



GREASE GUIDE

Pro Chem offers a variety of site-unique greases. Each grease offers special properties that make it the ideal choice for various applications. Please use this comprehensive guide to better understand the greases we offer and to find the grease that will best suit your company's needs.



Pro Chem Grease Compatibility Study

		Aluminum Complex	Barium Complex	Calcium Stearate	Calcium 12-Hydroxy	Calcium Complex	Calcium Sulfonate	Clay (Bentonite)	Lithium	Lithium 12-Hydroxy	Lithium Complex	*Polyurea	Silica
Aluminum Complex	<i>Pro Lube</i>	X	I	I	C	I	I	I	I	I	C	I	C
Barium Complex		I	X	I	C	I	B	I	I	I	I	I	C
Calcium Stearate		I	I	X	C	I	-	C	C	B	C	I	-
Calcium 12-Hydroxy		C	C	C	X	B	-	C	C	C	C	I	-
Calcium Complex	<i>Boom Glide</i>	I	I	I	B	X	C	I	I	I	C	C	I
Calcium Sulfonate	<i>High Load</i>	I	B	-	-	I	X	I	C	C	C	I	I
Clay (Bentonite)	<i>Temp-Plate, Temp-Plate II & Hi-Temp II, OG Compound</i>	I	I	C	C	I	C	X	I	I	I	I	C
Lithium		I	I	C	C	I	C	I	X	C	C	I	C
Lithium 12-Hydroxy		I	I	B	C	I	C	I	C	X	C	I	C
Lithium Complex	<i>Litho-Lube, Litho Lube II</i>	C	I	C	C	C	C	I	C	C	X	I	C
*Polyurea		I	I	I	I	C	I	I	I	I	I	X	I
Silica	<i>Atomic Lube</i>	C	C	-	-	I	-	C	C	-	C	I	X

B = Borderline Compatibility C = Compatible I = Incompatible X = Same

*Not all polyurea greases are mutually compatible

BENTONITE CLAY

HI-TEMP II #2108601

Multi-Purpose, High Impact Grease

- Base Oil: Synthetic Blend
- Thickener: Bentonite Clay
- Color: Dark Green
- Dropping Point: (ASTM D566): >500°F (260°C)
- NLGI Grade 2.5
- Timken OK Load of 65 LBS
- Performs at a high temperature of 450°F
- Four-ball EP weld point (ASTM D2596): >500°F (260°C)
- Contains EP, antioxidant & corrosion inhibitors
- Extreme Pressure additives

Applications: Chassis, Water Pumps, Roller & Ball Bearings, Wheel Bearings, Universal Joints, Valve Operators, Gears, Screw Drives

Available in Tubes, 35lb Pails & 120lb Drums



OG COMPOUND #2759

Open Gear Lubricant Compound with Moly

- Base Oil: Dark black, organo-clay compound
- Thickener: Bentonite Clay
- Contains Moly
- Color: Black
- Dropping Point: Non-melt
- NLGI Grade 2.5
- Timken Load: 70
- Temperature Range: 0-500°F
- Excellent adhesion to metal & shock load protection
- Resistant to acids, alkalis, dust, dirt & water
- Tacky, does not splatter
- High film strength leads to longer life & less frequent lubrication

Applications: Exposed Gears of All Types, Construction Machinery, Steel Mills, Transportation Companies, Cotton Gins, Lumber Mills, Open Winches, Drag Lines, Sliding Surfaces

Available in Tubes



TEMP-PLATE #2747

Multi-Purpose, High Temperature Red Grease

- Thickener: Bentonite Clay
- Color: Red
- Dropping Point: +550°F (non-melt)
- NLGI Grade 2
- Timken Load: 65 LBS
- Performs at a wide variety of temperatures up to 550°F
- Water resistant & reduces shock & noise
- High shock & impact resistance, will not pound or thin out
- Contains special corrosion & rust inhibitors
- Seals out dust-dirt contaminants, prolongs life of metal parts

Applications: Automotive, Construction, Bottling Plants, Cement Plants, Paper Mills, Sewage Plants, Steel Mills, Dairies, Textile Plants, Oil Fields, Mining, Farms, Lumber Mills, Aircraft, Food Plants, Cotton Gins, Elevators, Air Conditioning

Available in 45lb Pails



TEMP-PLATE II #2748

Multi-Purpose, High Temperature Red Grease

- Base Oil: Synthetic Blend
- Thickener: Bentonite Clay
- Color: Red
- Dropping Point: >500°F (260°C) (non-melt)
- NLGI Grade 2
- Timken Load: 65 LBS
- Performs at a high temperature of 500°F
- Contains EP, antioxidant, corrosion & rust inhibitors
- Water resistant & reduces shock & noise
- High shock & impact resistance, will not pound or thin out
- Seals out dust-dirt contaminants, prolongs life of metal parts

Applications: Automotive/Aircraft, Construction, Bottling Plants, Cotton Gins, Cement Plants, Paper Mills, Sewage Plants, Elevators, Steel Mills, Farms/Dairies, Textile Plants, Air Conditioning, Oil Fields, Mining, Lumber Mills, Food Plants

Available in Tubes, 35lb Pails & 120lb Drums



LITHIUM COMPLEX

LITHO-LUBE II 30T #2724

Lithium Complex Multi-Purpose Grease

- Base Oil: Mineral Oil
- Thickener: Lithium complex
- Color: Amber
- Dropping Point: 500°F (ASTM D566)
- NLGI Grade 2
- Timken OK Load of 30 LBS
- Temperature Range: 0°F to 300°F (-18°C to 150°C)
- Excellent pressure resistance
- Excellent shearability, shelf life, water resistance & anti-corrosion properties

Applications: Wheel Bearings, Steel Linkages, Roller Bearings, Presses, Pivot Points, Chassis, Lubrication, Axle Assemblies, Spring Pins, Plain Bearings, Winches, Bushings, Tie-Rod Ends & Steering Knuckles, Universal Joints, King Pins, Thrust Bearings, Hinges, Bus County Barns, Tractor, Mowers & Farm Equipment, Pivot Pins, Ball Joints, Gears, Latches, Ball Joints, Snow Blowers, Fifth-Wheel Hitch Plate, Water Pump Bearings, Electric Motors, Slides, Universal Joints

Available in Tubes



LITHO-LUBE II 65T #2723

Lithium Complex Multi-Purpose Grease with Moly

- Base Oil: Mineral Oil
- Thickener: Lithium complex
- Contains Moly Pro EP additive
- Color: Amber
- Dropping Point: 500°F (260°C) (ASTM D566)
- NLGI Grade 2
- Timken OK Load of 65 LBS
- Temperature Range: 0°F to 300°F (-18°C to 150°C)
- Excellent pressure resistance
- Excellent shearability, shelf life, water resistance & anti-corrosion properties

Applications: Mining Equipment, Golf Courses, Industrial Plants, Wheel Bearings, Steering Linkages, Roller Bearings, Presses, Pivot Points, Steering Knuckles, Oilfield, Semi-Truck, Quarry, Axle, Assemblies, Spring Pins, Plain Bearings, Winches, Bushings, Snow Blowers, Off-Road Construction, Automotive, Ball Roller, Universal Joints, King Pins, Thrust Bearings, Hinges, Bus & Country Barns, Chassis Lubrication, Marine Refinery, Pumps, Pivot Pins, Ball Joints, Gears, Latches, Slides, Agriculture, Bus, Train, Railroad, Subway, Sleeve Bearings, Fifth-Wheel Hitch Bearings, Water Pump Bearings, Electric Motors, Tractor, Mowers & Farm Equipment, Tie-Rod Ends

Available in Tubes & 45lb Pails



ALUMINUM COMPLEX

PRO LUBE #2787

Multi-Purpose, Semi-Synthetic Food Grade Grease

- Base Oil: Semi-Synthetic
- Thickener: Aluminum Complex
- Color: White
- Dropping Point: +500°F
- NLGI Grade 2
- Timken Load: 50
- Extremely water resistant
- Non-melting
- High film strength
- Prevents rust and corrosion
- Reduces friction and wear

Applications: Cables, Bearings, Grid Belts, Rollers, Cams, Conveyors, Guide Rails, Slicers, Casters, Dicers, Open Lube Points, Slides, Chains, Gears, Plungers, Sprockets

Available in Tubes



CALCIUM SULFONATE COMPLEX

BOOM GLIDE #2783

Telescopic Boom Lubricant with Moly

- Base Oil: High Viscosity Base Oil
- Thickener: Calcium Sulfonate Complex
- Contains 5% Molybdenum
- Color: Gray/Black
- Dropping Point: +550°F
- NLGI Grade 2
- Timken Load: >80
- Reduces wear pad friction
- Extremely water resistant
- Balanced Timken & Weld Load for superior EP performance
- Excellent mechanical stability
- Suitable for high temperature applications
- Does not drip out under running conditions
- Outstanding extreme pressure properties
- Protects equipment from rusting under wet & water ingress conditions
- Formulated specifically for use on cranes, aerial lifts, shooting boom forklifts, hydraulic telescoping excavators & material handling equipment



Applications: Booms, Cranes, Aerial Lifts, Shooting Boom Forklifts, Hydraulic Telescoping Excavators, Track Hoe, Gradalls, Outriggers, Truck-Mounted Gradalls, Reach Forklifts, Manlifts, Scissor Lifts, Vertical Mast Lift

[Available in Tubes, 7lb Pails & 35lb Pails](#)

HIGH LOAD #2792

Extreme Pressure Calcium Sulfonate Grease

- Base Oil: Calcium sulfonate base
- Thickener: Calcium Sulfonate Complex
- Color: Green
- Dropping Point: 550°F min
- NLGI Grade 2
- Timken Load: 60
- Highly water washout resistant
- Extreme pressure properties
- Excellent pumping properties
- Excellent rust protection, even under humid & water ingress conditions
- Recommended for centralized lubrication systems



Applications: High Speed Bearings, Electric motors, Fifth Wheels, Steering Linkage, Water Pumps, Ball Joints, Universal Joints, Pilot Bearings, Centralized Lubricating Systems, Low Speed Bearings

[Available in Tubes](#)

SILICA

ATOMIC LUBE #2790

Multi-Purpose, Hi-Temp, Extreme Pressure Grease

- Base Oil: Petroleum & Synthetic Polymers
- Thickener: Amorphous fumed silica
- Color: Red
- Dropping Point: None.
- NLGI Grade 2
- Timken Load: 60
- Temperature Range: 10°F to 525°F
- Withstands extreme pressure
- Extremely water washout resistant
- Will not melt or run out
- Prevents rust & corrosion
- Excellent metal adherence
- Reduces wear



Applications: Ball Bearings, Slides, Gears, Cranes, Roller Bearings, Valve Operators, Screw Drives, Wheel Bearings, Bushings, Valve Bearings, Couplings, Chassis

[Available in Tubes](#)

GLOSSARY

In addition to what we have previously described, here are a few other lubricating terms that you need to be familiar with:

- **Additive:** Any material added to a lubricating grease or oil to improve its performance. Examples are oxidation inhibitors, corrosion inhibitors or extreme pressure additives.
- **Adhesive (Tackiness Agents):** Highly elastic polymers hold grease together and in place to prevent the entry of contaminants, squeeze-out, channeling and sling-off.
- **Aluminum Complex Base:** Withstands high heat - is the only lubricant with heat reversion characteristics. Resists water washout.
- **Anti-Wear and Friction Reducing Additives:** Prevent metal-to-metal contact, two-surface wear, vibration and chatter. Keeps high friction surfaces, such as bearings, properly lubricated to prevent metal loss, downtime, and replacement expenses.
- **API (American Petroleum Institute):** Society organized to further the interest of the petroleum industry. It serves to clear information, conduct research, improve marketing conditions, etc. Developed API Service Classification for crankcase oils.
- **Bentonite:** A naturally occurring earth or clay. It is used as a grease thickener and produces a non-melt grease.
- **Bleed Resistance:** The resistance of grease to separate.
- **Boundary Lubrication:** Also known as thin film lubrication, boundary lubricating conditions occur in the absence of a full fluid film, which completely covers up, and thus separates, two metal surfaces. It is in boundary lubricating conditions that antiwear and extreme pressure additives add to the lubricating qualities of the lubricant used.
- **Cohesive:** In terms of lubricants, it refers to the molecular attraction of the lubricant to itself, causing the lubricant to stick together, thus resisting flow (running).
- **Consistency:** Just as viscosity grade is the basic property of lubricating oil, consistency is the basic property of grease. It is the softness or hardness, i.e. the degree, to which grease resists displacement under the application of force.
- **Corrosion:** Chemical attack or action on metals by acids, oxygen alkalis, chlorine or other chemicals. This is distinct from metal destruction by wear.
- **Corrosion Inhibitor:** Additive for protecting lubricated surfaces against chemical attack by water, acids or other contaminants.
- **Corrosive Wear:** Removal of materials by corrosive action. Example: Acid corrosion and rust.
- **Dropping Point/ Service Temperature:** The temperature at which the grease turns to a liquid. The dropping point of grease is the temperature at which a drop of grease falls from the opening of a test cup under prescribed test conditions.
- **E.P. (Extreme Pressure) Agents:** An additive introduced into a lubricator to impart load carrying or anti-weld qualities.
- **E.P. (Extreme Pressure) Lubricants:** Lubricants that have E.P. agents added or that have inherent properties which permit them to carry appreciably higher loads than those carried by other lubricants.
- **Film Strength:** The ability of a film of lubricant to resist rupture due to load, speed and temperature.
- **Fire Point:** The temperature at which oil will burn continually when exposed to a flame under atmospheric conditions.
- **Flash Point:** The lowest temperature at which the air-vapor mix of a petroleum product or other combustible fluid will "flash" in the presence of a small flame.

- **Food Plant Lubricants:** Special lubricants that are designed to be used where incidental food contact may occur. These lubricant ingredients must be approved by the Food and Drug Administration (FDA) and the United State Department of Agriculture (USDA). This approval is not an endorsement of that product by these agencies but only indicates that they meet certain standards.
- **Graphite:** Layered solid that provides added protection at high temperatures and improves lubrication in wet conditions
- **Hydrodynamic Lubrication:** Also known as full fluid film lubrication, it occurs because of the “pumping” action developed by the sliding of one surface over another in contact with a lubricating oil. Adhesion to the moving surface draws the oil into the high-pressure area between the surfaces and viscosity retards the tendency to squeeze the oil out. If the pressure developed by this action is sufficient to completely separate the two surfaces, full fluid film lubrication is said to occur.
- **Lubricant:** A fluid, plastic or solid material capable of forming a friction reducing film between two rubbing surfaces. The most common lubricants are petroleum oils, greases and solid lubricants of which molybdenum disulfide is a prime example.
- **Molybdenum Disulfide:** Layered solid lubricant that plates on metal surfaces to provide excellent protection against wear on heavily loaded surfaces and in dusty, dirty environment. for excellent heavy load protection. Provides the benefits of moly without the black.
- **Multi-stroke Penetration:** The ability of grease to resist a change in consistency during mechanical working.
- **NLGI Number:** A numerical scale for classifying the consistency range of lubricating greases. Based on the ASTM penetration number, NLGI grades are in order of increasing consistency (hardness) as follows: NLGI Number: Softest 00 - Hardest 6
- **Oxidation:** A form of chemical deterioration to which petroleum products, like most other organic materials, are subject. Oxidation involves the combining of oxygen with carbon, sulfur and other elements in the oil. It results in breaking down the oil.

NLGI Grade	Worked Penetration After 60 Strokes at 25°C (0.1 mm)	Appearance	Food Consistency Comparison
000	445-475	Fluid	Ketchup
00	400-430	Fluid	Applesauce
0	355-385	Very Soft	Brown Mustard
1	310-340	Soft	Tomato Paste
2	265-295	Moderately Soft	Peanut Butter
3	220-250	Semi-Fluid	Vegetable Shortening
4	175-205	Semi-Hard	Frozen Yogurt
5	130-160	Hard	Smooth Pate
6	85-115	Very Hard	Cheddar Cheese Spread

- **Oxidation Inhibitor:** Substance added to petroleum oils to retard the oxidation process.
- **Polymer:** (Relative to lubricants) Large molecules made up by combining two or more smaller molecules. They are added to lubrication oils to impart special properties to the finished blend. Example: Viscosity improvers.
- **Pour Point:** Lowest temperature (°F) at which oil will flow. It is a factor of significance in cold weather start-up.
- **Premium Grade Base Oil:** Superior grade, highly refined base oil resists oxidation, hardening and high-temperature breakdown to maintain better lubricity.
- **Pumpability:** The ease of pumpability of a grease. Lithium complex or aluminum complex soaps.
- **Rust and Corrosion Inhibitors:** Substance added to petroleum oils to block out corrosive elements such as acids, water, condensate, and steam by forming a protective barrier on equipment surfaces to prevent chemical wear.
- **Rust Inhibitor:** Substance added to petroleum oils to prevent rust or oxidation from occurring on metal surfaces. It forms a thin film, which prevents oxygen from contacting metal surfaces, thus preventing rust.
- **SAE (Society of Automotive Engineers):** Organization responsible for the establishment of many US automotive and aviation standards, including the classification of crankcase oil and gear oil viscosity.
- **Shock Load Reducers:** Cushion impact to minimize the stress, vibration and chatter that can occur under heavy loads and during start-stop operations.
- **Timken Load:** A measure of 1,000 PSI. A Timken Load of 60 would refer to 60,000 PSI. The higher the Timken Load number, the better the grease should hold up under pressure.
- **Thixotropic:** A grease that softens as it is worked by friction (heat).
- **Viscosity:** Measure of fluids resistance to flow. It is ordinarily expressed in terms of the time required for a standard quantity of the fluid at a certain temperature to flow through a standard size opening. The technical or laboratory term for this measurement is called Saybolt Universal Seconds (SUS).
- **Viscosity Grade:** Term used with petroleum oils, which defines a particular oil by a viscosity range.
- **Water Washout:** The ability of the grease to resist water and wet conditions.
- **Wear:** The removal of materials from surfaces in contact with other surfaces.
- **Abrasive Wear:** Removal of materials from surfaces in motion by a cutting or abrasive action of a hard particle between the surfaces (usually a contaminant).
- **Adhesive Wear:** Removal of materials from surfaces in motion as a result of surface contact. Welding, galling and scuffing are examples.
- **Corrosive Wear:** Removal of materials by corrosive action. Example: Acid corrosion and rust.