

# Versollan™ RU 2204X

Thermoplastic Elastomer

PolyOne Corporation

## Message:

Versollan™RU 2204X is the first product of a new generation of high-performance polyurethane (TPU) alloys that can be molded by injection molding. It can produce a rubber-like feel and appearance and shorten the cycle period, while having the performance of TPU.

New Products. Commercial norms have not yet been established.

can bond with PC, ABS, PC/ABS and copolyester

Good wear resistance

Short preparation time during processing

Good chemical and oil resistance

Matte surface

Similar to rubber, soft to the touch

General Information			
Features	Good wear resistance		
	Good chemical resistance		
	Oil resistance		
Appearance	Natural color		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.14	g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR)			ASTM D1238
190°C/2.16 kg	11	g/10 min	ASTM D1238
200°C/5.0 kg	76	g/10 min	ASTM D1238
Molding Shrinkage - Flow	1.2 - 1.6	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A, 10 sec)	55		ASTM D2240
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress <sup>1</sup>			ASTM D412
100% strain, 23°C <sup>2</sup>	1.86	MPa	ASTM D412
300% strain, 23°C <sup>3</sup>	3.03	MPa	ASTM D412
Tensile Strength (Break, 23°C)	12.4	MPa	ASTM D412
Tensile Elongation (Break, 23°C)	690	%	ASTM D412
Tear Strength	42.0	kN/m	ASTM D624
Compression Set (23°C, 22 hr)	26	%	ASTM D395B
Fill Analysis	Nominal Value	Unit	Test Method
Apparent Viscosity			ASTM D3835
200°C, 1340 sec <sup>-1</sup>	69.0	Pa · s	ASTM D3835
200°C, 11200 sec <sup>-1</sup>	13.9	Pa · s	ASTM D3835

Injection	Nominal Value	Unit
Drying Temperature	48.9 - 54.4	°C
Drying Time	3.0 - 4.0	hr
Suggested Max Moisture	< 0.030	%
Suggested Max Regrind	20	%
Rear Temperature	163 - 188	°C
Middle Temperature	182 - 193	°C
Front Temperature	188 - 210	°C
Nozzle Temperature	193 - 216	°C
Processing (Melt) Temp	188 - 210	°C
Mold Temperature	21.1 - 32.2	°C
Back Pressure	0.00 - 0.552	MPa
Screw Speed	75 - 125	rpm

#### Injection instructions

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

#### NOTE

1. 2 hours
2. Mouth die c
3. C mould

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