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Ryton® R-4 02

Chevron Phillips Chemical Co. - *Polyphenylene Sulfide*

Unit System:

View

Datasheet **Shown Below**

ASTM Data Sheet 

ISO Data Sheet 

CAMPUS® Data Sheet --

Actions

Product Sourcing 

Supplier Portal --

E-mail a Datasheet 

Product Alternatives 

General Information

Product Description

Ryton® R-4 PPS is a 40% fiberglass reinforced polyphenylene sulfide compound that provides outstanding chemical resistance and mechanical properties even at elevated temperatures.

General

| | |
|--------------------------|---|
| Material Status | <ul style="list-style-type: none"> Commercial: Active |
| Availability | <ul style="list-style-type: none"> Asia Europe North America Pacific Rim South America |
| Test Standards Available | <ul style="list-style-type: none"> ASTM ISO |
| Filler/Reinforcement | <ul style="list-style-type: none"> Glass fiber reinforcement, 40 % Filler by Weight |
| Features | <ul style="list-style-type: none"> Chemical Resistance, Good |
| Appearance | <ul style="list-style-type: none"> Black |
| Forms | <ul style="list-style-type: none"> Pellets |
| Processing Method | <ul style="list-style-type: none"> Injection Molding |

ASTM and ISO Properties ¹

| Physical | Nominal Value | Unit | Test Method |
|--------------------------------------|---------------|-----------------------|---------------|
| Density -Specific Gravity | 1.65 | sp gr 23/23°C | ASTM D792 |
| Mold Shrink, Linear-Flow (0.125 in) | 0.0030 | in/in | ASTM D955 |
| Mold Shrink, Linear-Trans (0.125 in) | 0.0050 | in/in | ASTM D955 |
| Water Absorption @ Equil | 0.020 | % | ASTM D570 |
| Mechanical | Nominal Value | Unit | Test Method |
| Tensile Strength | 22500 | psi | ASTM D638 |
| Tensile Stress at Yield | 20300 | psi | ISO 527-1, -2 |
| Tensile Elongation @ Yld | 1.1 | % | ASTM D638 |
| Tensile Strain at Yield | 1.1 | % | ISO 527-1, -2 |
| Flexural Modulus | 2.20E+6 | psi | ASTM D790 |
| Flexural Modulus | 2.03E+6 | psi | ISO 178 |
| Flexural Strength | 29000 | psi | ASTM D790 |
| Flexural Strength | 28300 | psi | ISO 178 |
| Compressive Strength | 36000 | psi | ASTM D695 |
| Impact | Nominal Value | Unit | Test Method |
| Notched Izod Impact (0.125 in) | 1.40 | ft-lb/in | ASTM D256 |
| Notched Izod Impact Strength | 3.81 | ft-lb/in ² | ISO 180 |
| Unnotched Izod Impact (0.125 in) | 5.50 | ft-lb/in | ASTM D256 |
| Unnotched Izod Impact Strength | 9.52 | ft-lb/in ² | ISO 180 |
| Thermal | Nominal Value | Unit | Test Method |
| DTUL @264psi - Unannealed | 500 | °F | ASTM D648 |

| | | |
|---|--|--------------------|
| CLTE, Flow (TMA) | | ASTM E831 |
| (212 to 392°F (100 to 200°C)) | 8.3E-6 in/in/°F | |
| (-58 to 122°F (-50 to 50°C)) | 0.000011 in/in/°F | |
| CLTE, Transverse (TMA) | | ASTM E831 |
| (-58 to 122°F (-50 to 50°C)) | 0.000022 in/in/°F | |
| (212 to 392°F (100 to 200°C)) | 0.000044 in/in/°F | |
| Thermal Conductivity | 2.2 Btu-in/hr/ft ² /°F | ASTM C177 |
| Electrical | Nominal Value Unit | Test Method |
| Volume Resistivity | 1.0 ohm-cm | ASTM D257 |
| Dielectric Strength | 450 V/mil | ASTM D149 |
| Dielectric Constant | | ASTM D150 |
| (78 °F, 1000 Hz) | 3.800 | |
| (78 °F, 1E+6 Hz) | 3.800 | |
| Dissipation Factor | | ASTM D150 |
| (78 °F, 1000 Hz) | 0.0020 | |
| (78 °F, 1E+6 Hz) | 0.0020 | |
| Arc Resistance | 125 sec | ASTM D495 |
| Flammability | Nominal Value Unit | Test Method |
| Flame Rating - UL | <ul style="list-style-type: none"> ● 5VA ● V-0 | UL 94 |
| UL 746 | Nominal Value Unit | Test Method |
| Comparative Tracking Index (CTI) | 130 V | UL 746 |
| Additional Properties | | |
| Insulation Resistance, 90°C, 95% RH, 48 hr:1e11 ohm | | |
| UL Temperature Index: 200 / 220°C | | |

Processing Information

| Injection | Nominal Value Unit |
|-------------------------|---------------------------------|
| Drying Temperature | 300 to 350 °F |
| Drying Time | 2.0 to 4.0 hr |
| Suggested Max Moisture | 0.020 % |
| Suggested Shot Size | 50 to 80 % |
| Rear Temperature | 600 to 625 °F |
| Middle Temperature | 600 to 650 °F |
| Front Temperature | 600 to 650 °F |
| Nozzle Temperature | 580 to 650 °F |
| Processing (Melt) Temp | 620 to 650 °F |
| Mold Temperature | 275 to 300 °F |
| Back Pressure | 0.00 to 50.0 psi |
| Screw Speed | 100 rpm |
| Clamp Tonnage | 2.5 to 4.0 tons/in ² |
| Cushion | 0.100 to 0.250 in |
| Screw L/D Ratio | 16.0:1.0 to 20.0:1.0 |
| Screw Compression Ratio | 2.5:1.0 |

Notes

1 Typical properties: these are not to be construed as specifications.



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www.ides.com | 800-788-4668 or 307-742-9227 | sales@ides.com