

Evonik CYRO CyRex® 100 Acrylic-Polycarbonate Alloy

Category : Polymer , Thermoplastic , Acrylic (PMMA) , Acrylic/Polycarbonate Alloy , Polycarbonate (PC)

Material Notes:

CYREX 100 alloy has the lowest impact strength of the CYREX alloy grades with 8.0 fpi for notched Izod impact at room temperature. Information provided by Cyro Industries

Order this product through the following link:

http://www.lookpolymers.com/polymer_Evonik-CYRO-CyRex-100-Acrylic-Polycarbonate-Alloy.php

| Physical Properties | Metric | English | Comments |
|-----------------------|--|--|------------|
| Specific Gravity | 1.12 g/cc | 1.12 g/cc | ASTM D792 |
| Water Absorption | <= 0.26 % | <= 0.26 % | ASTM D570 |
| Linear Mold Shrinkage | 0.0040 - 0.0080 cm/cm | 0.0040 - 0.0080 in/in | ASTM D551 |
| Melt Flow | 4.0 g/10 min @Load 3.80 kg, Temperature 230 °C | 4.0 g/10 min @Load 8.38 lb, Temperature 446 °F | ASTM D1238 |

| Mechanical Properties | Metric | English | Comments |
|-------------------------|---|--|-----------|
| Hardness, Rockwell M | 45 | 45 | ASTM D785 |
| Tensile Strength, Yield | 48.3 MPa | 7010 psi | ASTM D638 |
| Elongation at Break | 31 % | 31 % | ASTM D638 |
| Elongation at Yield | 3.7 % | 3.7 % | ASTM D638 |
| Tensile Modulus | 2.10 GPa | 305 ksi | ASTM D638 |
| Flexural Strength | 79.3 MPa | 11500 psi | ASTM D790 |
| Izod Impact, Notched | 4.27 J/cm @Thickness 3.17 mm, Temperature 22.8 °C | 8.00 ft-lb/in @Thickness 0.125 in, Temperature 73.0 °F | |

| Thermal Properties | Metric | English | Comments |
|---|--|---|------------|
| CTE, linear | 93.6 µm/m-°C @Temperature 0.000 - 100 °C | 52.0 µin/in-°F @Temperature 32.0 - 212 °F | ASTM D696 |
| Deflection Temperature at 1.8 MPa (264 psi) | 95.0 °C | 203 °F | ASTM D648 |
| Vicat Softening Point | 119 °C | 246 °F | ASTM D1525 |

| Flammability UL 94 Thermal Properties | HB Metric | HB English | Comments |
|--|--------------|--------------------|--|
| Descriptive Properties | | Value | Comments |
| Chemical Resistance to Acetone | | Non Resistant | Visual Inspection, immersion 24hrs |
| Chemical Resistance to Ammonia | | Limited Resistance | Elongation Retention, immersion 24hrs |
| | | Limited Resistance | Resistance under Strength Retention |
| | | Non Resistant | Elongation Retention, immersion 100hrs |
| | | Resistant | Strength Retention, immersion 100hrs |
| | | Resistant | Strength Retention, immersion 24hrs |
| Chemical Resistance to Antifreeze | | Non Resistant | Strength Retention (3100 psi, 170hrs) |
| Chemical Resistance to Baking Soda Paste | | Resistant | Visual Inspection, exposed 92hrs |
| Chemical Resistance to Bleach 10% | | Resistant | Elongation Retention, immersion 24hrs |
| Chemical Resistance to Butter | | Limited Resistance | Strength Retention (3100 psi, 24hrs) |
| | | Resistant | Stain Resistance, 24hrs |
| Chemical Resistance to Citric Acid Solution (0.1%) | | Resistant | Stain Resistance, 24hrs |
| Chemical Resistance to Coffee | | Resistant | Stain Resistance, 24hrs |
| Chemical Resistance to Diesel Fuel | | Limited Resistance | Strength Retention (1750 psi, 70hrs) |
| Chemical Resistance to DOP (Phthalate) | | Non Resistant | Time to Craze under Stress (4000 psi) |
| Chemical Resistance to Ethanol | | Limited Resistance | Strength Retention, immersion 1000hrs |
| | | Resistant | Strength Retention, immersion 500hrs |
| Chemical Resistance to Ethylene Glycol | | Resistant | Visual Inspection, 1hr immersion |
| Chemical Resistance to Fantastic Cleaner | | Limited Resistance | Resistance under Strength Retention |
| | | Resistant | Strength Retention, immersion 100hrs |
| | | Resistant | Strength Retention, immersion 24hrs |
| | | Resistant | Elongation Retention, immersion 100hrs |
| | | Resistant | Elongation Retention, immersion 24hrs |
| Chemical Resistance to Fluorides | | Resistant | Visual Inspection, exposed 92hrs |
| Chemical Resistance to French's Mustard | | Resistant | Stain Resistance, 24hrs |

| Chemical Resistance to Gasoline Descriptive Properties | Limited Resistance Value | Strength Retention, immersion 500hrs Comments |
|---|-----------------------------|--|
| | Non Resistant | Strength Retention, immersion 1000hrs |
| Chemical Resistance to Glycerin | Resistant | Visual Inspection, immersion 170hrs, 150F |
| Chemical Resistance to Heavy Duty Detergent | Resistant | Visual Inspection, immersion 1000hrs |
| Chemical Resistance to Heptane | Resistant | Strength Retention, immersion 1000hrs |
| Chemical Resistance to Igepal (1%) Solution | Resistant | Strength Retention (3750 psi, 70hrs) |
| Chemical Resistance to IPA | Non Resistant | Strength Retention (3100 psi, 70hrs) |
| | Resistant | Resistance under Strength Retention |
| Chemical Resistance to IPA/Water 50% | Resistant | Visual Inspection, 1hr immersion |
| Chemical Resistance to Kerosene | Resistant | Strength Retention (3100 psi, 10hrs) |
| Chemical Resistance to Lipids | Limited Resistance | Strength Retention (3100 psi, 70hrs) |
| | Resistant | Resistance under Strength Retention |
| Chemical Resistance to Lipstick | Resistant | Stain Resistance, 24hrs |
| Chemical Resistance to Octane/Toluene 75%/25% | Limited Resistance | Strength Retention, immersion 1000hrs |
| | Resistant | Strength Retention, immersion 500hrs |
| Chemical Resistance to Rust Inhibitor Veto #4224 | Non Resistant | Strength Retention (3100 psi, 170hrs) |
| Chemical Resistance to Rust Inhibitor Veto #53359 | Limited Resistance | Strength Retention (3100 psi, 170hrs) |
| Chemical Resistance to Soap and Water | Resistant | Elongation Retention, immersion 100hrs |
| | Resistant | Elongation Retention, immersion 24hrs |
| | Resistant | Resistance under Strength Retention |
| | Resistant | Strength Retention, immersion 100hrs |
| | Resistant | Strength Retention, immersion 24hrs |
| Chemical Resistance to Sodium Hydroxide (0.5%) | Resistant | Stain Resistance, 24hrs |
| Chemical Resistance to Tea | Resistant | Stain Resistance, 24hrs |
| Chemical Resistance to Toothpaste | Resistant | Visual Inspection, exposed 92hrs |
| Chemical Resistance to Transmission Fluid | Resistant | Strength Retention (3100 psi, 170hrs) |
| Chemical Resistance to Vinyl Gasket | Resistant | Strength Retention (3100 psi, 24hrs) |
| Resistance to Palmolive Dishwasher/Water 50% | Resistant | Visual Inspection, immersion 24hrs |

Descriptive Properties

Value

Comments

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