

Technical Data

Product Description

Ryton® R-4 and R-4-02 40% glass fiber reinforced polyphenylene sulfide compounds provide a good combination of mechanical and electrical properties with outstanding chemical resistance, even at elevated temperatures.

General

Material Status	• Commercial: Active
Literature <sup>1</sup>	• <a href="#">Technical Datasheet</a>
UL Yellow Card <sup>2</sup>	• <a href="#">E95746-102108302</a>
Search for UL Yellow Card	• <a href="#">Solvay Specialty Polymers</a> • <a href="#">Ryton®</a>
Availability	• Asia Pacific • Europe • Latin America • North America
Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight
Features	• Chemical Resistant • Good Electrical Properties
Uses	• Automotive Applications
RoHS Compliance	• RoHS Compliant
Appearance	• Black
Forms	• Pellets
Processing Method	• Injection Molding

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity	1.69	1.69 g/cm <sup>3</sup>	ASTM D792
Molding Shrinkage			
Flow : 0.126 in (3.20 mm)	2.0E-3 in/in	0.20 %	
Across Flow : 0.126 in (3.20 mm)	5.0E-3 in/in	0.50 %	
Water Absorption (73°F (23°C), 24 hr)	0.020 %	0.020 %	ASTM D570

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			
--	22000 psi	152 MPa	ASTM D638
--	20300 psi	140 MPa	ISO 527-2
Tensile Elongation			
Break	1.1 %	1.1 %	ASTM D638
Break	1.0 %	1.0 %	ISO 527-2
Flexural Modulus			
--	2.10E+6 psi	14500 MPa	ASTM D790
--	2.03E+6 psi	14000 MPa	ISO 178
Flexural Strength			
--	30000 psi	207 MPa	ASTM D790
--	29000 psi	200 MPa	ISO 178
Compressive Strength	39200 psi	270 MPa	ASTM D695
Poisson's Ratio	0.38	0.38	

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			
0.125 in (3.18 mm)	1.5 ft·lb/in	80 J/m	ASTM D256
--	3.8 ft·lb/in <sup>2</sup>	8.0 kJ/m <sup>2</sup>	ISO 180/A
Unnotched Izod Impact			
0.125 in (3.18 mm)	6.5 ft·lb/in	350 J/m	ASTM D4812
--	9.5 ft·lb/in <sup>2</sup>	20 kJ/m <sup>2</sup>	ISO 180



Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness			ASTM D785
M-Scale	104	104	
R-Scale	122	122	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
264 psi (1.8 MPa), Unannealed	509 °F	265 °C	
CLTE			ASTM E831
Flow : -58 to 122°F (-50 to 50°C)	1.1E-5 in/in/°F	2.0E-5 cm/cm/°C	
Flow : 212 to 392°F (100 to 200°C)	8.3E-6 in/in/°F	1.5E-5 cm/cm/°C	
Transverse : -58 to 122°F (-50 to 50°C)	2.2E-5 in/in/°F	4.0E-5 cm/cm/°C	
Transverse : 212 to 392°F (100 to 200°C)	4.4E-5 in/in/°F	8.0E-5 cm/cm/°C	
Thermal Conductivity	2.2 Btu·in/hr/ft <sup>2</sup> /°F	0.32 W/m/K	
UL Temperature Rating	392 to 428 °F	200 to 220 °C	UL 746B
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	1.0E+16 ohms	1.0E+16 ohms	ASTM D257
Volume Resistivity	1.0E+16 ohms·cm	1.0E+16 ohms·cm	ASTM D257
Dielectric Strength	500 V/mil	20 kV/mm	ASTM D149
Dielectric Constant			ASTM D150
77°F (25°C), 1 kHz	3.90	3.90	
77°F (25°C), 1 MHz	3.80	3.80	
Dissipation Factor			ASTM D150
77°F (25°C), 1 kHz	2.0E-3	2.0E-3	
77°F (25°C), 1 MHz	2.0E-3	2.0E-3	
Arc Resistance	125 sec	125 sec	ASTM D495
Comparative Tracking Index (CTI)	130 V	130 V	UL 746
Insulation Resistance <sup>4</sup> (194°F (90°C))	1.0E+11 ohms	1.0E+11 ohms	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating (0.06 in (1.6 mm))	• V-0 • 5VA	• V-0 • 5VA	UL 94
Oxygen Index	47 %	47 %	ASTM D2863

**Notes**

<sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

<sup>2</sup> A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

<sup>3</sup> Typical properties: these are not to be construed as specifications.

<sup>4</sup> 95%RH, 48 hr



## Where to Buy

### Supplier

**Solvay Specialty Polymers**  
Alpharetta, GA USA  
**Telephone:** 800-621-4557  
**Web:** <http://www.solvayspecialtypolymers.com/>

### Distributor

**AMP FRANCE**  
**Telephone:** +33-3-8920-1390  
**Web:** <http://www.amp.fr/>  
**Availability:** France

**AMP TUNISIA**  
**Telephone:** +216-52-27-21-73  
**Web:** <http://www.amp.fr/>  
**Availability:** Tunisia

**Biesterfeld Plastic GmbH**  
*Biesterfeld Plastic GmbH is a Pan European distribution company. Contact Biesterfeld Plastic GmbH for availability of individual products by country.*  
**Telephone:** +49-40-32008-0  
**Web:** <http://www.biesterfeld-plastic.com/>  
**Availability:** Algeria, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Egypt, France, Germany, Greece, Hungary, Libyan Arab Jamahiriya, Luxembourg, Mauritania, Morocco, Netherlands, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Tunisia

**Chase Plastic Services, Inc.**  
*Chase Plastics Services is a North American distributor with representatives throughout the region. Please find your rep here:*  
<http://www.chaseplastics.com/contact/locations>  
**Telephone:** 800-232-4273  
**Web:** <http://www.chaseplastics.com/>  
**Availability:** North America

**Distrupol Ltd**  
*Distrupol Ltd is a Pan European distribution company. Contact Distrupol Ltd for availability of individual products by country.*  
**Telephone:** 08452003040  
**Web:** <http://www.distrupol.com/>  
**Availability:** Ireland, United Kingdom

**Nexeo Solutions**  
**Telephone:** 888-594-6009  
**Web:** <http://www.nexeosolutions.com/>  
**Availability:** North America

**Tex-Co Resin Distribution, Inc.**  
**Telephone:** 877-908-3926  
**Web:** <http://www.texcoresin.com/>  
**Availability:** North America

