

# RAMTOUGH PZ320G2

Polycarbonate  
Polyram Ram-On Industries

Message:  
10% GLASS-FIBER REINFORCED, FLAME RETARDANT POLYCARBONATE FOR INJECTION MOULDING APPLICATIONS.

| General Information                      |                                                       |                   |                       |
|------------------------------------------|-------------------------------------------------------|-------------------|-----------------------|
| Filler / Reinforcement                   | Glass fiber reinforced material, 10% filler by weight |                   |                       |
| Additive                                 | Flame retardancy                                      |                   |                       |
| Features                                 | Flame retardancy                                      |                   |                       |
| RoHS Compliance                          | RoHS compliance                                       |                   |                       |
| Processing Method                        | Injection molding                                     |                   |                       |
| Physical                                 | Nominal Value                                         | Unit              | Test Method           |
| Specific Gravity                         | 1.28                                                  | g/cm <sup>3</sup> | ASTM D792, ISO 1183   |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg) | 15                                                    | g/10 min          | ASTM D1238, ISO 1133  |
| Molding Shrinkage                        |                                                       |                   |                       |
| Flow                                     | 0.30 - 0.50                                           | %                 | ASTM D955             |
| --                                       | 0.30 - 0.50                                           | %                 | ISO 2577              |
| Water Absorption                         |                                                       |                   |                       |
| Saturation                               | 0.12                                                  | %                 | ASTM D570             |
| Saturated, 23°C                          | 0.12                                                  | %                 | ISO 62                |
| Hardness                                 | Nominal Value                                         | Unit              | Test Method           |
| Rockwell Hardness                        |                                                       |                   |                       |
| Class r                                  | 85                                                    |                   | ASTM D785             |
| R scale                                  | 85                                                    |                   | ISO 2039-2            |
| Mechanical                               | Nominal Value                                         | Unit              | Test Method           |
| Tensile Modulus                          | 3100                                                  | MPa               | ASTM D638, ISO 527-2  |
| Tensile Strength (Yield)                 | 55.0                                                  | MPa               | ASTM D638, ISO 527-2  |
| Tensile Elongation                       |                                                       |                   | ASTM D638, ISO 527-2  |
| Yield                                    | 5.0                                                   | %                 | ASTM D638, ISO 527-2  |
| Fracture                                 | 15                                                    | %                 | ASTM D638, ISO 527-2  |
| Flexural Modulus                         | 2800                                                  | MPa               | ASTM D790, ISO 178    |
| Flexural Strength                        | 100                                                   | MPa               | ASTM D790, ISO 178    |
| Impact                                   | Nominal Value                                         | Unit              | Test Method           |
| Notched Izod Impact                      |                                                       |                   |                       |
| 23°C                                     | 100                                                   | J/m               | ASTM D256             |
| 23°C                                     | 10                                                    | kJ/m <sup>2</sup> | ISO 180               |
| Thermal                                  | Nominal Value                                         | Unit              | Test Method           |
| Deflection Temperature Under Load        |                                                       |                   |                       |
| 0.45 MPa, not annealed                   | 147                                                   | °C                | ASTM D648, ISO 75-2/B |

| 1.8 MPa, not annealed          | 139           | °C      | ASTM D648, ISO 75-2/A |
|--------------------------------|---------------|---------|-----------------------|
| Electrical                     | Nominal Value | Unit    | Test Method           |
| Surface Resistivity            | 1.0E+15       | ohms    | IEC 60093             |
| Volume Resistivity             | 1.0E+14       | ohms·cm | IEC 60093             |
| Dielectric Strength            | 30            | kV/mm   | IEC 60243-1           |
| Dielectric Constant (1 MHz)    | 90.0          |         | IEC 60250             |
| Flammability                   | Nominal Value | Unit    | Test Method           |
| Flame Rating                   |               |         | UL 94                 |
| 1.60 mm                        | V-0           |         | UL 94                 |
| 3.00 mm                        | V-0           |         | UL 94                 |
| Glow Wire Flammability Index   | 960           | °C      | IEC 60695-2-12        |
| Glow Wire Ignition Temperature | 850           | °C      | IEC 60695-2-13        |
| Injection                      | Nominal Value | Unit    |                       |
| Drying Temperature             | 120           | °C      |                       |
| Drying Time                    | 4.0 - 5.0     | hr      |                       |
| Suggested Max Moisture         | 0.020         | %       |                       |
| Rear Temperature               | 270 - 290     | °C      |                       |
| Middle Temperature             | 280 - 300     | °C      |                       |
| Front Temperature              | 290 - 310     | °C      |                       |
| Processing (Melt) Temp         | 270 - 310     | °C      |                       |
| Mold Temperature               | 80.0 - 120    | °C      |                       |
| Injection Pressure             | 70.0 - 107    | MPa     |                       |
| Holding Pressure               | 35.0 - 85.0   | MPa     |                       |
| Back Pressure                  | 0.350 - 0.700 | MPa     |                       |
| Screw Speed                    | 60 - 90       | rpm     |                       |
| Injection instructions         |               |         |                       |

Fill Speed: 25 to 50 mm/sec

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