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# Technical Data

## 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 contains metal powders or calcium, and has extremely low sulphur and chlorine levels.

#### Applications / Industries

- Steam and Gas Turbines
- Aerospace
- Power Generation

#### Approvals

#### Features & 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.

#### Directions For Use

- 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.

#### Further Information

For pack sizes, part codes and safety data sheets please visit www.rocol.com or get in touch with our customer service team who will be happy to help: customer.service@rocol.com

| Property | Test Method | Result |
|---|---|---|
| **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** | **10m²/kg** |

*Values above are typical and do not constitute a specification*

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**T** +44 (0) 113 232 2600 **F** +44 (0) 113 232 2740
**E** customer.service@rocol.com **www.rocol.com**
ROCOL House, Swillington, Leeds LS26 8BS



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bsi. ISO 9001 Quality Management FM 12448 | AS/EN 9100 Series Aerospace FM 667905 | ISO 14001 Environmental Management EMS 67596 | OHSAS 18001 Occupational Health and Safety Management OHS 78173

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### Torque Setting

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. Guideline 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 in line with instructions on Page 1. Data are for fasteners at 75% of the 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** |

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

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.*

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