# Versollan™ RU 2205-1

## Thermoplastic Elastomer

## Key Characteristics

**Product Description**

Versollan™ RU 2205-1 is a high performance, injection moldable TPU alloy developed to offer a rubbery feel and appearance, reduced cycle times, and performance properties associated with TPUs.

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

| General | | | |
|---|---|---|---|
| Material Status | • Commercial: Active | | |
| Regional Availability | • Africa & Middle East<br>• Asia Pacific | • Latin America<br>• North America | |
| Features | • Abrasion Resistant | • Oil Resistant | |
| Uses | • Consumer Applications<br>• Furniture | • Overmolding<br>• Power/Other Tools | • Soft Touch Applications |
| Agency Ratings | • UL 94 | | |
| RoHS Compliance | • RoHS Compliant | | |
| Appearance | • Natural Color | | |
| Forms | • Pellets | | |
| Processing Method | • Extrusion | • Injection Molding | |

## Technical Properties [1]

| Physical | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Density / Specific Gravity | 1.16 | 1.16 | ASTM D792 |
| Melt Mass-Flow Rate (MFR) | | | ASTM D1238 |
| 190°C/2.16 kg | 7.0 g/10 min | 7.0 g/10 min | |
| 200°C/5.0 kg | 67 g/10 min | 67 g/10 min | |
| Molding Shrinkage - Flow | 0.010 to 0.015 in/in | 1.0 to 1.5 % | ASTM D955 |
| **Elastomers** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Tensile Stress [2, 3] (100% Strain, 73°F (23°C)) | 380 psi | 2.62 MPa | ASTM D412 |
| Tensile Stress [2, 3] (300% Strain, 73°F (23°C)) | 610 psi | 4.21 MPa | ASTM D412 |
| Tensile Strength [2, 3] (Break, 73°F (23°C)) | 2000 psi | 13.8 MPa | ASTM D412 |
| Tensile Elongation [2, 3] (Break, 73°F (23°C)) | 710 % | 710 % | ASTM D412 |
| Tear Strength | 270 lbf/in | 47.3 kN/m | ASTM D624 |
| Compression Set (73°F (23°C), 22 hr) | 15 % | 15 % | ASTM D395B |
| **Hardness** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Durometer Hardness (Shore A, 10 sec) | 65 | 65 | ASTM D2240 |
| **Thermal** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Brittleness Temperature [4] | -88.6 °F | -67.0 °C | ASTM D746 |
| **Flammability** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Flame Rating [5] (0.06 in (1.5 mm)) | HB | HB | UL 94 |

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| Fill Analysis | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Apparent Viscosity | | | ASTM D3835 |
| 392°F (200°C), 11200 sec^-1 | 14.1 Pa·s | 14.1 Pa·s | |

## Processing Information

| Injection | Typical Value (English) | Typical Value (SI) |
|---|---|---|
| Drying Temperature | 125 to 130 °F | 52 to 54 °C |
| Drying Time | 3.0 to 4.0 hr | 3.0 to 4.0 hr |
| Suggested Max Moisture | < 0.030 % | < 0.030 % |
| Suggested Max Regrind | 20 % | 20 % |
| Rear Temperature | 335 to 370 °F | 168 to 188 °C |
| Middle Temperature | 355 to 390 °F | 179 to 199 °C |
| Front Temperature | 375 to 410 °F | 191 to 210 °C |
| Nozzle Temperature | 375 to 420 °F | 191 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 125 psi | 0.00 to 0.862 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 2205-1. 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 2205-1 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 2205-1 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

[4] Thickness = 1.91mm
Conditioned for 40hrs at 23C at 50% RH

[5] 1.5mm for US and China; 3.0mm for Canada.

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