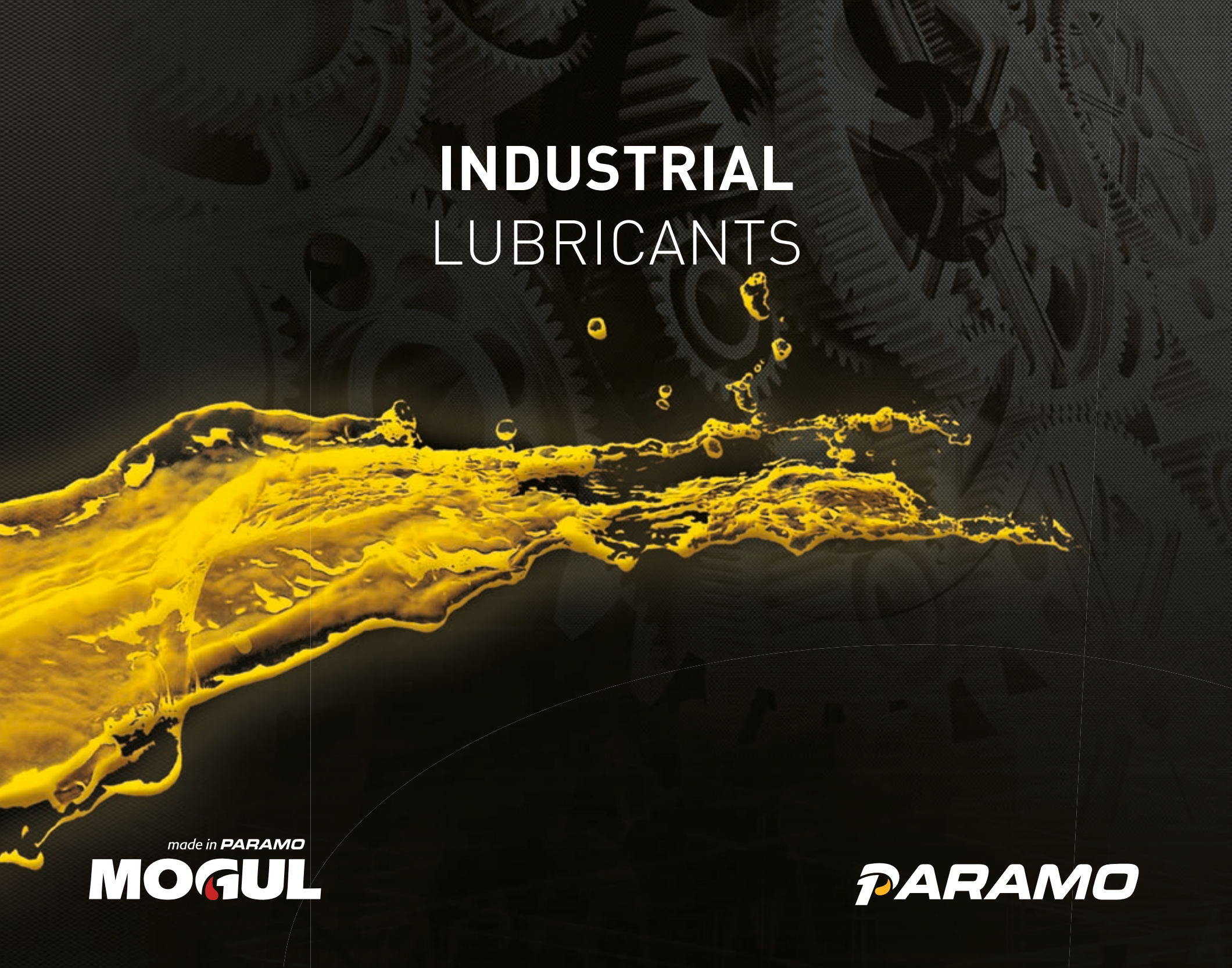
INDUSTRIAL
LUBRICANTS



made in PARAMO
MOGUL

PARAMO

PARAMO

Lubricant is a major structural element of every machine or machinery. The size of the friction and wear of lubricating nodes also depend on its properties. Properly chosen lubricant helps to reduce energy losses and to increase the lifetime of the lubricated elements. PARAMO joint-stock company and its over one-hundred-and-twenty-five years long tradition of manufacturing of lubricating oils is inextricably linked with the history of the MOGUL oil brand, which has become synonymous with the word oil among its customers in the Czech lands through its many years of availability on our market. Current MOGUL oils are not only comparable to other top oil producers of the world, but also outperform them in many aspects by their parameters. The MOGUL oil brand is known mainly for its engine and gear oils and lubricants as well as high performance industrial oils. Industrial liquids of the Paramo brand have gained their excellent reputation among industrial oils, process oils, specialty industrial fluids, preservative oils, metalworking fluids and cutting oils.

made in PARAMO

MOGUL

INTRODUCTION

Several generations long destiny of Pardubice refinery intertwined with the history of the city of Pardubice in 1889. The company has gone through a series of radical changes during more than 125 years of its existence, enjoyed number of accomplishments and managed to overcome obstacles on its way to prosperity. Over time it cooperated in various degrees with Kolín refineries, and when the two manufacturing facilities merged in 2003 Paramo company became leading manufacturer and supplier of lubricants on the Czech market.

Strong brands and strong companies are strong because of their ability to adapt to market events. And progress and success are brought about by changes.

- Paramo and its Mogul brand are the strongest Czech oil brands with more than 125-year long tradition.
- We are the largest Czech manufacturer of oils and lubricants.
- We own the technology for processing crude oil and stabilized hydrogenates, from which we produce a wide range of base oils.
- We own two factories where all the products offered by us are manufactured under the ISO quality management system.

We´re more than just a seller of products

- Our products are the result of our own development, working with the best laboratories and specialists.
- We offer our customers full support in the development of solutions and special applications.
- We have the personnel and technical background needed to analyze and assess the high quality of our products.
- Our production batches pass through a multiple production and final inspection.
- Our sales and technical specialists can help customers in solving tribotechnical problems and offer alternative solutions including finding saving solutions.
- Thanks to the developed distribution network we are able to handle each order quickly through seamless logistics.
- We offer an optimal combination of price and quality.
- We have many satisfied customers, whose references we can proudly present.

Production assortment

- Automobile oils (MOGUL)
- Industrial oils (MOGUL, PARAMO)
- Cutting fluids (PARAMO)
- Rust preventives (KONKOR)
- Lubricants (MOGUL)
- Base oils
- Technology (process) oils
- Parafines
- Bitumen products (GUMOASFALT, PENETRAL, RENOLAK, LUTEX, REFLEXOL...)
- Road bitumens; fuels

Commercial and Technical Service

Paramo is constantly innovating its product range. Paramo thus responds sensitively to customer and individual market needs and legislative requirements.

Highly sophisticated research works closely with the commercial and technical services department that provides to Paramo customers pre-sales and after-sales service, including in particular:

- Choosing and recommending lubricant for a given customer application
- Optimizing the range of lubricants used by the customer
- Tribotechnical diagnosis
- Analysis of lubricants and analytical service
- Treatment of lubricants (after-additives, maintenance ...)
- Cooperation in filtration and introducing new products
- Technical training with different levels of depth of subject matter according to customer needs, focusing on issues of lubrication in general, the technical aspects of each product, the techno logy of their production, their classification, application and the like. These activities lead to significant cost savings to customers.

„Tailored“ fluids for customers

Highly sophisticated research of Paramo company is prepared to modify within its resources existing formulations of Paramo products according to customer requirements or prepare special bespoke fluids for customers.

INDUSTRIAL LUBRICANTS

Industrial lubricants are classified according to viscosity grades and performance standards. Viscosity classes ISO VG indicate the mean value of the viscosity in mm2/s at 40 °C. The viscosity is mostly contained in the oil designation, and it is usually the number at the end of the trade name of the oil. The number is usually preceded by a written code that characterizes the oil performance. The first letter usually indicates the oil classification according to the main type of use in accordance with ISO 6743 and DIN 51 502 and other letters usually indicate what refining additives the oil must have, or specify in more detail the type of use.

ISO 3448 – Viscosity classification of industrial lubricants

ISO Viscosity class	VG Medium oil viscosity in mm2/s	Viscosity range at 40 °C
ISO VG 2	2,2	1,98–2,42
ISO VG 3	3,2	2,88–3,52
ISO VG 5	4,6	4,14–5,06
ISO VG 7	6,8	6,12–7,48
ISO VG 10	10	9,0–11,0
ISO VG 15	15	13,5–16,5
ISO VG 22	22	19,8–24,2
ISO VG 32	32	28,8–35,2
ISO VG 46	46	41,4–50,6
ISO VG 68	68	61,2–74,8
ISO VG 100	100	90–110
ISO VG 150	150	135–165
ISO VG 220	220	198–242
ISO VG 320	320	288–352
ISO VG 460	460	414–506
ISO VG 680	680	612–748
ISO VG 1000	1 000	900–1 100
ISO VG 1500	1 500	1 350–1 650

ISO 6743, DIN 51 502 – Class performances of industrial lubricants

	ISO 6743	DIN 51 502
Open lubrication systems, conventional oils	A	AN, B
Separators, form oils	B	FS
Gears, circulatory system	C	C, HYP
Compressors	D	V, K
Combustion engines	E	HD
Spindles, bearings and associated clutches	F	C
Slide way oils	G	CG
Hydraulic systems	H	H, HV, HF, ATF
Metalworking	M	S, W
Electrical insulation	N	J
Pneumatic machinery, oil mist lubrication	P	D
Heat transfer media	Q	Q
Corrosion protection	R	R
Turbines	T	TD
Heat treatment	U	L
Other applications	Y	F
Steam engines	Z	Z

Modern, computer-controlled oils mixing plant

Loss lubrication oils

ISO 6743/1 – A

AN – refined petroleum oils

Bearing oils

ISO 6743/2 – F

FC – refined mineral oils, refined antioxidant additives

Oils for turbines and turbocompressors

ISO 6743/5 – T

TS – steam turbines
TSA – highly refined mineral oil with antirust and antioxidant properties
TG – gas turbines
TGA –highly refined mineral oil with antirust and antioxidant properties
TGB – highly refined mineral oil with antirust and antioxidant properties for higher thermal stress

Hydraulic oils

ISO 6743/4 – H

HH – oil without additives
HL – HH oil with anti-corrosion and anti-oxidant additives
HM – HL oil with anti-wear additive
HV – HM oil vith viscosity index improving additive

DIN 51 524

part 1, HL – oil with anti-corrosion and anti-oxidant additives
part 2, HLP – HM oil according to ISO 6743/4
part 3, HVLP – HV oil according to ISO 6743/4
(H - hydraulic fluid, L - anti-corrosion and anti-oxidation properties, P - anti-wear properties, V - decreased dependence of viscosity on temperature, D - supplementary letter indicating improved detergency properties)

Compressor oils

ISO 6743/3A – D

D – piston-type air compressors

Piston-type and rotary vane compressors

DAA – low load
DAB – medium load
DAC – high load

Oil-flooded rotary compressors

DAG – low load
DAH – medium load
DAJ – high load
DR – refrigeration compressors
DRA – piston compressors, suction to -40 °C, ammonia, halogens

DIN 51 506

VB, VBL – air temperature at discharge up to 140 °C
VC, VCL – air temperature at discharge up to 160, or 220 °C
VD, VDL – air temperature at discharge up to 220 °C

Industrial gear oils

DIN 51 517

part 1, C – oil without additives
part 2, CL – C with anti-oxidant and anti-corrosion additives
part 3, CLP – CL oils with anti-wear additive
(L - anti-corrosion and anti-oxidation properties, P - anti-wear properties)

Hydraulic oils

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL HV 32	32	170	195	-39	ISO 6743/4 HV DIN 51 502 H DIN 51 524-3 HVLP
MOGUL HV 46	46	170	230	-36	
MOGUL HV 68	68	170	230	-33	
Deeply refined petroleum oils improved by additives against oxidation, wear, corrosion and foaming. Contain a shear stable modifier of viscosity index. Designed for heavy-duty hydrostatic mechanisms, particularly mobile mechanical equipment (mechanisms of heavy duty earthmoving machines, which operate year-round in a wide range of operating temperatures and require little dependence of oil viscosity on temperature).					
MOGUL HM 32 S	32	115	205	-36	ISO 6743/4 HM DIN 51 502 H DIN 51 524-2 HLP
MOGUL HM 46 S	46	115	225	-27	
MOGUL HM 68 S	68	115	235	-27	
Deeply refined, hydrogenated narrow cut fractioned petroleum, refined with a complex of active zinc-free additives. Feature similar basic functional characteristics as the standard range of HM oils but over and above them possess a substantially higher thermal-oxidative stability, faster air sequestration as well as the ability to easily separate water. They are mainly intended for hydrostatic mechanisms demanding exceptional durability of hydraulic fluids (extended service intervals) equipped with filters with high nominal filtration capability with high pressure generators (lamellar, axial and radial piston), e.g. injection moulding machines, CNC machines etc. *					
MOGUL HM 32 ZF	32	115	205	-39	ISO 6743/4 HM DIN 51 502 H DIN 51 524-2 HLP DIN 51 517-3 CLP Müller-Weingarten (HM 46 ZF)
MOGUL HM 46 ZF	46	115	225	-33	
MOGUL HM 68 ZF	68	115	245	-33	
Hydro-treated zinc-free hydraulic oils for hydrostatic mechanisms of both stationary and mobile machines that are exposed to very high mechanical and thermal stresses and unprotected working environment; oils have excellent ability to separate water, very good air sequestration ability and excellent hydrolytic stability. They are designed primarily for hydraulic mechanisms with demands for exceptional lubrication qualities and hydraulic fluid service life.					
MOGUL H-LPD 22	22	95	195	-36	ISO 6743/4 HM DIN 51 502 H DIN 51 524-2 HLP-D MAN N698 H-LPD
MOGUL H-LPD 32	32	102	210	-30	
MOGUL H-LPD 46	46	110	225	-27	
MOGUL H-LPD 68	68	110	235	-24	
Hydro-treated hydraulic oils with detergent-dispersive component for hydrostatic mechanisms exposed to high mechanical and thermal stresses, where there is an increased danger of fouling by mechanical impurities, oxidation products (sludge), metalworking fluids, water (up 0.2%) and other pollution. Very effectively cleans the entire hydraulic system.					
MOGUL H-LPD 46 ZF	46	105	220	-27	ISO 6743/4 HM DIN 51 502 H DIN 51 524-2 HLP-D DIN 51 517-3 CLP MAN N698 H-LPD Müller-Weingarten
Hydro-treated zinc-free hydraulic oil for hydrostatic mechanisms exposed to very high mechanical and thermal stresses; a detergent-dispersive component provides dispersion of water, oxidation products (sludge) and other impurities, ensuring increased cleanliness of the hydraulic mechanism, especially in systems with long-term oil fillings. Very effectively cleans the entire hydraulic system.					

Hydraulic oils

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO HM 10*	12	100	155	-42	
PARAMO HM 22	22	100	180	-39	
PARAMO HM 32	32	105	210	-33	ISO 6743/4 HM DIN 51 502 H DIN 51 524-2 HLP
PARAMO HM 46	46	105	225	-27	
PARAMO HM 68	68	105	230	-24	
PARAMO HM 100	100	100	240	-21	
Highly refined mineral oils with fining additives for prevention of oxidation, wear, corrosion and foaming. Designed for hydrostatic mechanisms exposed to high mechanical and thermal stresses. They are suitable for mobile mechanical equipment and lubrication of stressed circulation systems.					
PARAMO HFC 46	46	–	–	-36	ISO: L-HFC DIN 51 502: HFC
Higher fire-resistance of water-glycol based hydraulic fluid is intended for applications with a high risk of fire or explosion. It is mainly used as the working fluid in the metal (aluminium, zinc ...) pressure casting hydraulic systems and is also suitable for steel mills, mines etc., where the fluid of this type is required.*					
PARAMO OT-HP3	32	120	205	-36	GM Type C3 VOITH – fluid couplings and ind. retarders
The working fluid intended especially for hydrodynamic mechanisms (hydrodynamic clutches, hydro-converters, hydrodynamic transmissions) of trucks, buses, construction mechanical equipment, etc. It can also be used for hydrostatic mechanisms, particularly in cases with a common filling.					
MOGUL ON 1	15	-	145	-42	ISO 6743/4 HH
For water turbines overspeed devices´ hydraulics, exceptionally for mobile machinery hydraulics – only in winter at very low temperatures.*					
PARAMO INDIKÁTOR	-	-	-	-	-
Special product for colouring or marking of oil charge systems (e.g. hydraulic fluids) when the precise identification of a leak is required. The product colour is blue. Recommended dosage is approximately 0.003%. *					

Readily biodegradable hydraulic oils

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL HEES 32	32	170	190	-30	ISO 6743/4 HM DIN 51 502 H VDMA 24 568 HEES
MOGUL HEES 46	46	165	240	-30	

Readily biodegradable synthetic ester hydraulic oils for heavy-duty hydrostatic machine systems and equipment working year-round (temperatures between -20 and 80 °C, for short periods up to 90 °C), service life of which is expected to be similar to HV or HM petroleum oils. They are intended especially for applications with a risk of oil leakage resulting in contamination of soil, water and water resources.

Oils for pneumatic mechanisms (Compressed Air Lubrication)

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO PNEUMAT 32 ZF	32	115	205	-39	ISO 6743/11 P DIN 51 502 D
PARAMO PNEUMAT 22	22	105	210	-33	
PARAMO PNEUMAT 46	46	105	225	-27	

Hydro-treated petroleum oils containing additives improving anti-corrosion properties of the oil and lowering the freezing point. They further contain high-pressure additives and anti-foam and anti-rust additives. Oils are designed primarily for lubrication of air for pneumatic tools (pneumatic rotary tools, pneumatic lines, etc.). PARAMO PNEUMAT 32 ZF is based on a zinc-free additive. Thanks to the suitable additives the oils can be also used for hydrostatic hydraulic mechanisms.

Bearing oils

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO OL-B1*	18	–	180	-12	
PARAMO OL-B2	28	–	200	-9	
PARAMO OL-B4	50	–	230	-9	ISO 6743/1 A DIN 51 502 AN, B
PARAMO OL-B5	75	–	240	-9	
PARAMO OL-B7	110	–	250	-9	

Petroleum oils without additives. They are used for short-term temperature-unburdened lubrication systems, loss lubrication of machine parts, technological purposes, flushing of circulation systems during oil bath replacements etc.

PARAMO OL-P03*	2,7	–	115 (PM)	-27	
PARAMO OL-J3*	4,5	–	120	-27	
PARAMO OL-J10*	13	90	170	-15	
PARAMO OL-J22	22	95	205	-21	ISO 6743/2 FC DIN 51 502 AN DIN 51 517-2 CL
PARAMO OL-J32	32	95	215	-21	
PARAMO OL-J46	46	95	220	-15	
PARAMO OL-J68	68	95	240	-15	
PORAMO OL-J100	100	90	250	-9	

PARAMO OL-P03 - Special oil for lubrication of slide bearings of high-speed spindles of machine tools and textile machinery. It can also be used for finishing operations involving grinding, honing, finishing and lapping.*
PARAMO OL-J - Deeply refined petroleum oils with improved oxidative stability. They are used for long-term lubricating filling systems of machines, lubrication of bearings, gears, undemanding hydrostatic systems etc. Selection of oil is determined by the kinematic viscosity, i.e. the load capacity of the lubricating film.

Bearing oils with excellent low temperature properties

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO OLN-J 22	22	95	208	-33	ISO 6743/4 HL DIN 51 524-1 HL DIN 51 517-2 CL
PARAMO OLN-J 32	32	98	225	-33	
PARAMO OLN-J 46	46	95	230	-30	

Deparaffinised deeply refined mineral oils with good oxidative stability, low viscosity-temperature dependence and excellent low-temperature properties. They are used especially for hydrostatic mechanisms and where the properties of the OL-J oil types do not meet the low temperature application criteria.

Turbine oils

Trade name	Kinematic viscosity at 40°C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL TB 32	32	100	205	-12	ISO 6743/5 TSA, TGB DIN 51 502 TD DIN 51 515-1 L-TD ŠKODA TURBÍNY SOLAR Turbines (pro TB 32, TB 46)
MOGUL TB 46	46	105	225	-12	
MOGUL TB 68	68	100	240	-12	
Deeply refined petroleum oils with additives against oxidation and corrosion. They are designed for lubrication of steam, gas, hydro turbines and compressors.*					
MOGUL TB 32 S	32	105	210	-18	ISO 6743/5 TSA, TGB DIN 51 502 TD DIN 51 515-1 L-TD ŠKODA TURBÍNY SOLAR Turbines (pro TB 32 S, TB 46 S)
MOGUL TB 46 S	46	105	225	-12	
MOGUL TB 68 S	68	105	230	-12	
Deeply refined redistilled hydrogenates improved with special additive mixture to increase the oxidation stability and protection against rust. They have excellent oxidative stability; their lifespan is in comparison with the MOGUL TB group of oils more than double. They are designed for lubrication of highly stressed steam, gas, hydro turbines and compressors.*					
MOGUL TB 32 EP	32	105	210	-15	ISO 6743/5 TSE, TGE ISO 6743/4 HL DIN 51 515-1 L-TD DIN 51 517-2 CL ŠKODA POWER
MOGUL TB 46 EP	46	105	225	-15	
Deeply refined petroleum oils, turbine with a high-pressure additive. They are designed for circulating lubrication systems of steam, gas turbines and compressors, which have a common filling with transmissions that require oil with increased bearing capacity of the lubrication film (FZG test A/8.3/90>8).*					

Compressor oils

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
Air and gas compressor synthetic oils					
MOGUL KOMPRIMO 46 SYNT	46	140	220	-45	ISO 6743/3A DAJ DIN 51 506 VDL
High performance synthetic (PAO) compressor oil refined with mixed zinc-free additive, designed especially for the lubrication of screw compressors working under severe operating conditions. The oil excels by its exceptionally long service life - ensuring compliance with long service intervals specified by compressor manufacturers.					
Air and gas compressor oils					
MOGUL KOMPRIMO VDL 46	46	110	230	-30	ISO 6743/3A DAJ (VDL 46, 68) DAC (VDL 100), DIN 51 506 VDL ČKD TURBOKOMPRESORY, a.s. ČKD KOMPRESORY, a.s. ČKD PRAHA ENERGO, a.s. ČKD ŽANDOV, a.s. ATMOS, s.r.o.
MOGUL KOMPRIMO VDL 68	68	110	235	-30	
MOGUL KOMPRIMO VDL 100	100	95	250	-24	
Deeply refined petroleum oils improved by complex additive mixture for improving anti-wear and anti-corrosion properties and thermal-oxidative stability. MOGUL KOMPRIMO VDL 46 and 68 are designed primarily for the lubrication of rotary screw compressors with higher loads (output temperature of 100 °C) and also for certain turbo-compressors. MOGUL KOMPRIMO VDL 100 is designed for highly loaded piston type air and gas compressors (outlet temperature up to 220 °C), especially in cases where oils of lower performance parameters are not suitable any more, e.g. due to the formation of deposits, carbon and the like.*					
PARAMO K8	100	95	245	-9	ISO 6743/3A DAA DIN 51 506 VBL
PARAMO K12	150	92	250	-9	
PARAMO K16	220	90	260	-9	
PARAMO K18	320	90	260	-9	
PARAMO K28	460	90	280	-6	
Refined petroleum oils with improved oxidative stability. They are mainly used for lubrication of older air and gas compressors, as well as charges for some industrial gearboxes and circulation lubricating systems.					

Compressor oils

Trade name	Kinematic viscosity at 40°C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
Refrigeration compressor oils					
MOGUL ON-3	40	35	180	-24	ISO 6743/3 DRA DIN 51 502 K DIN 51 503-1 KA
For refrigeration compressors. For piston ammonia compressors not heavily loaded thermally (outlet temperature below 100 °C sump temperature below 50 °C).					
MOGUL ONF 46	46	-	190	-33	ISO 6743/3 DRA DIN 51 503-1 KC
Refined naphthenic oils designed for lubrication of ammonia screw compressors.					
MOGUL ON 5	68	-	190	-27	ISO 6743/3 DRA DIN 51 503-1 KC
Refined naphthenic oils designed especially for lubrication of ammonia piston compressors.					
MOGUL KOMPRIMO ONC 68	68	-	200	-30	ISO 6743/3 DRA DIN 51 503-1 KA, KC ČKD CHLAZENÍ, s.r.o.
Deeply refined naphthenic oils designed for lubrication of ammonia piston compressors.					
Vacuum pump oil					
PARAMO R2	100	90	230	-9	ISO 6743 DVA DIN 51 502 V
Petroleum oil with low saturated vapour pressure and high flash point. It is mainly used for lubrication of two-stage rotary vacuum pumps.					

Slideway oils

Trade name	Kinematic viscosity at 40°C (mm^2/s)	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL GLISON 46	46	210	-15	ISO 6743/13 G DIN 51 502 CGLP Meets the requirement of: Cincinnati Machine P-47 (GLISON 68) Cincinnati Machine P-50 (GLISON 220)
MOGUL GLISON 68	68	220	-15	
MOGUL GLISON 100	100	240	-12	
MOGUL GLISON 220	220	245	-9	
Highly refined petroleum oils improved by a premium package of additives enhancing the load-carrying capacity of the lubrication film. Prevent the stick-slip effect of a slider at low speeds. They are designed for lubrication of horizontal and vertical slideways of machine tools and manufacturing systems. They are also used for lubrication of certain transmissions (e.g. machine-tools) with lower transmitted power.*				
PARAMO KV 46	46	210	-15	ISO 6743/13 G DIN 51 502 CGLP Meets the requirement of: Cincinnati Machine P-47 (KV 68) Cincinnati Machine P-50 (KV 220)
PARAMO KV 68	68	220	-15	
PARAMO KV 100	100	240	-12	
PARAMO KV 220	220	245	-9	
Refined petroleum oils improved by complex additive enhancing the load-carrying capacity of the lubrication film. Prevent the stick-slip effect of a slider at low speeds. They are designed for lubrication of horizontal and vertical slideways of machine tools and manufacturing systems. They are also used for lubrication of certain transmissions (e.g. machine-tools) with lower transmitted power.*				

Multifunctional oils

Trade name	Kinematic viscosity at 40°C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL MULTI 46	46	98	210	-21	ISO 6743: ISO-L-G ISO-L-HM ISO-L-CKC DIN 51 502 CGLP DIN 51 517-3 CLP DIN 51 524-2 HLP Meets the requirement of: Cincinnati Machine P-47 (MULTI 68) Cincinnati Machine P-50 (MULTI 220) AGMA 250.04
MOGUL MULTI 68	68	98	215	-18	
MOGUL MULTI 100	100	98	215	-18	
MOGUL MULTI 150	150	95	220	-15	
MOGUL MULTI 220	220	95	220	-12	

Deeply refined petroleum oils improved by complex additive mixture. These oils are designed to lubricate the gears, hydraulic circuits, rolling bearings and sliding surfaces of modern machining equipment operating under demanding operating conditions, where the multifunctionality and the quality of these oils are put into effect. *

Synthetic industrial gear oils

Trade name	Kinematic viscosity at 40°C (mm²/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL INTRANS 150 SYNT	150	160	220	-40	
MOGUL INTRANS 220 SYNT	220	160	220	-40	ISO 12925-1 CKT DIN 51 517-3 CLP
MOGUL INTRANS 320 SYNT	320	160	225	-37	

Synthetic oils based on PAO for the lubrication of highly stressed industrial gearboxes of all types, particularly gearboxes with extreme pressures in the teeth; are suitable for the rolling gear (spur and bevel gearing) screw gears (worm and other) for applications with the danger of wear - micropitting, such as exceedingly loaded gears with surface-hardened teeth, but also for lubrication of bearings and other moving machine parts. They have excellent low temperature properties and a very good thermo-oxidative stability.*

Industrial gear oils

Trade name	Kinematic viscosity at 40°C (mm²/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO CLP 100	100	95	230	-24	
PARAMO CLP 150	150	95	230	-24	
PARAMO CLP 220	220	95	235	-18	ISO 6743/3 CKC ISO 12925-1 CKC DIN 51 517-3 CLP AGMA 9005-E02 US Stell 224 David Brown S1.53.101
PARAMO CLP 320	320	93	240	-18	
PARAMO CLP 460	460	91	240	-15	

Deeply refined petroleum oils improved especially by high-pressure additives. They are intended for heavy-duty gearboxes of all types operating over a wide speed range. PARAMO CLP 320 and 460 are designed for low-speed gearboxes (bevel, worm gears), lubrication of low-speed bearings and other machine components with high demands on the anti-wear properties of the oil.*

PARAMO PP 7	110	–	235	-30	
PARAMO PP 13	220	–	240	-18	API GL-3
PARAMO PP 44	620	–	250	-9	

Highly refined gear oils with anti-wear and high-pressure additives. They are mainly used for filling circulatory lubricating systems, undemanding industrial gearboxes and transmissions of older motorcars. PARAMO PP 44 oil is used with success in old leaky gearboxes and wheel-drive assemblies particularly in vintage cars.

Chain lubrication oils

Trade name	Kinematic viscosity at 40°C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL ŘETĚZOL 68	68	95	210	-30	–
MOGUL ŘETĚZOL 100	100	95	215	-27	
Oil specially designed for the lubrication of escalator pulling chains. They are useful when using automatic lubrication devices but also when applied using drip-feed lubricators.*					
MOGUL ŘETĚZOL 150	150	95	220	-24	–
Oil specially designed for the lubrication of escalator pulling chains. They are useful when using automatic lubrication devices but also when applied using drip-feed lubricators. For the lubrication of chains operating at elevated temperatures.*					

Cylinder oils

Trade name	Kinematic viscosity at 100°C (mm^2/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO B 25	31	–	295	-6	ISO 6743: ISO-L-Z DIN 51 502: Z
PARAMO B 28	34	–	310	-6	
PARAMO B 31	37	–	315	-3	
Oils are characterized by high viscosity for lubricating steam machine cylinders working with wet steam at temperatures up to 250 °C (B 25) up to 300 °C (B 28), or above 300 °C (B 31). They are also used for lubricating worm gears at high operating temperatures.					
PARAMO P 28	32	–	300	-6	ISO 6743: ISO-L-Z DIN 51 502: Z
PARAMO P 31	35	–	310	-3	
Oils are characterized by high viscosity and additives to increase lubricity and adhesion - these additives restrict the wiping effect of steam. They are intended for lubrication of steam machine cylinders working with wet steam and superheated steam, and where there are increased demands for lubricity and adhesion during operation with fluctuating loads up to about 300 °C.					

Mould releasing/separating agents

Trade name	Kinematic viscosity at 40 °C (mm^2/s)	Flash point (°C)	Pour point (°C)	Acid number (mg KOH/g)	Oil film spreading capacity ($kg/100m^2$)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO SEPAR PB 160	158	230	-9	-	6,0	ISO 6743: ISO-L-B
A viscous separation oil which is intended particularly as a separating agent in the manufacture of autoclaved aerated concrete blocks and sections for a perfect separation of iron moulds even under dynamic pouring of the aerated concrete mix into a mould (thanks to the high viscosity and the adhesive power of the additive there is no danger of the oil film being washed away from the mould surface). It is suitable for both manual and automated layering.						
PARAMO SEPAR SDA	7,1	130	-15	9,5	1,2	ISO 6743: ISO-L-B
A low-viscosity oil separator designed as a separating agent in the processing of cement products. It contains active ingredients ensuring easy separation of the processed material from the mould. It is intended preferably for moulds and formwork made of steel or wood used in the manufacture of panels, concrete elements and concrete work in the building industry.*						
PARAMO SEPAR BIO-CON	7,1	135	-25	6,0	1,2	ISO 6743: ISO-L-B
Readily biodegradable oil separator for separating concrete. It is designed for de-moulding of concrete tiles. It can be used for mould release applications wherever environmentally friendly separation oil is required.*						
PARAMO SEPAR LITE	4,6	160	-15	1,75	1,0	ISO 6743: ISO-L-B
A low viscosity, readily biodegradable oil used as a release agent in the production and processing of concrete, especially when de-moulding plastic moulds (polypropylene, polyethylene, PVC etc.). It contains active ingredients to ensure easy separation of the processed concrete material from the mould. Thanks to the base oil used (rapeseed oil methyl ester) it is also used as a „purging" separator when aluminium moulds get clogged e.g. in the production of roofing.						
PARAMO SEPAR BIO-BIT	11,0	130	-30	0,4	1,4	ISO 6743: ISO-L-B
A low viscosity biodegradable oil to ease separation of the bitumen coated mixture manufacture, handling and laying. The release agent allows for easy release of the coated mixture from loading areas of trucks, handling equipment and other technological components used during manufacture and laying. It is guaranteed that the formation of aerosol during spray application is minimal due to specially chosen ingredients, thus eliminating otherwise common impacts on the environment and increased consumption of the separator.*						
PARAMO SEPAR SYNT-BIT	9,0	160	-36	–	1,3	ISO 6743: ISO-L-B
The product is intended primarily as a separator for an easy separation of the bitumen coated mixture in the production, processing and laying (easy release of the coated mixture from loading areas of trucks, material handling equipment and other technological elements).						
PARAMO SEPAR BIO-BIT EM	51,0 (konc.)	–	-5	–	–	ISO 6743: ISO-L-B
A concentrate of a readily biodegradable emulsion (oil in water) used for easy separation of the bitumen coated mixture in the production, processing and laying. The release agent allows for easy release of the coated mixture from loading areas of trucks, handling equipment and other technological components during manufacture and laying. Recommended concentration for both the spray application and the coating is min. 20%. The recommended maximum hardness of the water to prepare the emulsion is 15 °N.*						

Mould releasing oils

Business name	Kinematic viscosity at 40 °C (mm²/s)	Flash point (°C)	Pour point (°C)	Acid number (mg KOH/g)	Oil film spreading capacity (kg/100m²)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL MK S	9,0	145	-12	5,5	1,3	
MOGUL MK-5	5,0	110	-21	5,5	1,1	ISO 6743: ISO-L-B
MOGUL MK-7	7,0	120	-12	5,5	1,2	

Separating low-viscosity oils designed as release agents for applications in ceramics, cement, and building industry etc. They are designed to allow easy separation of processed material from metal, ceramic and chipboard forms.*

MOGUL MKS-E	6,8	130	-18	5,6	1,2	ISO 6743: ISO-L-B

A low viscosity release agent based on a deeply refined oil, vegetable esters, fatty acids and surface active ingredients. It is designed especially for de-moulding of aluminium moulds in the manufacture of concrete roofing. It ensures perfect separation of the processed material from the mould, and keeps the mould clean.*

Transformer oils

Business name	Kinematic viscosity at 40 °C (mm²/s)	Breakdown voltage after drying (kV)	Flash Point (°C)	Pour Point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
MOGUL TRAFO CZ-A	9,5	75	175	-45	IEC 60296

A low-viscosity deeply refined, high-quality inhibited transformer oil designed for transformers of all voltage levels, including overloaded machines.*

MOGUL TRAFO N-A	9,5	75	150	-48	IEC 60296

A low-viscosity deeply refined, high-quality non-inhibited transformer oil for high demands equipment.*

Dark oils

Trade name	Kinematic viscosity at 40°C (mm²/s)	Viscosity index	Flash point (°C)	Pour point (°C)	Classification ISO 6743 Classification DIN 51 502 Other specifications
PARAMO OD 3	46	–	225	-30	
PARAMO OD 4	72	–	230	-24	
PARAMO OD 8	140	–	240	-21	ISO 6743: ISO-L-AY DIN 51 502: AN, B
PARAMO OD 11	200	–	250	-15	
PARAMO OD 16	305	–	260	-9	
PARAMO OD 20	90/100 °C	–	240	-3	

Petroleum oil distillates comprising a freezing point reducer. Oils are characterized by high adhesion and are intended for various industrial applications. PARAMO OD 3 to 16: Designed for lubrication of bearings exposed to high pressure loads, bearings in a dusty environment, transport equipment, agricultural machinery and equipment in steel mills - for lubrication of low-speed gears with roughly machined teeth and leaking gearboxes. PARAMO OD 20: Oil for lubrication of mechanical gears and machine parts with high demands on oil adhesiveness.

Consistency (softness/hardness of lubricants)

The softness / hardness of lubricating greases is determined through classification of individual products, means by which they are grouped into consistency classes which are usually indicated directly within the designation of each LG. The basis for determining the consistency of each lubricant is its penetration ability (actually a measure of hardness), which is exactly measurable. The relationship between penetration and consistency is listed in the following table, from which the characteristic features (appearances) of individual LGs consistencies are also evident. In practice it is usually the soft lubricating greases of 000, 00, 0 and 1 consistency classes that are mostly used for the lubrication of gears and central lubrication systems with long transport routes (line lubrication systems), while the lubricating greases of 2, 3 and 4 consistency classes are used for the lubrication of rolling and plain bearings, whereas products with even higher consistency are suitable as add-on sealing (or also lubricating) means for labyrinth and other seals, taps, valves and the like. The softness / hardness of lubricating greases is determined through classification of individual products, means by which they are grouped into consistency classes which are usually indicated directly within the designation of each LG. The basis for determining the consistency of each lubricant is its penetration ability (actually a measure of hardness), which is exactly measurable. The relationship between penetration and consistency is listed in the following table, from which the characteristic features (appearances) of individual LGs consistencies are also evident. In practice it is usually the soft lubricating greases of 000, 00, 0 and 1 consistency classes that are mostly used for the lubrication of gears and central lubrication systems with long transport routes (line lubrication systems), while the lubricating greases of 2, 3 and 4 consistency classes are used for the lubrication of rolling and plain bearings, whereas products with even higher consistency are suitable as add-on sealing (or also lubricating) means for labyrinth and other seals, taps, valves and the like.

Determination of cone penetration – ČSN ISO 2137

Penetration of LG at 25 °C (1/10 mm)	Consistency class	LG consistency (appearance)
445–475	000	fluid
400–430	00	semi-fluid
355–385	0	very soft
310–340	1	soft
265–295	2	semi-soft
220–250	3	firm
175–205	4	very firm
130–160	5	hard
85–115	6	very hard

GREASES – Performance classification ISO 6743/9

This classification system – ISO-L-X (letter X stands for the family of products – Greases) – characterises each LG by four letter code and a number which indicates the consistency of the grease. Individual letters describe important application properties of each classified product. The 1st symbol indicates the lower limit of its temperature usability, the 2nd its upper limit, the 3rd symbol expresses the resistance of lubricant to water and its degree of protection against rust, the 4th symbol indicates the presence or absence of high-pressure (EP) additives and, finally, the 5th symbol expresses the NLGI consistency (appearance).

Symbol 1 – minimum working temperature

Symbol 1	A	B	C	D	E
Minimum working temperatures °C	0	-20	-30	-40	below -40

Symbol 2 – maximum working temperature

Symbol 2	A	B	C	D	E	F	G
Maximum working temperatures °C	60	90	120	140	160	180	nad 180

Symbol 3 – water resistance and protection against corrosion

Symbol 3	Water resistance	Protection against corrosion
A	For dry environment	Does not protect
B	For dry environment	In the presence of distilled water
C	For dry environment	In the presence of salt water
D	Resists static moisture	Does not protect
E	Resists static moisture	In the presence of distilled water
F	Resists static moisture	In the presence of salt water
G	Resists water washout	Does not protect
H	Resists water washout	In the presence of distilled water
I	Resists water washout	In the presence of salt water

Symbol 4 – High-pressure properties

Symbol 4	Description
A	Does not have improved high-pressure properties
B	Has high-pressure properties (EP)

Symbol 5 – NLGI consistency

Example: Designation **ISO-L-X-BCGB2** of a lubricating grease means that it is an LG usable in the temperature range between -20 °C (B) and 120 °C (C), that it is resists water washout well, has a low level of protection characteristics against rusting (G), has been produced with high-pressure (EP) additives (B) and is of the class 2 consistency.

LUBRICATING GREASES – Performance classification DIN 51 502

The classification system of LG is specified in DIN 51 502 and other standards. The LGs are placed into four basic application groups (symbol 1). Further supplementary letters in the designation indicate any content of additives in the grease (symbol 2), the number indicates the consistency of the grease (NLGI – symbol 3), the next letter symbol indicates the higher temperature limit of the product's usability and its resistance to water and, finally, the last number of the designation expresses the lower temperature limit of its usability.

Symbol 1 – Determination of application of the grease

Designation	Determination of application of the grease
K	Lubricating greases for rolling and plain bearings and sliding surfaces
G	Lubricating greases for sealed gearboxes
OG	Lubricating greases for open gears and gearing
M	Lubricating greases for slide assemblies and seals

Symbol 2 – content of additives in the grease

Designation	Substances contained in the grease
F	Firm greases additives (e.g. MoS_2 , graphite, teflon etc.)
L	Anticorrosion additives
P	High-pressure additives (EP)

Symbol 3 – Consistency NLGI

Symbol 4 – Maximum working temperature (°C) and water resistance

Designation	Maximum operating temperature [°C]	Water resistance (grade - test temperature) according to DIN 51 807
C	60	0–40 or 1–40
D	60	2–40 or 3–40
E	80	0–40 or 1–40
F	80	2–40 or 3–40
G	100	0–90 or 1–90
H	100	2–90 or 3–90
K	120	0–90 or 1–90
M	120	2–90 or 3–90
N	140	by agreement
P	160	
R	180	
S	200	
T	220	
U	above 220	

The degree of water resistance: 0 = no changes; 1 = small changes; 2 = moderate changes; 3 = severe changes

Symbol 5 – minimum working temperature (°C)

Numeric designation	Minimum working temperature (°C)
-10	-10
-20	-20
-30	-30
-40	-40
-50	-50
-60	-60

Example: The designation KP2K-30 of lubricating grease expresses that it is a multipurpose grease (K) with EP additives (P), consistency class 2, which can be used in the temperature range between -30 and 120 °C and which has a good resistance to the effects of water (K).

Lubricating greases for mobile machinery and equipment

Trade name	Thickener type	Base oil viscosity at 40 °C (mm^2/s)	Penetration at 25 °C (10^{-1}mm)	Classification ISO 6743	Classification DIN 51 502	Operating temperature [°C]
MOGUL LA 2	Li soap	120	250–290	CCEB 2	KP2K-30	-30 to 120
	Universal high pressure lubricating grease (PM) designed for lubrication of plain and roller bearings (especially long-term fills) of mobile machinery or for other certain applications (e.g. lubricating gears etc.).					
MOGUL LA 2 D	Li soap	130	260–300	CCEB 2	KP2K-30	-30 to 120
	High pressure highly adhesive lubricating grease designed especially for applications with high demands on adhesion of the lubricant (pins, sliding bearings like. exposed to the effects of water).					
MOGUL UNI NH2	Li soap	120	250–290	CCEB 2	KP2K-30	-30 to 120
	Red universal lubricating grease intended primarily for lubrication of a wide range of roller bearings with a medium to higher loads used in mobile mechanical equipment and industrial applications.					
MOGUL LA 00	Li soap	45	400–440	CBEB 00	GP00G-35	-35 to 100
	Semi-fluid lubricating grease with high-pressure properties and good flow characteristics also at low temperatures; intended for use in central lubrication systems of trucks, buses and other machinery lubrication of rolling and plain bearings.					
MOGUL A 00	Al soap	350	80–300	BBHA 00	G00G-20	-20 to 90
	Highly adhesive, easily spreadable LG, primarily intended for the lubrication of plain bearings of mobile technological equipment („grease for thorough lubrication"); in general suitable for bearings exposed to intense influence of water, for central pressure lubrication systems, certain low-speed gearboxes, chains, and the like.					
MOGUL PZ0 P	Li soap	250	360–400	BBEA 0	G0E-20	-20 to 90
	Lubricating grease primarily designed for lubrication of leaking encapsulated gearboxes of mobile equipment (angle transmissions of rotating mowers - type ZTR); also for industrial gearboxes.					
MOGUL LP 00	Li soap	300	400–430	BBEB 00	GFP00E-20	-20 to 90
	Semi- fluid high pressure lubricating grease designed for heavy duty enclosed gearboxes; e.g. locomotive gears etc. Contains graphite.					

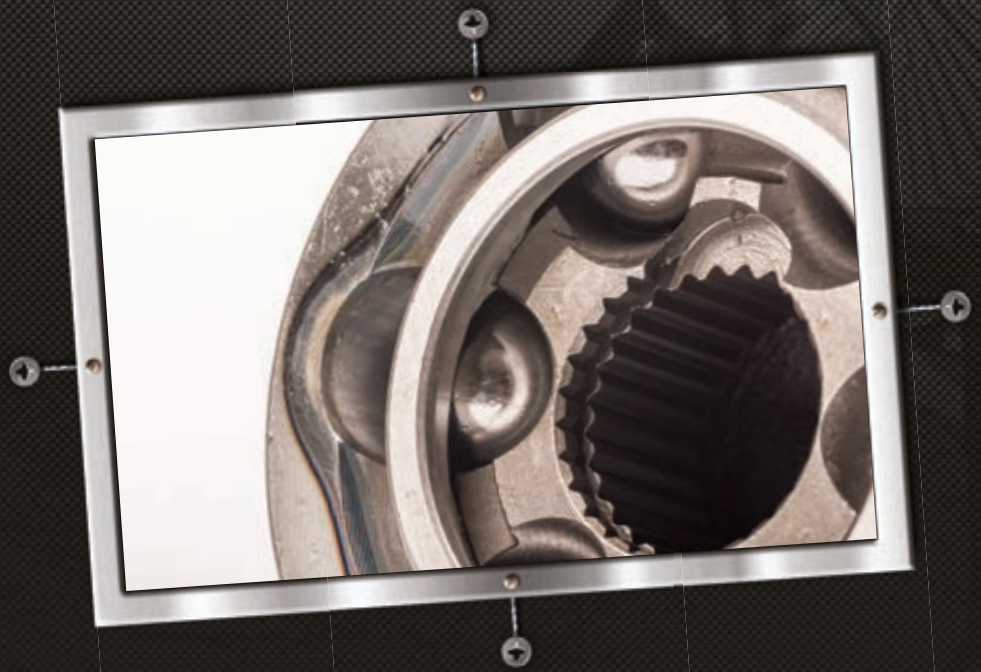
Industrial lubricating greases

Trade name	Thickener type	Base oil viscosity at 40 °C (mm^2/s)	Penetration at 25 °C (10^{-1}mm)	Classification ISO 6743	Classification DIN 51 502	Operating temperature [°C]
MOGUL LV 2-3	Li soap	50	240–280	CCEA 2/3	K2/3K-30	-30 to 120
	Universal lubricating grease for the lubrication of rolling and plain bearings or other moving parts that are not exposed to high pressures. Not suitable for central lubrication systems.					
MOGUL LVS 1	Li soap	110	310–340	BCEA 1	K1K-25	-25 to 120
	Lubricating grease designed for lubrication of rolling and plain bearings or other moving parts operating under common operating conditions. Suitable for central lubrication systems. Features increased kinematic viscosity of the base oil.					
MOGUL LVS 2	Li soap	110	265–295	BCEA 2	K2K-25	-25 to 120
	Lubricating grease designed for lubrication of rolling and plain bearings or other moving parts operating under common operating conditions. It features increased kinematic viscosity of the base oil when compared to MOGUL LV 2-3 product, thereby increasing the lubrication film load-carrying capacity.					
MOGUL LVS 3	Li soap	110	220–250	BCEA 3	K3K-25	-25 to 130
	Lubricating grease designed for lubrication of rolling and plain bearings or other moving parts operating under common operating conditions. It is mainly used for high speed bearings (fans) and the bearing mounted on a vertical shaft. It features increased kinematic viscosity of the base oil (adequate substitute for PM MOGUL LV 3 EL).					
MOGUL LV 2 EP	Li soap	50	240–280	CCEB 2/3	KP2/3K-30	-30 to 120
MOGUL LV 2 EPS	Li soap	50	230–260	CCEB 3	KP3K-30	-30 to 120
	High pressure lubricating grease designed for lubrication of rolling and plain bearings exposed to high loads, or other loaded moving parts. Not suitable for central lubrication systems. MOGUL LV 2 EPS is primarily designed for lubrication of axle bearings of railway vehicles.					
MOGUL LV 00 EP	Li soap	200	400–440	BBEB 00	GP00G-25	-25 to 100
	High pressure lubricating grease for the lubrication of gears of all types requiring semi-fluid LG. It is also suitable for lubrication of slide and rolling bearings exposed to high loads, in particular when applied by means of central lubrication systems (long grease lines with small diameter pipes).					
MOGUL LVT 1 EP	Li soap	200	310–340	BCEB 1	KP1K-20	-25 to 120
MOGUL LVT 2 EP	Li soap	200	260–200	BCEB 2	KP2K-20	-25 to 120
	High pressure lubricating grease designed for lubrication of rolling and plain bearings subjected to high loads, or other loaded movable parts. They feature high viscosity base oil, thereby increased load-carrying capacity of the lubrication film. MOGUL LVT 1 EP is suitable for central lubrication systems with long grease lines.					

Special industrial lubricating greases

Trade name	Thickener type	Base oil viscosity at 40 °C (mm^2/s)	Penetration at 25 °C (10^{-1}mm)	Classification ISO 6743	Classification DIN 51 502	Operating temperature [°C]
MOGUL LV 2 WR	Li soap	110	260–310	BCHB 2	KP2K-20	-20 to 120
	High pressure lubricating grease resistant to water washout, designed for lubrication of rolling and plain bearings and sliding surfaces working under conditions exposed to excessive splashing of liquids including metalworking fluids. It is used as an assembly lubricant for easy dismantling of joints exposed to the effects of metalworking fluids.					
MOGUL LVT 2M	Li soap	200	270–310	BCEB 2	KFP2K-25	-25 to 120
	High pressure lubricating grease with increased content of MoS2, high viscosity of the base oil and with the adhesive additive. The grease is intended in particular for lubrication of sliding but also the rolling bearings working at high pressures and under high dynamic loads. It is suitable for cases in which there are demands for so-called „emergency" properties of the lubricant.					
MOGUL LVG 2	Li soap	50	240–280	CCEA 2/3	KF2/3K-30	-30 to 120
	Grease with the addition of solid lubricant - graphite, designed especially for lubrication of rolling and plain bearings or other moving parts. For cases in which there are demands for so-called „emergency" properties of the lubricant.					
MOGUL MOLYKA G	Li soap	50	240–280	CCEB 2/3	KF2/3K-30	-30 to 120
	Lubricating grease with the addition of graphite and MoS2 especially designed for lubrication of rolling and plain bearings under high load or other loaded moving parts. For cases in which there are demands for so-called „emergency" properties of the lubricant.					
MOGUL LC 2	Li komplex	175	269–295	BEEB 2	KP2P-20	-20 to 150 (180)
	High-temperature high-pressure lubricating grease designed for roller and plain bearings and other applications working in harsh conditions; especially for bearings operating under high load and under a long-term temperatures up to 150 °C at peaks, or under conditions of permanent lubrication up to 180 °C.*					
MOGUL CALSUL 2 WR	Calcium--sulfonate Complex	200	265–295	BDIB 2	KP2N-25	-25 to 150 (180)
	High pressure lubricating grease intended mainly for lubrication of extremely loaded rolling and plain bearings operating at high temperatures (peak up to 180 °C). It is used in the metallurgical and mining industries, for the lubrication of machine tools, off-road vehicles marine transport and everywhere where there is a danger of wading or spraying of water incl. saltwater - high resistance to water washout.					
MOGUL A 4	Ca soap	50	170–210	CAHA 4	K4E-25	-25 to 80
MOGUL K 3	Ca soap	50	240–280	CAHA 2/3	K2/3C-30	-30 to 70
	Lubricating greases designed for seating exposed to direct contact with water, for plain and rolling bearings exposed to lower to medium loads.					

Trade name	Thickener type	Base oil viscosity at 40 °C (mm^2/s)	Penetration at 25 °C (10^{-1}mm)	Classification ISO 6743	Classification DIN 51 502	Operating temperature [°C]
MOGUL G 3	Ca soap	50	215–295	CAHB 3	KF3C-30	-30 to 70
	Lubricating grease designed for sliding or low-speed rolling bearings which can operate in humid environments; has improved „emergency" properties - contains graphite.					
MOGUL N 1	Ca soap	15	310–340	CAGA 1/2	K1/2C-30	-30 to 50
	Lubricating grease for plain and roller bearings operating under low pressure in a limited temperature range, incl. environment with increased humidity; for centrally lubricated seating comprising long grease lines.					
MOGUL N 000	Ca soap	20	–	CAEA 000	K000C-30	-30 to 60
	Lubricating grease for lubricating especially plain bearings exposed to lower loads.					



Readily biodegradable greases

Trade name	Thickener type	Base oil viscosity at 40 °C (mm^2/s)	Penetration at 25 °C (10^{-1}mm)	Classification ISO 6743	Classification DIN 51 502	Operating temperature
MOGUL EKO L2	Ca soap	130	265–295	BBEB 2	KP2E-20	-20 to 80
	High pressure semi-synthetic lubricating grease intended mainly for lubrication of all movable bearings which are working in wet environment or in direct contact with water, e.g. lubrication of mobile machinery chassis working in environmentally protected areas - replaces petroleum lubricating greases.					
MOGUL EKO V	Ca soap	–	–	–	–	-15 to 50
	Lubricating grease intended for loss lubrication of sliding rails (points) in rail transport.					
MOGUL EKO-V-PS	Ca soap	–	–	–	–	-20 to 80
	Semi-synthetic grease designed for loss lubrication of sliding rails (points) in rail transport. It is formulated partly on synthetic ester base - featuring increased resistance to inclement weather (no polymerization during summer weather).					
MOGUL EKO OK	Ca soap	–	–	–	–	-15 to 50
	Lubricating grease designed for loss lubrication systems; especially for traction rolling stock wheel flange lubrication (locomotives, trams, etc.).					
MOGUL EKO OK-PS	Ca soap	–	–	–	–	-20 to 80
	Semi-synthetic grease designed for loss lubrication systems; especially for traction rolling stock wheel flange lubrication (locomotives, trams, etc.). It is partly formulated on the basis of synthetic ester - higher temperature resistance, higher stability of the lubricant.					

Solid lubricants and vaselines

Trade name	Product characteristics
MOGUL MOLYKA R	Solid lubricant in the form of powder of molybdenum disulfide (MoS2) is used for lubrication of moving parts where re-greasing is difficult or impossible (joints, valves, etc.), furthermore for finishing surfaces of dismountable connections, especially at high temperatures and in aggressive environments (creation of separating layer), also as a means for metal drawing and press working.
MOGUL pasta MOLYKA	A mixture of molybdenum disulfide (MoS2) and mineral oil. For application see MOGUL MOLYKA R.
Vazelína žlutá	Semi-solid mixture of saturated hydrocarbons obtained from petroleum is used for technological purposes.
Konzervační vazelína MOGUL KORON L	Rust preventive vaseline for temporary protection of metal products against atmospheric corrosion during storage and transport, particularly for long-term protection in the temperate climate zone.

* The product is classified as hazardous according to the EP and Council Regulation no. 1272/2008 (CLP). More information can be found in the current MSDS on www.mogul.cz.

In 2017, the company PARAMO, a.s.

PARAMO, a.s.
Přerovská 560, 530 06 Pardubice
CZECH REPUBLIC
phone: +420 466 810 376, +420 466 810 111
e-mail: export@paramo.cz
www.paramo.cz | www.mogul.cz