

## POLIMAXX GP112

IRPC Public Company Limited - General Purpose Polystyrene

### General Information

#### Product Description

GP112 is a general purpose polystyrene (GPPS) with high stiffness, high melt strength and high transparency. It is designed for extrusion processing for thermoforming such as food packaging.

Industry:

- Thermoforming Packaging

Product Feature:

- High Stiffness
- High Melt Strength
- High Transparency

Regulation Compliance:

- FDA US 21CFR 177.1640
- Commission Regulation (EU) No. 10/2011
- RoHS Directive 2011/65/EU
- REACH REgulation (EC) No. 1907/2006
- UL Yellow Card: E132283

#### General

|                   |                      |                  |                              |
|-------------------|----------------------|------------------|------------------------------|
| Material Status   | • Commercial: Active |                  |                              |
| Availability      | • Asia Pacific       | • Europe         | • North America              |
| Features          | • General Purpose    | • High Stiffness |                              |
|                   | • High Clarity       | • High Strength  |                              |
| Uses              | • Food Packaging     | • Sheet          | • Thermoforming Applications |
| Processing Method | • Sheet Extrusion    | • Thermoforming  |                              |

### Properties <sup>1</sup>

| Physical                                                       | Nominal Value | Unit     | Test Method             |
|----------------------------------------------------------------|---------------|----------|-------------------------|
| Density / Specific Gravity <sup>2</sup>                        | 1.05          |          | ASTM D792               |
| Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)                       | 2.7           | g/10 min | ASTM D1238              |
| Molding Shrinkage                                              | 0.40 to 0.60  | %        | Internal Method         |
| Mechanical                                                     | Nominal Value | Unit     | Test Method             |
| Tensile Modulus <sup>3</sup> (0.126 in)                        | 455000        | psi      | ASTM D638               |
| Tensile Strength <sup>4</sup> (Yield, 0.126 in)                | 7540          | psi      | ASTM D638               |
| Tensile Strength <sup>4</sup> (Break, 0.126 in)                | 7540          | psi      | ASTM D638               |
| Tensile Elongation <sup>4</sup> (Break, 0.126 in)              | 2.0           | %        | ASTM D638               |
| Flexural Modulus <sup>5, 6</sup> (0.126 in)                    | 469000        | psi      | ASTM D790               |
| Flexural Strength <sup>5</sup> (Yield, 0.126 in)               | 14900         | psi      | ASTM D790               |
| Impact                                                         | Nominal Value | Unit     | Test Method             |
| Notched Izod Impact (73°F, 0.126 in)                           | 0.40          | ft-lb/in | ASTM D256               |
| Hardness                                                       | Nominal Value | Unit     | Test Method             |
| Rockwell Hardness (M-Scale, 0.126 in)                          | 80            |          | ASTM D785               |
| Thermal                                                        | Nominal Value | Unit     | Test Method             |
| Deflection Temperature Under Load (66 psi, Annealed, 0.126 in) | 201           | °F       | ASTM D648               |
| Vicat Softening Temperature <sup>7</sup>                       | 217           | °F       | ASTM D1525 <sup>8</sup> |

### Processing Information

| Extrusion             | Nominal Value | Unit |
|-----------------------|---------------|------|
| Cylinder Zone 1 Temp. | 356 to 428    | °F   |
| Cylinder Zone 2 Temp. | 356 to 428    | °F   |



|                       |               |
|-----------------------|---------------|
| Cylinder Zone 3 Temp. | 356 to 428 °F |
| Cylinder Zone 4 Temp. | 356 to 428 °F |
| Cylinder Zone 5 Temp. | 356 to 428 °F |
| Die Temperature       | 374 to 464 °F |

#### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 23°C

<sup>3</sup> 0.039 in/min

<sup>4</sup> 0.20 in/min

<sup>5</sup> 0.051 in/min

<sup>6</sup> E-Modulus

<sup>7</sup> 3.2mm

<sup>8</sup> Rate A (50°C/h), Loading 1 (10 N)

