

ANTI-SEIZE SA 610

Anti-Seize Paste for High Temperatures and Superalloys

Description

ROCOL® ANTI-SEIZE SA 610 is an anti-seize paste optimised for high temperature superalloys, Inconel, stainless steel and silver coated fasteners, particularly for fasteners used in high temperature power generation and aerospace systems.

ROCOL® ANTI-SEIZE SA 610 has been designed as an anti-seize and assembly lubricant, to provide accurate assembly, and to prevent galling and seizure on disassembly, even after exposure to extreme conditions

ROCOL® ANTI-SEIZE SA 610 does not contain metal powders or calcium, and has extremely low sulphur and chlorine levels.

Applications and Industries

- Steam and Gas Turbines
- Aerospace
- Power Generation
- Chemical and Petrochemical

Features and Benefits

- Outstanding temperature range -40°C to +1000°C
- Provides controlled friction on assembly, enabling precise tensioning.
- Protects fastener surfaces from galling and seizure, providing controlled release.

Usage and Storage Guidance

- ANTI-SEIZE SA 610 should be stored in its unopened original container.
- Storage temperature should be controlled to between +1°C and +40°C.
- Shelf life is 5 years from date of manufacture
- Apply a thin film by brushing or wiping on to a clean and degreased surface.

Approvals and Certifications

Siemens Energy Small Gas Turbines E1B100634526

Pack Sizes

Part Code	Pack Size
14153	500g

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Parameter	Test Method	Value
Appearance	n/a	Black/Grey Paste
Base Type	n/a	Synthetic Hydrocarbon
Solids	n/a	Graphite, Inorganic Solids
Solids Content	n/a	Approximately 34%
Temperature Range	n/a	-40 °C to +1000 °C
Approximate Coverage	0.1mm film thickness	10m ² /kg

Safety Datasheets

These are available at <https://www.rocol.com/datasheets>. For further assistance, please contact us via the ROCOL website or using the details below.

Note

The information in this Technical Datasheet is informed by our experience and feedback from industry. There are many variables outside our control or knowledge which affect the use and performance of our products, for which reason it is given without responsibility. Values quoted are typical and do not constitute a specification.

If you'd like to discuss the suitability of any ROCOL solution for your system, please get in touch.

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Torque Setting for Threaded Fasteners

When a thread compound is applied to a fastener that will be torque tightened, the torque setting will require adjustment to achieve the correct tension in the fastener. Correct torque settings can be calculated using the methods below.

The following parameters were derived from the tension-torsion relationship measured on M12 x 50mm setscrews with 1.75mm thread pitch, full nut and Form A washers. Fasteners were degreased and a thin layer of thread compound applied to threads, nut face and washers. Data are for fasteners at 75% rated yield stress:

Fastener Material	Coefficient of Friction (μ)	K-Factor
8.8 Steel Plain Finish	0.135	0.18
A2-70 Stainless Steel	0.151	0.20
Inconel 718 (Silver Coated Nut) *	0.131	0.17
A2-70 Stainless Steel (Nickel Coated Nut with Silver Coated Insert) **	0.103	0.14
Waspaloy	0.169	0.22

$$T = F \times \left[(0.159 \times P) + (0.577 \times d \times \mu) + (D_f \times \frac{\mu}{2}) \right]$$

T = Torque Applied (Nm)
 F = Tension Generated in Fastener (N)
 P = Thread Pitch (m)
 d = Pitch Diameter (m)
 D_f = Nut Friction Diameter (m)
 μ = Coefficient of Friction

$$T = K \times F \times D$$

T = Torque Applied (Nm)
 F = Tension Generated in Fastener (N)
 D = Nut Nominal Bolt Diameter (m)
 K = K-Factor

Many parameters affect the tension-torsion relationship of fasteners, including: Bolt geometry, surface finish, lubricant application method, joint material, torque application method, variation in fastener manufacture etc. Therefore, these parameters above are for guidance only, especially if a different material is used or if geometry is significantly different to M12. Any calculated values are a predictive tool and the final tension should be verified, especially in critical applications. These values do not constitute a specification. *This value represents 75% of the yield strength at 550°C, a typical application temperature. **This value has been adjusted to remove the influence of the insert's prevailing torque, according to DIN 65946.

For further guidance, please speak to your usual ROCOL contact or technical.lubricants@rocol.com.

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