# UNITREX® Rg-30

Polyetheretherketone

Nytef Plastics, Ltd.

## Message:

Unitrex PEEK is a semi-crystalline high temperature thermoplastic that offers design engineers a truly unique combination of exceptional performance characteristics. When compared with other engineering polymers, this material ranks as the best or nearly the best in every performance category. Unitrex PEEK has a relative thermal index of 480°F and has a UL 94 flammability rating of V-0, with very low levels of smoke generation and toxic gas emission. Additionally, this material exhibits excellent electrical properties, which remain stable over a wide range of both temperatures and frequencies.
Unitrex PEEK is chemically resistant to a wide range of organic and inorganic liquids and is insoluble in all common solvents. In addition, it is unaffected by steam and hot water and has a very low moisture absorption rate. This material offers superior dimensional stability and machines easily. While unfilled Unitrex PEEK offers good wear resistance, Unitrex L has been reinforced with graphite and PTFE to provide an ideal combination of low friction and enhanced wear. For applications that require improved strength and stiffness, a 30% glass fiber filled grade is available (Unitrex Rg-30). Unfilled Unitrex PEEK stock shapes are light beige in color and are available from Nytef Plastics in a full range of heavy gauge rod, plate and tubular bar sizes.
PRODUCT ATTRIBUTES
480°F relative thermal index temperature
Excellent strength, rigidity and toughness, even at elevated temperatures
Chemically resistant to all common solvents
Low moisture absorption
Superior electrical properties
Exceptional dimensional stability
Rated UL V-0 with low smoke and toxic gas emissions
Easily machined and fabricated
FDA compliant
UNITREX Rg
30% Glass fiber filled grade for improved strength and stiffness
UNITREX L
Bearing and wear grade offers lower coefficient of friction and improved wear resistance
INDUSTRIES
Medical and pharmaceutical
Aircraft and aerospace
Fluid handling
Electrical and electronics manufacturing
Automotive and transportation
Petroleum industry
APPLICATIONS
Medical instruments
Analytical instrumentation
Semiconductor wafer handling components
Compressor components and seals
Pump wear rings
Bearings and bushings

| General Information | |
|---|---|
| Filler / Reinforcement | Glass Fiber,30% Filler by Weight |
| Features | Good Chemical Resistance |
| | Good Dimensional Stability |
| | Good Electrical Properties |
| | Good Toughness |
| | High Rigidity |
| | High Stiffness |
| | High Strength |
| | Low Moisture Absorption |

| | |
|---|---|
| | Low Smoke Emission |
| | Low Toxicity |
| | Machinable |
| | Semi Crystalline |
| Uses | Automotive Applications |
| | Bearings |
| | Bushings |
| | Electrical/Electronic Applications |
| | Fluid Handling |
| | Medical Devices |
| | Medical/Healthcare Applications |
| | Pharmaceuticals |
| | Pump Parts |
| | Seals |
| | Semiconductor Molding Compounds |
| Appearance | Beige |
| Forms | Preformed Parts |
| | Rod |

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Specific Gravity | 1.51 | g/cm³ | ASTM D792 |
| Water Absorption | | | ASTM D570 |
| 24 hr | 0.11 | % | |
| Saturation | 0.35 | % | |
| **Hardness** | **Nominal Value** | **Unit** | **Test Method** |
| Rockwell Hardness | | | ASTM D785 |
| M-Scale | 103 | | |
| R-Scale | 124 | | |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Modulus | 6890 | MPa | ASTM D638 |
| Tensile Strength (Yield) | 156 | MPa | ASTM D638 |
| Tensile Elongation (Break) | 2.7 | % | ASTM D638 |
| Flexural Modulus | 7580 | MPa | ASTM D790 |
| Flexural Strength | 250 | MPa | ASTM D790 |
| Compressive Strength | 215 | MPa | ASTM D695 |
| **Impact** | **Nominal Value** | **Unit** | **Test Method** |
| Notched Izod Impact | 96 | J/m | ASTM D256 |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Deflection Temperature Under Load (1.8 MPa, Unannealed) | 316 | °C | ASTM D648 |

| | | | |
|---|---|---|---|
| Peak Melting Temperature | 340 | °C | ASTM D3418 |
| CLTE - Flow | 2.2E-5 | cm/cm/°C | ASTM D696 |
| RTI Elec | 249 | °C | UL 746 |
| RTI Imp | 249 | °C | UL 746 |
| RTI Str | 249 | °C | UL 746 |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Volume Resistivity | > 1.0E+16 | ohms·cm | ASTM D257 |
| Dielectric Strength [1] | 6.9 | kV/mm | ASTM D149 |
| Dielectric Constant | | | ASTM D150 |
| 60 Hz | 3.70 | | |
| 1 MHz | 3.70 | | |
| **Flammability** | **Nominal Value** | **Unit** | **Test Method** |
| Flame Rating (3.18 mm) | V-0 | | UL 94 |
| **NOTE** | | | |
| 1. | Method A (Short-Time) | | |



## Recommended distributors for this material

### Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China