



Catalogue of Greases



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INTRODUCTION

Repsol is an integrated global energy company that operates in over 40 countries, carrying out hydrocarbon exploration and production activities and commercializing a wide range of products derived from crude oil.

To ensure excellent machinery performance, the **Repsol Lubricants and Specialities** team offers the latest catalogue of high performance lubricating greases. With this comprehensive range the needs of the most diverse industrial sectors are covered, as well as public works, mining and agricultural equipment.

The catalogue includes multi-purpose greases that cover the lubrication needs of the vast majority of facilities as well as special products designed to work in conditions that are highly demanding due to the loads, temperatures or environmental pollution. Following the most stringent quality standards and regulations, the exclusive formulation of our greases provides excellent performance across all types of machinery, thus increasing their service life and providing extra reliability. This converts the Repsol range of greases into the best investment for your company.

GENERAL CRITERIA FOR SELECTING GREASES

A grease is a solid or semi-fluid product comprising a dispersion of a thickening agent in a lubricating liquid along with other elements that provide the grease with special properties (additives).

The structure of the grease allows the lubricant to remain in a solid state until the shear stress between surfaces reaches a certain level and the grease starts to flow and becomes a mobile compound.

Lubricating greases may be selected based on multiple criteria.

Some of these criteria are given below, such as:

- Application
- Industry segment
- Operating conditions.

<p>MULTI-PURPOSE</p> <ul style="list-style-type: none"> ● GRASA CÁLCICA ● GRASA LÍTICA MP ● GRASA LÍTICA EP ● GRASA LÍTICA ESPECIAL EP 2/3 <p>CENTRALIZED GEAR SYSTEMS</p> <ul style="list-style-type: none"> ● GRASA OGL ● GRASA LÍTICA CENTRALIZADOS 00 <p>APPLICATIONS</p> <p>ELECTRIC MOTORS</p> <ul style="list-style-type: none"> ● GRASA LÍTICA MP ● GRASA COMPLEX SYNT <p>BEARINGS, LIGHT LOADS [NON-EP]</p> <ul style="list-style-type: none"> ● GRASA LÍTICA MP 	<p>VERY HIGH TEMPERATURES</p> <ul style="list-style-type: none"> ● GRASA LÍTICA COMPLEJA INDUSTRIA ● GRASA LÍTICA COMPLEJA AUTOMOCIÓN ● GRASA COMPLEX THERM ● GRASA COMPLEX SYNT ● GRASA CALCIUM SULFONATE <p>LOW TEMPERATURES</p> <ul style="list-style-type: none"> ● GRASA COMPLEX SYNT <p>GREASES WITH MOLYBDENUM DISULPHIDE</p> <ul style="list-style-type: none"> ● MOLIBGRAS EP ● GRASA COMPLEX THERM <p>OPERATION</p> <p>LOW SPEEDS/ HIGH LOADS</p> <ul style="list-style-type: none"> ● GRASA LÍTICA EP ● GRASA LÍTICA ESPECIAL EP 2/3 ● GRASA MOLIBGRAS EP ● GRASA COMPLEX THERM <p>WATER RESISTANT</p> <ul style="list-style-type: none"> ● GRASA CÁLCICA ● GRASA CALCIUM SULFONATE ● BIO GRASA CÁLCICA EP 2
<p>OFF-ROAD/MINING CONSTRUCTION</p> <ul style="list-style-type: none"> ● GRASA LÍTICA EP ● GRASA MOLIBGRAS EP ● GRASA OGL ● GRASA HAMMER ● GRASA COMPLEX THERM <p>AGRICULTURE/ PUBLIC WORKS</p> <ul style="list-style-type: none"> ● GRASA CÁLCICA ● GRASA LÍTICA MP ● GRASA LÍTICA EP ● GRASA ESPECIAL EP 2/3 ● GRASA LÍTICA AGR 00 ● BIO GRASA CÁLCICA EP 2 <p>SEGMENT</p> <p>PAPER INDUSTRY</p> <ul style="list-style-type: none"> ● GRASA CALCIUM SULFONATE ● GRASA LÍTICA COMPLEJA INDUSTRIA <p>STEEL INDUSTRY</p> <ul style="list-style-type: none"> ● GRASA LÍTICA EP ● GRASA CALCIUM SULFONATE ● GRASA LÍTICA COMPLEJA INDUSTRIA 	

To select the correct grease, the three components that comprise it must be taken into account: the lubricating base, the thickener and the additives.

The most important properties to be taken into account for choosing them are as follows:

1. Consistency
2. Base oil viscosity
3. Anti-wear and extreme pressure additives
4. Resistance to high/low temperatures
5. Resistance to the environmental working conditions

CONSISTENCY

The consistency determines the thickness of the grease and is influenced by the type and percent of thickener used. The consistency provides the structure (like a sponge) that stores the lubricant base.

The NLGI (National Lubricating Grease Institute) grades of penetration describe the penetration of a standard cone in a sample of grease under determined conditions; a low NLGI indicates high penetration while a high grade would be for a harder grease.

As general recommendations we use consistency grades 1 and 2 for general lubrication of elements, the lower grades (0 and 00) for centralised systems and lubrication of gears and higher grades (3) for elements with high temperature conditions.





CONSISTENCY (NLGI grade)	PENETRATION [60W, 25 °C] ASTM D-217 (0.1 mm)	APPEARANCE	APPLICATIONS
000	445 a 475	Very light, like a viscous oil	Gears
00	400 a 430	Very light, like a viscous oil	Centralised systems and gears
0	355 a 385	Soft	Bearings. Centralised systems
1	310 a 340	Soft	Bearings. Centralised systems
2	265 a 295	Creamy	Bearings
3	220 a 250	Almost solid	Bearings
4	175 a 205	Hard	Plain bearings. Briquette
5	130 a 160	Very hard, like soap	Plain bearings. Briquette
6	85 a 115	Very hard, like soap	Plain bearings. Briquette

BASE OIL VISCOSITY

The selection of the base oil viscosity will depend on the load and speed conditions of the application, as well as on the degree of separation of the oil and pumpability of the grease.

Greases formulated with high viscosity base oils offer advantages such as greater adhesion, water resistance and reduced oil separation and are therefore well suited for applications with high loads.

On the other hand, a low viscosity base gives the grease better heat transfer and better performance at low temperatures and is therefore the best option for equipment with light loads and high speeds.

ISO VG [cSt@40°C]	APPLICATIONS	LOAD	SPEED	OIL SEPARATION	OIL SEPARATION
22	High speed spindles				
100	High speed electric motors				
150	Wheel bearings				
220	Paper industry Industrial applications				
460	Paper industry Steel industry				
1000	Mining equipment				
1500	High loads/vibrations				

RESISTANCE TO HIGH AND LOW TEMPERATURES

The drop point is defined as the temperature at which the grease goes from a semisolid state to a liquid state. This is a qualitative indication of the resistance of the grease to heat in applications that require a semi-solid lubricant.

Complex soaps (lithium complex, aluminium complex, calcium sulfonate complex, etc) have higher drop points than their equivalent simple soaps.

In respect of performance at low temperatures, this depends on the nature of the base (mineral, synthetic) as well as the consistency and viscosity of the base oil used.

EP AND AW PROPERTIES

The presence of an appropriate layer of lubricating oil to prevent the direct contact of the surfaces protected by the grease is essential. To do this, it is required to select the appropriate viscosity of the base, as well as special anti-wear and extreme pressure additives.

RESISTANCE TO THE ENVIRONMENTAL WORKING CONDITIONS

The presence of wet or very dirty environments greatly influence the nature of the grease to be used. Aspects such as anti-rust or anti-corrosion protection, water resistance, biodegradability and equipment noise limitation requirements are essential when it comes to selecting the appropriate grease.

MULTI-PURPOSE GREASES

LÍTICA MP

Multi-use grease for general lubrication of mechanisms which are not highly demanding, that operate at temperatures of up to 120 °C, for all types of industries, as well as automotive applications, chassis, wheel bearings, railways and machinery.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA LÍTICA MP 2	Mineral base (150 cSt)	Simple Lithium	2	190 °C	-10 °C 120 °C	DIN 51825 K 2K-10
GRASA LÍTICA MP 3	Mineral base (150 cSt)	Simple Lithium	3	195 °C	-10 °C 120 °C	DIN 51825 K 3K-10

EXTREME PRESSURE GREASES

LÍTICA EP

Grease for all types of bearings that support loads and vibrations (steel, lamination, mining, public work machinery), couplings, chains, guideways, shear bearings, rolling mills (chocks, bearings, brackets...).

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA LÍTICA EP 0	Mineral base (150 cSt)	Simple Lithium	0	185 °C	-20 °C 120 °C	DIN 51502 GP OG - 20
GRASA LÍTICA EP 1	Mineral base (150 cSt)	Simple Lithium	1	190 °C	-20 °C 120 °C	DIN 51825 KP1K - 20
GRASA LÍTICA EP 2	Mineral base (150 cSt)	Simple Lithium	2	195 °C	-20 °C 120 °C	DIN 51825 KP2K - 20
GRASA LÍTICA EP 3	Mineral base (150 cSt)	Simple Lithium	3	200 °C	-20 °C 120 °C	DIN 51825 KP3K - 20

LÍTICA ESPECIAL EP 2/3

For general lubrication of agricultural machinery, Public Works and automotive applications (rolling bearings, bolts, ball joints, bearings...).

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA LÍTICA ESPECIAL EP 2/3	Mineral base (100 cSt)	Simple Lithium	2/3	200 °C	-20°C 120°C	DIN 51825 KP 2/3K-20

MOLIBGRAS EP 2

Lubrication of mechanisms exposed to very severe services involving sliding, very high loads and long periods of lubrication (plain bearings, hydraulic breaker bearings, fifth wheel, rolling mills...).

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA MOLIBGRASEP 2	Mineral base (150 cSt)	Simple Lithium	2	185 °C	-20°C 130°C	DIN 51825 KPF 2K-20

GREASES FOR CENTRALISED SYSTEMS

LÍTICA CENTRALIZADOS 00

Centralised lubrication of trucks (pivots, spring shafts, connecting shafts, brake cam bearings, etc.), off-road vehicles used in agriculture, public work machinery and in industry.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA LÍTICA CENTRALIZADOS 00	Mineral base [100 cSt]	Simple Lithium	00	170°C	-20°C 100°C	DIN 51502 GP 00G-20

GREASES FOR HIGH/LOW TEMPERATURES

LÍTICA COMPLEJA AUTOMOCIÓN

Grease for lubrication of bearings working at high temperatures (truck wheel hubs, electric brakes, railway wheel boxes, public work machinery and agricultural applications).

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA LÍTICA COMPLEJA AUTOMOCIÓN	Mineral base [130 cSt]	Complex Lithium	2/3	290°C	-20°C 140°C	DIN 51825 KP 3/2N-20

LÍTICA COMPLEJA INDUSTRIA

Grease for the lubrication of all types of mechanisms and bearings subjected to high temperatures and heavy loads (rolling bearings, presses, paper industry, etc.).

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA LÍTICA COMPLEJA INDUSTRIA	Mineral base [220 cSt]	Complex Lithium	2	295 °C	-20°C 140°C	DIN 51825 KP2N-20

COMPLEX SYNT

Lubrication of fan to fan and electric motor bearings at medium and medium-high speeds and high temperatures.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA COMPLEX SYNT	PAO [85 cSt]	Complex Lithium	2	288 °C	-40°C 150°C	DIN 51825 KPEHC 2N -40

GREASES FOR HIGH/LOW TEMPERATURES

COMPLEX THERM

Lubrication of all types of bearings and mechanisms in general subject to very high loads at high speeds and oscillating applications, in earthmoving sectors, public work, mining, quarrying, agriculture, etc..

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA COMPLEX THERM	Mineral base [680 cSt]	Complex Lithium	2	260°C	-10°C 160°C	DIN 51825 KPF 2P-10

WATER RESISTANT GREASES

CÁLCICA

Lubrication of mechanisms working in wet environments or outdoors, such as cars, public work machinery and agricultural machinery.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA CÁLCICA 2	Mineral base [68 cSt]	Anhydrous Calcium	2	145 °C	-20 °C 100 °C	DIN 51825 K 2G-20
GRASA CÁLCICA 3	Mineral base [68 cSt]	Anhydrous Calcium	3	145 °C	-20 °C 100 °C	DIN 51825 K 3G-20

CALCIUM SULFONATE

Used in highly corrosive and wet environments, very suitable for the lubrication of rolling mill bearings in the steel industry and paper machinery in the wet and dry areas.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA CALCIUM SULFONATE	Mineral base [220 cSt]	Calcium sulfonate complex	2	280°C	-15°C 150°C	DIN 51825 KP 2N -20

GREASES FOR SPECIAL APPLICATIONS

LÍTICA AGR 00

Agricultural and industrial applications; widely used in cotton harvesting machine spindles.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA LÍTICA AGR 00	Mineral Base [24 cSt]	Simple Lithium	00	160 °C	-30 °C 100 °C	DIN 51502 GOOG-30

OGL

Lubrication of heavily loaded large gear drives in the cement, steel, mining and chemical industries.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA OGL	Semi-synthetic base [1.500 cSt]	Complex Aluminum	00	160 °C	-10 °C 120 °C	DIN 51502 OGPF 00K-10

HAMMER

Lubrication of hydraulic hammer pointers and chisels under high loads, vibrations and high temperatures. Also suitable for batteries, welding machinery and electrical installation connections.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
GRASA HAMMER	Semi-synthetic base [1.000 cSt]	Complex Lithium	2	< 265°C	-20 °C 250 °C	--

BIO GRASA CÁLCICA EP 2

Grease formulated from biodegradable oils for applications where it is required to lubricate elements with the chance of leakages or spills, such as the gates of reservoirs, agricultural machinery and forestry works.

PRODUCT	BASE	THICKENER	NLGI	DROP POINT	WORKING TEMPERATURE	QUALITY LEVEL
BIO GRASA CÁLCICA EP 2	Semi-synthetic base [200 cSt]	Anhydrous Calcium	2	150 °C	-20°C 90°C	DIN 51825 KPF 2E -20

BEHAVIOR OF GREASE									
NAME	WEAR AND LOAD RESISTANCE	SHEAR RESISTANCE AND MECHANICAL STABILITY	PERFORMANCE AT LOW TEMPERATURES	RESISTANCE TO RUST	THERMAL STABILITY	RESISTANCE TO CORROSION	WATER RESISTANCE		
GRASA LÍTICA MP	✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓		✓✓✓
GRASA LÍTICA EP	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓		✓✓✓
GRASA LÍTICA ESPECIAL EP 2/3	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓		✓✓✓
GRASA MOLIBGRAS EP 2	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓		✓✓✓
GRASA LÍTICA COMPLEJA AUTOMOCIÓN	✓✓	✓✓✓✓	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓		✓✓✓
GRASA LÍTICA COMPLEJA INDUSTRIA	✓✓✓	✓✓✓✓	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓	✓✓✓		✓✓✓
GRASA COMPLEX THERM	✓✓✓✓	✓✓✓	✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓		✓✓✓✓
GRASA COMPLEX SYNT	✓✓✓	✓✓✓	✓✓✓✓	✓✓✓✓	✓✓✓✓	✓✓	✓✓✓		✓✓✓
GRASA CÁLCICA	✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓✓		✓✓✓
GRASA CALCIUM SULFONATE	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓✓	✓✓✓✓		✓✓✓✓
GRASA LÍTICA CENTRALIZADOS 00	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓		✓✓
GRASA LÍTICA AGR 00	✓✓	✓✓	✓✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓		✓✓
GRASA OGL	✓✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓		✓✓✓
GRASA HAMMER	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓		✓✓✓✓
BIOGRASA CÁLCICA EP 2	✓✓	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓✓		✓✓✓

✓✓ Normal; ✓✓✓ Good; ✓✓✓✓ Excellent.



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