

LOCTITE

Loctite® Anti-Seize Lubricants Protecting Against

- **Rust**
- **Corrosion**
- **Galling**
- **Seizing**

Loctite® Anti-Seize

Cleaners

Epoxies

Flooring

Hand Cleaners

Wearing Compounds

Urethanes



Anti-Seize Lubricants

Loctite® anti-seize compounds are a group of premium quality products, developed to protect metal parts from rust, corrosion, galling, and seizing. They ease assembly and disassembly of slip-fit, press-fit, and threaded joints and reduce friction and wear on critical operating equipment. Formulated for severe industrial environments, these products protect against high temperatures, heavy loads, chemicals, pounding, and vibration.



C5-A® COPPER ANTI-SEIZE –

The original copper-based anti-seize formulation. The exclusive formula suspends copper and graphite in a high-quality grease. C5-A protects metal parts from rust, corrosion, galling, and seizing at temperatures up to 1800°F. Tested to MIL-A-907.

Recommended for:

- nuts, bolts, studs
- fittings and shafts, machine surfaces
- fittings on steam turbines, pumps, valves,
- flanges, extruders, and dies



SILVER GRADE ANTI-SEIZE –

This general-purpose lubricant fortified with graphite and metallic flake, has a smooth texture and fine particle size, making it suitable for close fitting parts. It is inert and will not evaporate or harden in extreme cold or heat, up to 1600°F.

Recommended for:

- general-purpose machine and bolt assembly
- close tolerance assembly
- fine threads and snug slip fits



NICKEL ANTI-SEIZE –

This premium lubricant has extremely high temperature and chemical resistance. The nickel-based formula is free of copper, lead, sulfides, and chlorides. It is suitable for use with stainless steel and applications involving strong acids, high temperatures (up to 2400°F), and chemicals, or in environments that require a copper-free compound.

Recommended for:

- chemical plants and oil refineries
- water and sewage plants
- environments where a “clean,” inert lubricant is needed



MOLY 50 ANTI-SEIZE –

This general-purpose thread lubricant is formulated from molybdenum disulfide and petrolatum to meet MIL-PRF-83483. Moly 50 provides excellent lubricity and can be used for service up to 750°F.

Recommended for:

- machine and tapered pipe threads
- press-fit and slip-fit joints



HEAVY DUTY ANTI-SEIZE –

This graphite and calcium fluoride formulation provides outstanding lubricity and anti-galling properties at high temperatures (up to 2400°F). Compatible with stainless steel and other nickel alloys, it is free of lead, copper, sulfur, and contains no free metals.

Recommended for:

- OEM specified turbine studs and bolts
- ethylene and acetylene piping
- petrochemical plants
- environments prohibiting the use of copper



ZINC ANTI-SEIZE –

A smooth mixture of zinc dust and petrolatum grease that acts like an "internal galvanizer" by using the electrochemical properties of the zinc to protect nearby iron surfaces. It protects aluminum and ferrous surfaces up to 750°F.

Recommended for:

- protecting aluminum, aluminum alloy, and ferrous metal from seizing and corrosion



MOLY PASTE –

This is the ultimate low-friction lubricant. The special formulation contains 65% molybdenum disulfide in a high-quality grease that provides maximum lubrication at high temperatures (up to 750°F). It protects equipment during break-in, under high static or slow moving loads, and allows maximum clamping from available torque.

Recommended for:

- extreme pressure and heavy loads
- high stress bolting
- splines and slow moving gears
- drawing, shearing, and stamping applications
- smooth, chatter-free press fits



GRAPHITE 50 ANTI-SEIZE –

A non-metallic lubricant formulated from synthetic graphite and petrolatum. It is highly electrically conductive in metal-to-metal joints and can be used for service up to 900°F.

Recommended for:

- machine threads, tapered pipe threads
- spark plug threads



FOOD GRADE ANTI-SEIZE –

A white lubricant for use on equipment with incidental food contact. It prevents galling, friction, and wear on stainless steel and other metal parts and protects metal-to-metal wear surfaces, in temperatures up to 750°F.

Recommended for:

- lubricating and protecting parts in food processing plants, breweries, packaging plants, and hospitals



HIGH PURITY ANTI-SEIZE

Produced under 100% controlled conditions for highest purity and traceability, and marked with quality control test data for traceability, each high purity anti-seize is tested for controlled levels of all halogens, sulfur, lead, zinc, tin, cadmium, and mercury.

N-1000 HIGH PURITY ANTI-SEIZE –

N-1000 is a copper-based lubricant suitable for critical, long-term stainless steel applications due to its low total chlorine content (< 50 ppm) and high nickel alloy bolting, due to its low sulfide content (< 100 ppm), in temperatures up to 1800°F.

Recommended for:

- nuclear power plant hardware on Class 2 & 3 and non-wetted Class 1 threaded connections, shaft assemblies, and instrumentation
- bolts, studs, valves, pipe fittings, slip fits, and press fits in chemical plants, pharmaceutical plants, paper mill, and other locations where stainless steel fasteners are used



HIGH PERFORMANCE N-5000 HIGH PURITY ANTI-SEIZE –

This is a specially- formulated, nickel-based lubricant that provides significant improvement in lubrication and gives more uniform torque tension. It is used when extra lubricity is required and is suitable for use in nuclear reactors and water/steam systems (wetted Class 1 systems). It is copper-free to below 50 ppm and can be used in temperatures up to 2400°F.

Recommended for:

- nuclear power plant hardware Class 1, 2, 3 fittings in reactors, steam generators, turbines
- alloy bolting in fossil fuel power plants where minimum chlorides and sulfur are desired



N-5000 HIGH PURITY ANTI-SEIZE –

N-5000 is a nickel-based lubricant that is suitable for use in nuclear reactors and water/steam systems (wetted Class 1 systems). It is copper-free to below 50 ppm and can be used in temperatures up to 2400°F.

Recommended for:

- nuclear power plant hardware Class 1, 2, 3 fittings in reactors, steam generators, turbines
- alloy bolting in fossil fuel power plants where minimum chlorides and sulfur are desired



N-7000 HIGH PURITY ANTI-SEIZE –

This metal-free formulation provides high levels of purity and excellent lubricating properties without the presence of nickel, copper, or any metals. Developed to protect stainless steel and other proprietary alloys made for major nuclear suppliers. It can be used in temperatures up to 2400°F.

Recommended for:

- nuclear power plant hardware Class 1, 2, 3 fittings
- use as a nuclear valve stem lubricant



ANTI-SEIZE COMPOUND-

Protects mated metal parts against friction, galling, and corrosion. Reduces wrench torque to facilitate assembly and disassembly of threaded connections.

TORQUE GUIDE

Proper clamp load is an essential part of any bolted assembly for trouble-free operations. Torquing either nut or bolt creates the clamp load. An anti-seize lubricant used on a bolt helps to develop greater clamp load for the same torque compared to an unlubricated bolt. An additional benefit is greater uniformity in clamp load among a series of bolts. The relationship between torque and clamp load is expressed in the following equation:



Where:

- T = KFD
- T = Torque (in-lb, ft-lb, N-m)
- F = Clamp Load (lb, N)
- D = Nominal diameter of bolt (in, ft, m)
- K = Torque coefficient or nut factor, determined experimentally

K Factors: K factors are obtained on Grade 8, 1/2" steel bolts and grade 5 nuts by a test procedure which measures torque tension properties. Lubricant was applied to the bolt threads and both faces of the washer.

See the Properties Chart for the torque coefficient or K value for the anti-seize compounds.

Loctite believes that these data fairly represent performance to be expected. However, Loctite makes no warranty of specific performance on any individual fastener. In critical applications, it is necessary to determine K values independently.

Note: There are two "coefficients" used to express the relationship between torque and tension: torque coefficient (also called "nut factor") is the most commonly used. A different concept is the "friction coefficient," which has value 2/3 (or 67%) of the torque coefficient.

PROPERTIES CHART

PRODUCT	Item Number	Container	Temperature Resistance	Color	K Value
C5-A® Copper Based Anti-Seize	51229	2 gm pouch	1800° F	Copper	0.16
	51277	7 gm pouch			
	51001	1 oz. tube			
	51002	4 oz. tube			
	51144	4 oz. brush-top can			
	51147	8 oz. brush-top can			
	51005	10 oz. brush-top can			
	51003	12 oz. aerosol			
	51004	13 oz. cartridge			
	51006	1 lb. can			
	51007	1 lb. brush-top can			
	51008	2.5 lb. can			
	51009	8 lb. can			
51010	25 lb. can				
51011	42 lb. pail				
51146	425 lb. drum				
Silver Grade Anti-Seize	80209	4 oz. brush-top can	1600°F	Silver	0.18
	76732	8 oz. brush-top can			
	76759	12 oz. aerosol			
	76764	1 lb. brush-top can			
	80206	1 gal. can			
	76775	5 gal. pail			
Nickel Anti-Seize	77124	8 oz. brush-top can	2400°F	Silver	0.13
	51286	12 oz. aerosol			
	51102	1 lb. can			
	77164	1 lb. brush-top can			
	51152	8 lb. can			
	77175	5 gal. pail			
Moly-50 Anti-Seize	51094	1 lb. can	750°F	Black	0.13
Zinc Anti-Seize	39901	1 lb. can	750°F	Grey	0.15
Graphite-50 Anti-Seize	51084	1 lb. can	900°F	Black	0.13
Heavy Duty Anti-Seize	51609	1 oz. tube	2400°F	Black	0.16
	51605	9 oz. brush-top can			
	51606	1 lb. brush-top can			
	51607	2 lb. can			
	51608	45 lb. pail			
Moly Paste	51050	12 oz. aerosol	750°F	Black	0.11
	51048	8 oz. brush-top can			
	51049	1 lb. can			
	51145	15 lb. can			
Food Grade Anti-Seize	51168	8 oz. brush-top can	750°F	White	0.16
	51170	2 lb. can			
	51171	40 lb. pail			
N-1000 Anti-Seize	51115	8 oz. brush-top can	1800°F	Copper	0.17
	51116	1 lb. can			
	51117	2 lb. can			
N-5000 Anti-Seize	51346	1 oz. tube	2400°F	Silver	0.15
	51243	8 oz. brush-top can			
	51269	1 lb. brush-top can			
	51246	2 lb. can			
	51245	8 lb. can			
High Performance N-5000 Anti-Seize	51572	1 lb. brush-top can	2400°F	Silver	0.15
N-7000 Anti-Seize	51272	8 oz. brush-top can	2400°F	Silver	0.16
	51270	1 lb. brush-top can			
	51273	2 lb. brush-top can			

**APPLICATION
SELECTION GUIDE**

PRODUCT	Maximum Anti-Seize Properties	General Purpose Anti-Seize	Extreme High Temperature Resistance (to 2400°F)	High Temperature Resistance (to 1600°F-1800°F)	Extreme Chemical Resistance	For Maximum Lubricity	Electrically Conductive	For Aluminum/Soft Metals	For Stainless Steel	Copper-free Formulation	For Low Speeds, High Loads	High Purity
C5-A® Copper Based Anti-Seize	●	●		●			●	●	●			
Silver Grade Anti-Seize	●	●		●			●	●	●			
Nickel Anti-Seize	●		●		●		●		●	●		
Moly-50 Anti-Seize	○					●			●	●	●	
Zinc Anti-Seize	○						○	●	●			
Graphite-50 Anti-Seize	○	○			●		●	●		●		
Heavy Duty Anti-Seize	●		●		●		●	●	●	●		
Moly Paste	○					●			●	●	●	
Food Grade Anti-Seize	○							●	●	●		
N-1000 Anti-Seize	●						●		●			●
N-5000 Anti-Seize	●		●		●		●		●	●		●
High Performance N-5000 Anti-Seize	●		●		●	●	●		●	●		●
N-7000 Anti-Seize	●		●		●		●		●	●		●

● Preferred Choice ● Good Choice ○ Acceptable Choice

Available From:

LOCTITE

Loctite Americas
 Rocky Hill, CT 06067
 1-800-LOCTITE (562-8483)
 In Canada: 1-800-263-5043