Versollan™ RU 2204X

Thermoplastic Elastomer

Key Characteristics

Product Description

Versollan™ RU 2204X is the first of a new class of high performance, injection moldable TPU alloys developed to offer a rubbery feel and appearance, reduced cycle times, combined with the performance properties associated with TPUs.

- Bonds to PC, ABS, PC/ABS, and Copolyester
- Excellent Abrasion Resistance
- Fast Set Up Rates During Processing
- Good Chemical and Oil Resistance
- Matte Finish
- Rubbery, Soft Touch Feel

General			
Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Latin America • North America	
Features	• Abrasion Resistant	• Chemical Resistant	• Oil Resistant
Appearance	• Natural Color		
Processing Method	• Extrusion	• Injection Molding	

Technical Properties [1]

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density / Specific Gravity	1.14	1.14	ASTM D792
Melt Mass-Flow Rate (MFR)			ASTM D1238
190°C/2.16 kg	11 g/10 min	11 g/10 min	
200°C/5.0 kg	76 g/10 min	76 g/10 min	
Molding Shrinkage - Flow	0.012 to 0.016 in/in	1.2 to 1.6 %	ASTM D955
Elastomers	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Tensile Stress [2, 3] (100% Strain, 73°F (23°C))	270 psi	1.86 MPa	ASTM D412
Tensile Stress [2, 3] (300% Strain, 73°F (23°C))	440 psi	3.03 MPa	ASTM D412
Tensile Strength [2, 3] (Break, 73°F (23°C))	1800 psi	12.4 MPa	ASTM D412
Tensile Elongation [2, 3] (Break, 73°F (23°C))	690 %	690 %	ASTM D412
Tear Strength	240 lbf/in	42.0 kN/m	ASTM D624
Compression Set (73°F (23°C), 22 hr)	26 %	26 %	ASTM D395B
Hardness	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Durometer Hardness (Shore A, 10 sec)	55	55	ASTM D2240
Fill Analysis	**Typical Value (English)**	**Typical Value (SI)**	**Test Method**
Apparent Viscosity			ASTM D3835
392°F (200°C), 1340 sec^-1	69.0 Pa·s	69.0 Pa·s	
392°F (200°C), 11200 sec^-1	13.9 Pa·s	13.9 Pa·s	

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	120 to 130 °F	49 to 54 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr

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Injection	Typical Value (English)	Typical Value (SI)
Suggested Max Moisture	< 0.030 %	< 0.030 %
Suggested Max Regrind	20 %	20 %
Rear Temperature	325 to 370 °F	163 to 188 °C
Middle Temperature	360 to 380 °F	182 to 193 °C
Front Temperature	370 to 410 °F	188 to 210 °C
Nozzle Temperature	380 to 420 °F	193 to 216 °C
Processing (Melt) Temp	370 to 410 °F	188 to 210 °C
Mold Temperature	70 to 90 °F	21 to 32 °C
Back Pressure	0.00 to 80.0 psi	0.00 to 0.552 MPa
Screw Speed	75 to 125 rpm	75 to 125 rpm

Injection Notes

Color concentrates with polyether or polyester-based urethane carriers are most suitable for coloring Versollan™ RU 2204X. Typical letdown ratios are 50:1 to 25:1 - loading levels should be as low as possible to minimize the effect on hardness. A high color match consistency can be obtained by the use of precolored compounds available from GLS. Polypropylene (PP) based color concentrates are not recommended because they significantly affect adhesion of the TPE to the substrate. Concentrates based on TPE should not be used. The final determination of color concentrate suitability should be determined by customer trials.

Purge thoroughly before and after use of this product with a low flow (0.5 - 2.5 MFR) polyethylene (PE) or polypropylene (PP).

Regrind levels up to 20% can be used with Versollan™ RU 2204X with minimal property loss, provided that the regrind is free of contamination. To minimize losses during molding, the melt temperature should remain as low as possible. The final determination of regrind effectiveness should be determined by the customer.

Versollan™ RU 2204X should not be left in the barrel for extended idle periods (greater than 5 minutes).

Suggested Dewpoint: -40°F

Injection Speed: 0.5 to 2 in/sec
1st Stage - Boost Pressure: 300 to 700 psi
2nd Stage - Hold Pressure: 30% of Boost
Hold Time (Thick Part): 4 to 10 sec
Hold Time (Thin Part): 1 to 3 sec

Notes

[1] Typical values are not to be construed as specifications.

[2] Die C

[3] 2 hr

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