

## EGF Eltinert F Grease

The Eltinert series of contact lubricants have been developed to provide superior protection to electrical contacts under the most difficult conditions. These include extended periods at high temperatures and under corrosive chemical atmospheres. They are also ideal for the protection of noble metals, either in switches or connectors. EGF has outstanding high temperature performance with less than 1% weight loss in 24 hours at 150°C. EGF is suitable for continuous use up to 200°C and for shorter periods up to 300°C.

- Excellent mechanical lubrication, greatly reduces friction
- Excellent electrical characteristics combined with very good plastics compatibility
- Excellent oxidation and chemical resistance; high protection in harsh environments
- Prevents and cures high contact resistance caused by silicone contamination

**Approvals** **RoHS Compliant (2015/863/EU):** **Yes**

### Typical Properties

|                                                        |                                                                   |
|--------------------------------------------------------|-------------------------------------------------------------------|
| Colour                                                 | White                                                             |
| Density (g/ml)                                         | 1.9                                                               |
| Temperature Range (°C)                                 | -25 to +300                                                       |
| Vapour Pressure                                        | 10 <sup>-8</sup> Torr @ 20°C<br>8 x 10 <sup>-2</sup> Torr @ 250°C |
| Evaporation Weight Loss (% 7 days @ 100°C)             | 0.8                                                               |
| Copper Strip Corrosion (IP154 / ISO 2160)              | ≤1b                                                               |
| Drop Point (IP32 / ISO 2176 (°C))                      | >250                                                              |
| Cone Penetration Worked (ASTM D217, 60 strokes @ 20°C) | 280                                                               |
| Consistency (NLGI)                                     | 2                                                                 |
| Fließdruck (Flow Pressure) (DIN 51805, mbar @ -40°C)   | 1100                                                              |
| Oil Bleed / Separation (IP121)                         | 5%                                                                |
| Plastic Compatibility - ABS                            | Test                                                              |
| Plastic Compatibility - PC                             | Test                                                              |
| Thickener                                              | Fumed Silica                                                      |
| UV Trace                                               | No                                                                |

### Electrical Properties

|                                            |         |
|--------------------------------------------|---------|
| Dielectric Constant (ASTM D877/67 @ 250°C) | 2.1     |
| Dielectric Strength (ASTM D877/67 @ 250°C) | 40kV/mm |

**Base Oil Properties:**

|                                                        |                |
|--------------------------------------------------------|----------------|
| Base Oil Type                                          | PFPE           |
| Base Oil Viscosity @ 40°C (Kinematic Viscosity (cSt))  | 345            |
| Base Oil Viscosity @ 100°C (Kinematic Viscosity (cSt)) | 33             |
| Base Oil Viscosity Index (ASTM D 2270)                 | 135            |
| Pour Point (ASTM D 97 (°C))                            | -25            |
| Flash Point (COC ASTM D 92 (°C))                       | Not Determined |

**Mechanical Properties:**

|                  |       |
|------------------|-------|
| 4 Ball Wear (mm) | 1.071 |
| Weld Load (kgf)  | 400   |

| <b><u>Description</u></b> | <b><u>Packaging</u></b>  | <b><u>Order Code</u></b> | <b><u>Shelf Life</u></b> |
|---------------------------|--------------------------|--------------------------|--------------------------|
| Eltinert F Grease         | 1Kg Bulk<br>10ml syringe | EGF01K<br>EGF10S         | 72 Months<br>48 Months   |

**Typical Product Applications**

Eltinert F grease (EGF) is non-melting and will not migrate from vertical contacts or surfaces. It has similar properties to the oil (EOF) but allows even greater protection from environmental conditions and is also recommended for applications involving heavy arcing. If lower vapour pressure, lower evaporation weight loss or lower temperature capability are required Electrolube DOF may also be considered. A separate data sheet for these products is available.

The polar nature of these lubricants ensures good bonding to all metals, including gold. Although gold itself is not subject to environmental attack, gold plate is porous and attack can occur on the substrate metals, e.g. silver, copper or tin. Eltinert F prevents this attack and can allow the use of thinner gold plate.

Eltinert F fluorinated lubricants have two main areas of application:

1. As contact lubricants - particularly suitable for contacts involving gold and/or aggressive environments e.g., printed circuit edge connectors, plug connectors, rotary and sliding switches.
2. For the lubrication of plastics and rubbers, including those known to be particularly prone to solvent stress cracking.

The following plastics, normally regarded as prone to solvent stress cracking, are unaffected by Eltinert F at 70°C: 'Noryl' (PPO/Polystyrene), Polystyrene, Impact modified polystyrene, ABS, Polycarbonate.

The following vulcanised rubbers showed minimal change in properties at 70°C: Natural rubber, EPDM, SBR, Butadiene-acrylonitrile, Butyl.

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All information is given in good faith but without warranty. Properties are given as a guide only and should not be taken as a specification.

Electrolube cannot be held responsible for the performance of its products within any application determined by the customer, who must satisfy themselves as to the suitability of the product.

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