

# FastLUBE Lubricants



- **Anti-Galling**
- **Reduced Friction**
- **Rust & Corrosion Prevention**
- **High Pressure Applications**
- **High Temperature Stability**
- **Thread Sealant**

Products and Prices are subject to updates and changes. Please contact us for current quote.

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# FastLUBE Engineered Lubricants

## FastLUBE AG

### Stops Galling - Great Sealant

Superior lubricant for eliminating galling on stainless steel threaded connections and achieving metal-to-metal seal. AG lowers torque requirements, reduces friction under pressure and is equally effective on other gall-susceptible materials, ferrous alloys, and more common types of carbon steel. AG contains a high percentage of PTFE flakes that will seal off a leak path, prevent the passage of fugitive emissions at pressures up to 20,000 psi, and eliminates the need for Teflon tape.

## FastLUBE RS18

### Stops Galling - Smooth Application

A film-forming lubricant with strong polar attraction, applies readily to threads and other machined parts that are subjected to heavy loads and fictional heat. Eliminates wear and gall on stainless and other threaded connections. Completely water-insoluble, recommended for shafts and other gall-susceptible mechanisms. No stirring needed.

## FastLUBE 70+

### High-Pressure Threading

Provides smooth make-up and breakout and prevents rust and corrosion plus an H2S inhibitor! Contains over 70% pure molybdenum disulfide (more than any other moly-paste.) Perfect for general use on threaded connections and press fits and ideal for use on nut splitter chisels. Use for wear-in applications and a variety of jobs where sliding friction is present.



**Available in Convenient Sizes to Meet Job Needs**

Purchase by single container or by case.

Lubricant Function	AG	RS18	70+
Anti-Galling	E*	E*	G
Water Resistance	F	G	G*
Chemical Resistance	G	G	G
Rust/Corrosion Prevention	F	F	E*
Heat Stability	F	F	G
Sealing	E*	N	N

**E=Excellent; G=Good; F=Fair; N=Not Applicable**

**\*Indicates that this feature is the lubricants primary feature**



# FastLUBE

## Lubricant Fundamentals

The purpose of any lubricant is to reduce friction between moving surfaces, which come in contact with each other. The reduction of friction depends largely on two factors: (1) the speed at which the surfaces are moving relative to one another, and; (2) how much pressure is being exerted between surfaces at the point of contact. Ambient conditions such as extreme heat or salt water may also be determining factors.

Lubrication of threaded connections (nuts and bolts, pipe and fittings, etc.) is a good example of a low speed/extreme pressure application. This is what thread compounds like FastLUBE AG, RS18 and 70+ are designed to do. FastLUBE 444 can also be used as a thread compound, but it was formulated primarily for open gears - another heavily loaded, low speed mechanism.

To maintain a smooth bearing surface for flanks of threads or heavily loaded gears to slide against, solid lubricants are required. Oil or grease alone will squeeze out under pressure, leaving the contact area essentially dry. Fastorq thread compounds contain between 50 and 72% lubricating solids. The

heavier concentration of solids means that the mechanical barrier which Fastorq lubricants provide remains in place more effectively; and that the required torque values are lower and more consistent. Another factor considered in the formulation of our solids packages is that the specific combinations of materials will be very smooth and slippery under pressure.

All of these solids are very soft compared to the metal surfaces they lubricate. As the pressure between these surfaces increases, the mechanical barrier finally wears away. At this point, while some of the lubricant particles have been literally ground into the metal, there is little left to prevent a sharp increase in direct "rubbing together" of the metal causing wear, tearing and galling. Heat from this friction activates a chemical barrier. Additives are included in the lubricant, which react chemically with the metal surfaces. Very small wear particles resulting from this reaction contribute to the lubricating barrier between contact surfaces. In this way, the wear process is controlled so that welding cannot occur.

## Lubricant Q&A

### Why should I use lubricant?

Friction between mating threads and between nut face and flange absorbs about 90% of the energy used to torque (tighten) a threaded fastener (bolt), 10% of the energy creates bolt pre-load. Reducing friction by using a better lubricant reduces the amount of energy (work) required by a factor of ten to one.

### How can I prevent bolts and nuts from freezing up (galling) when tightening or taking them apart?

Threads gall due to metal to metal contact between thread surfaces. To avoid galling use a lubricant with a high percentage of solids which will remain on the threads during the service life of the system. Choose a lubricant with a temperature rating higher than the temperature experienced by the bolt in service.

### Is tighter always better?

No - Threaded fasteners are designed to apply clamping force within a range dictated by the minimum yield strength of the bolt material and the clamping force required to secure the two or more parts in an assembly.

### If the lubricant is too slippery- won't the nut loosen more easily?

No, a low coefficient of friction of the lubricant by itself will not cause loosening unless dynamic forces are present which momentarily reduce the preload and subsequently the friction in the bolt and allow the nut and bolt to turn relative to each other. Dynamic forces may be created by vibration or temperature change among others. If preload is greater than the loads

created by the dynamic forces, bolt load loss (loosening) will be avoided or at least minimized.

### How much torque should I put on an 'X' sized bolt?

The amount of torque depends on a large number of factors. The following is a list of the most common factors required to determine torque.

1. What lubricant is being used?
2. What is the diameter and thread pitch of the bolt?
3. What is the minimum yield strength of the bolt material?
4. What is the bolt material? i.e. ASTM A193 B7, SAE J429 Grade 8, etc.
5. What temperature are the bolts when being lubricated and tightened?
6. What bolt load (tension) do you want to achieve?

Are there critical factors involved such as the maximum compression load allowed on a gasket or sealing surface?

If a torque value is specified for the job you are doing; check the factors involved to insure you are getting the result the designer intended.

### Why is it required to use a "star" or "criss-cross" pattern and two or three passes when tightening bolts in a pattern?

These methods are used to apply uniform bolt load in each bolt. The designer has specified the size and number of bolts to secure the parts of an assembly. If some bolts are tightened to a greater bolt load than others; they may carry a greater load in operation, causing a bolt failure.



# FastLUBE AG

AG thread lubricant is proven to eliminate galling on stainless steel threaded connections. It performs as an excellent sealant and lowers torque requirements, as proper make-up is achieved quickly with minimum torque.

In addition to eliminating galling on stainless steel threads, AG is equally effective on other gall-susceptible materials, as well as ferrous alloys and may also be used on more common types of carbon steel. It has passed both the "Shrimp Test" (drilling fluid toxicity test) and the Static Sheen Test in accordance with EPA standards.

AG contains a high percentage of PTFE flake that will seal off a leak path and prevent the passage of fugitive emissions at pressures up to 20,000 PSI. The need for Teflon tape is eliminated. AG contains no metals or other ingredients which may be hygienically or environmentally harmful.

AG is an excellent lubricant for reducing friction. With the use of this superior lubricant, a connection can be tightened until a metal to metal seal is achieved - without galling. This reduced friction under pressure means that proper make-up can be achieved quicker and with less torque. AG is recommended for use as a thread compound in applications such as bolted joints, pipe and fittings, and for temperatures not exceeding 550°F.

*AG Demonstrated: The threads of a stainless steel bolt have been distorted or flattened by hammering. Normally, the threads would be ruined and the bolt discarded. FASTORQ A/G was applied to the damaged threads. A nut was run down over the bolt and the threads were reformed to their original shape. The mating surfaces were once again smooth and even. In another demonstration, a 316 stainless bolt was used to chase new threads in an aluminum block.*

Information	FastLUBE AG
Classification	Paste
Appearance	Bright yellow, grainy
Solids Description	PTFE and a synergistic blend of other lubricating solids
Solids Content	72% by weight
Temperature Range	-30°F to 550°F
Fluid Description Oil	Synthetic and natural oils
Viscosity, SUS	60
Evaporation Rate	None
Solubility	Nil
Thickener	Complex Soap



*"Based on these test results, I believe this compound [Fastorq AG] can probably provide an effective solution to many, if not all, of the routinely occurring stainless steel thread galling problems."*

*- Joe Greenslade  
"New Comanud Overcomes  
Stainless Bolt and Nut Thread Galling"  
January/February 2003 edition*

Information	FastLUBE RS18
NLGI Grade	2
Primary Functions	Extreme pressure, anti-galling
Appearance	Yellow, smooth
Solids Content	50%
Temperature Range	0°F to 300°F
Oil Description	Synthetic
Viscosity, SUS @ 100°F	730
Evaporation Rate	None
Solubility	Nil
Thickener	Inorganic

# FastLUBE RS18

RS18 is an excellent thread lubricant that also eliminates galling on stainless or other gall-susceptible threaded connections. The smooth consistency makes it easy to apply. RS18 does not reduce torque requirements to levels below those of other compounds. This is an important feature for applications involving rotary shouldered connections or in other situations where over-torquing is a concern.

RS18 is also recommended for lubrication of shafts or other gall-susceptible mechanisms, which would normally be lubricated with smooth extreme pressure grease. It is intended for use at temperatures ranging from zero to 300°F. In addition, it is completely water-insoluble.

RS18 is a film forming lubricant. It has a strong polar attraction to metal surfaces and applies readily to threads or other machined parts. During use, a thin resilient coating is formed on areas subject to heavy loading and frictional heat. This thin layer helps prevent further abrasive contact between surfaces. No stirring is needed prior to use.



# FastLUBE 70+

70+ is a thread compound formulated to provide smooth make-up and breakout of threaded connections. Another primary function is the prevention of rust and corrosion.

70+ contains well over 70% pure molybdenum disulfide, more than any other moly paste. For decades, moly has been recognized for its lubricity under pressure and its ability to pack solidly and smoothly into the pores of metal surfaces. It is also noted for its chemical stability at temperatures below 750°F. It contains a significant concentration of rust and corrosion inhibitors. An H<sub>2</sub>S inhibitor is also included.

70+ is recommended for general use on threaded connections and press fits, and performs well as a lubricant for nut splitter chisels. It can also be used on seal rings and as a dressing for packing and o-rings.

70+ works well as a wear-in lubricant and a variety of other applications where sliding friction is present. It is recommended for use at temperatures not exceeding 750°F.

Information	FastLUBE AG
Classification	Paste
Appearance	Dark gray, smooth
Solids Description	Pure molybdenum disulfide
Solids Content	Over 70% by weight
Oxidation of Solids	Begins at 750°F
Oil Description	Mixture: petroleum & synthetic oils
Viscosity, SUS	Not determined
Evaporation Rate	None
Solubility	Nil
Thickener	Complex Soap
5% Salt Spray (ASTM B117)	90 Days, Pass (No Rust)
Humidity Cabinet (ASTM D1748)	90 Days, Pass (No Rust)





# FastLUBE

## Application Table

Product / Application	Features	Temperature Range	Appearance
<b>FastLUBE AG</b> <b><i>Stops Galling - Great Sealant</i></b> 1. Eliminates galling on stainless steel threads 2. Provide high pressure sealing to 20,000 PSI eliminates teflon tape 3. Protect tooling on cold forging & swaging, reduce scrap rate 4. Reduce torque requirements on bolts and threaded fittings	1. Solids content allows threads to reform 2. PTFE flake content seals leak paths 3. Reduced friction under pressure prevents galling on tooling and parts 4. "K" factor of .11 reduces friction, thereby reducing torque requirement	- 30°F to 550°F	Bright Yellow Grainy Paste
<b>FastLUBE RS18</b> <b><i>Stops Galling, Smooth Application</i></b> 1. Eliminates wear and galling on stainless steel threads 2. Provide extreme pressure lubrication on shafts and threads 3. Rotary shoulder connections such as drill pipe and oilfield tubulars	1. Smooth combination of solids prevents galling 2. Film forming lubricant with strong polar attraction to metals 3. No solid flakes or granules, therefore no "stand off" at shoulder	0°F to 300°F	Bright Yellow Smooth Paste
<b>FastLUBE 70+</b> <b><i>High Pressure Threading</i></b> 1. Extreme load thread lubricant 2. Prevents rust and corrosion on threads, shafts and gears 3. Nut Splitter chisel lubricant 4. 5% Salt spray ASTM B117 5. Humidity Cabinet ASTM D1748	1. Contains 70% pure molybdenum disulfide, more than any competitor 2. Contains a high concentration of rust, corrosion and H2S inhibitors 3. Excellent lubricity at high sliding friction 4. 90 days pass, no rust 5. 90 days pass, no rust	Up to 750°F	Dark Gray Smooth Paste

