



GREASE GUIDE

YOUR COMPREHENSIVE GUIDE TO PRO CHEM'S LINE OF GREASES





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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	Calcium	Calcium 12 Hydroxy	Calcium Complex	Clay	Lithium	Lithium 12 Hydroxy	Lithium Complex	Polyurea
B = Borderline Compatibility C = Compatible I = Incompatible X = Same	Aluminum Complex	<i>Pro Lube</i>	X	I	I	B	I	I	I	I	I	B
	Calcium		I	I	X	C	I	B	B	B	I	I
	Calcium 12 Hydroxy		B	C	C	X	B	B	C	C	C	I
	Calcium Complex	<i>Boom Glide, High Load</i>	I	I	I	B	X	I	I	I	C	C
	Clay	<i>Temp-Plate, Hi-Temp</i>	I	I	I	B	I	X	I	I	I	I
	Lithium		I	I	B	C	I	I	X	C	C	I
	Lithium Complex	<i>Litho-Lube</i>	I	I	C	C	C	I	C	C	X	I
	Organo Clay-polymeric complex	<i>Ultra-Temp, OG Compound</i>	I	I	I	B	I	X	I	I	I	I
	Silica	<i>Atomic Lube</i>	C	C	N/A	N/A	I	C	C	N/A	C	I

ATOMIC LUBE #2790

ATOMIC LUBE is a unique blend of petroleum oil and special synthetic polymers that combine to form an extremely water-resistant, tough lubricating film. It prevents water washout and metal-to-metal contact, even under extreme pressure or shock loading. It is a non-melting, premium quality grease specifically designed for very heavy-duty service in multiple adverse environments. Its unique formulation provides the optimum amount of additives to provide protection from rust, corrosion and oxidation. It can be used in a wide variety of applications, reducing the number of lubricants you need to have on hand.

COLOR: Red TIMKEN LOAD: 60 NLGI GRADE: 2 DROPPING POINT: NONE

BOOM GLIDE #2783

BOOM GLIDE has been tested for compatibility with wear pads and seals on mobile cranes and meets the specifications for Grove Equipment WPG and EP-MPG. It is carefully formulated using high viscosity base oil and a proprietary thickener system fortified with Moly and special additives. This unique blend of lubricants provide this grease with outstanding extreme pressure properties, excellent water repellency, oxidation resistance, and a wide operating temperature range. It is formulated with an innovative and synergistic combination of solid lubricants, which physically adhere to the metal surfaces to form a strong protective film, preventing welding and reducing friction, even under the most severe operating conditions, such as very heavy shock loads. It contains no undesirable additives such as antimony, lead, chlorine or zinc. This grease is for virtually any multi-purpose or severe extreme pressure application. BOOM GLIDE meets and exceeds the demanding industrial testing requirements of ASTM D 4950, earning it the GC-LB classification by the National Lubricating Grease Institute.

COLOR: Gray/Black TIMKEN LOAD: >80 NLGI GRADE: 2 DROPPING POINT: +550°F

HI-TEMP #2737

HI-TEMP is a multi-purpose grease that is fortified with special additives, enabling it to withstand the heavy impact and pounding pressures common to heavy equipment. A special additive allows the grease to stay in place and not to spatter or pound out of the bearing or fitting. Most greases manufactured today do not have this anti-spatter capability. HI-TEMP is a non-melt grease with superior water resistance. It is formulated with special lubricity, anti-wear and extreme pressure additives and is fortified with rust and corrosion inhibitors. Superior water resistance enables HI-TEMP to resist most acids, salt spray, steam, dirt, dust and weather.

COLOR: Dark Green Gel TIMKEN LOAD: 65 NLGI GRADE: 2.5 FPA: H2 DROPPING POINT: 550°F
MIL SPECS: MIL-G-18709, MIL-G-46006, MIL-G-24139

HIGH LOAD #2792

HIGH LOAD's formula and manufacturing process has been perfected over the years to produce the best quality Over Based Calcium Sulfonate Complex Grease with outstanding performance in severe operating conditions. The process is controlled to maximize calcite formation and minimize vaterite. This makes HIGH LOAD have outstanding pumpability characteristics where other sulfonate greases fail. This high performance, extreme pressure grease has outstanding film strength and resistance to corrosive saltwater environments. It is made with premium base oils that give equipment a long life and protects against chemical and thermal degradation. It keeps equipment free from metal to metal contact ensuring the best protection, even under very severe operating conditions. It does not contain any harmful additives.

COLOR: Green TIMKEN LOAD: 60 NLGI GRADE: 2 DROPPING POINT: 550°F min

LITHO-LUBE #2723

LITHO-LUBE is a lithium complex based grease formulated with the most up-to-date additive system. It resists thinning or hardening in service, which minimizes leakage and prolongs the service life of the grease by reducing the grease consumption and extending relubrication cycles. Excellent anti-wear properties and water resistance.

COLOR: Blue TIMKEN LOAD: 60 NLGI GRADE: 2 FPA: H2 DROPPING POINT: 500°F+

OG COMPOUND #2759

OG COMPOUND is a dark black, organo-clay compound formulated for heavy industrial applications. It is designed mainly for the open gear application, but because of its extreme tackiness and extreme pressure characteristics, it lends itself to many different applications. It is made from mid-continent refined base oils and organo-clay gelling agents. This excellent compound is formulated with sub-micron size molybdenum disulphide. It is fortified with extreme pressure additives, anticorrosion and antioxidation inhibitors and tackifiers to provide excellent lubrication properties and antiwear protection to metal surfaces. Temperature resistant from 0-500°F.

COLOR: Black TIMKEN LOAD: 70 NLGI GRADE: 2.5 DROPPING POINT: Non-melt

PRO LUBE #2787

PRO LUBE is a multi-purpose, semi-synthetic, non-melting, H1-rated grease that is specifically designed for all general lubrication needs in food processing facilities. Because it is white, odorless, tasteless and H1 rated, it is completely acceptable for use in all areas where incidental food contact may occur. This grease's semisynthetic formula makes it a multiservice maintenance grease. It stays on metal surfaces much longer than conventional greases due to its excellent film-forming characteristics and antiwear qualities. This grease is extremely resistant to water washout, friction and chemical attack, making it the professional's choice for your lubricating needs.

COLOR: White TIMKEN LOAD: 50 NLGI GRADE: 2 DROPPING POINT: 500+°F FPA: H1

TEMP-PLATE #2747/#2746

This is an excellent multi-purpose non-melt grease specially formulated with extreme pressure and antiwear additives to provide heavy-duty service. This product has extra tackifiers to provide excellent adhesive and cohesive properties. It resists most acids, salt, dirt, salt spray, steam, corrosion and oxidation.

COLOR: Red TIMKEN LOAD: 65 NLGI GRADE: 2 FPA: H2 DROPPING POINT: +550°F (non-melt)

ULTRA-TEMP #2739

ULTRA-TEMP synthetic blend grease is a metallic silver combination of an olefinic copolymer anti-seize compound and a non-soap bentone grease. It is fortified with additives that will provide it with excellent lubricating properties, stability and antiwear protection to metal surfaces. This grease is made from mid-continent, high viscosity solvent refined oil, an olefinic copolymer and is fortified with molybdenum disulfide (in submicron) and aluminum. It has a low gumming base and no dropping point so that it will not run out when heated. ULTRA-TEMP is a high temperature anti-friction bearing lubricant that functions in high speed use up to 450°F, slow-speed use up to 750°F. From 750°F through 1100°F it functions as a dry-film lubricant for heavy load and slow-speed use, such as in slides or slow-revolution equipment, with the molybdenum preventing metal-to-metal contact and surface scuffing.

COLOR: Metallic, Silver NLGI GRADE: 2 FPA: H2 DROPPING POINT: None.

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.
- **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 nonmelt grease.
- **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.
- **Drop Point:** 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 antiweld 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.
- **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.
- **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.
- **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.
- **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.
- **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.
- **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.

PRO CHEM, INC.

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