

LUCAS OIL GREASES

Greases Introduction

Do you need a quick refresher on all of the “ins and outs” of how a grease works, why it works, and what applications specific greases work great for? How about how well different grease formulas and their thickener types work together? Lucas Oil has you covered with this reference guide to all of your grease questions including some helpful charts when you are in a hurry.

Back to Basics

Grease in its simplest terms is a gelled or thickened lubricating oil. Grease is used for the same purposes as oil to help reduce friction and wear between moving metal parts except instead of circulation being key, the fact that it stays where applied is more important. What differentiates one grease from another are the additive packages, base oil group, and the thickener type. These work together to make greases unique.

Thickener Types

Greases use two forms of thickeners to add to the base oil and additive packages to form grease. They are “soap type” and “non-soap type”. Soap type are usually metal based while non-soap types are usually based on polymers or powdered solids.

The most common thickener is lithium based, whether lithium soap or lithium-complex. Lithium and lithium-complex based greases show a broad spectrum of desirable qualities with complex greases enhancing their desirable qualities. On the non-soap type, the most common thickener is polyurea with clay (Bentone) and silica gel also popular. The last two are sometimes called “non-melt” greases.

Thickener Type Applications, Compatibility, and Viscosity

Based on the thickener type, the greases can and will behave much differently. Please refer to the two tables regarding all thickener types strengths and weaknesses as well as their compatibility with other greases thickener types. Viscosity is another factor for a grease which is expressed by its NLGI number. This measures greases thickness with the higher numbers being more viscous, NLGI #2 being the most common.

Lucas Oil Grease Advantage

Our line of greases were developed to cover a broad number of applications. Premium additives boost the desired qualities of each grease’s specific use. The greases are then fully field tested to ensure our products can take the most punishing of conditions since people who buy Lucas are depending on our products to work the first time and every time.



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Compatibility

I = Incompatible C = Compatible B = Borderline

Thickener Type	Aluminum	Barium	Calcium	Clay	Lithium	Polyurea	Silica Gel	Calcium Sulfonate
Aluminum		I	B	I	I	I	C	I
Barium	I		B	I	I	I	C	B
Calcium	B	B		C	C	I	B	B
Clay	I	I	C		I	I	C	I
Lithium	I	I	C	I		I	C	C
Polyurea	I	I	I	I	I		I	I
Silica Gel	C	C	B	C	C	I		B
Calcium Sulfonate (OBCS)	I	B	B	I	C	I	B	

Grease Thickener Types

Thickener	Strengths	Weaknesses
Aluminum	Good Heat and Water Resistance	Poor Pumpability
Barium	Good Heat and Water Resistance	Poor Pumpability, EH&S Concerns
Calcium	Good Heat and Water Resistance and Shear Stability	Poor Pumpability and Heat Resistance
Clay	Good Water Resistance (absorbs)	Can Separate and Harden Especially at High Temps, Fair Shear Stability
Lithium	Generally Good Properties, All Purpose	Few
Polyurea	High Temp and Water Resistance, Sound Deadening Long Life; Fill-for-life (Electrical Motor Bearings)	Higher Cost
Silica Gel	High Temp (No Dropping Point) Broadly Compatible	Generally Poor Water Resistance
Over-Based Calcium Sulfonate	Generally Good Properties, Inherently Good Corrosion and Wear Resistance (Aside From Additives)	Somewhat Higher Cost

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Product Name	NLGI	Grease Type	Use	Drop Point	Load
Heavy Duty Mining & Construction Grease	NLGI #2	Molybdenum Disulfide (Moly)	Good for Heavy Duty Uses	500+ °F Drop Point	70+ lbs. Timken OK Load
Red "N" Tacky Grease - EP Grease	NLGI #2	Lithium Complex Grease	Good for Multi-Use	540+ °F Drop Point	
White Lithium Grease	NLGI #2	Lithium Complex Grease	Good for Multi-Use		
X-Tra Heavy Duty Grease	NLGI #2	Polyurea Grease	Good for Heavy Duty Uses	560+ °F Drop Point	
Marine Grease	NLGI #2	Calcium Sulfonate	Good for Multi-Use Marine Applications	550+ °F Drop Point	65 lbs. Timken OK Load

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