

GENERAL PURPOSE POLYSTYRENE (TU 2214-126-05766801-2003)

Produced under License Agreement with Fina Technology Inc.

GPPS 525 is crystal polystyrene for both injection molding and cap-layer co-extrusion. Injection molding applications such as medical and laboratory parts, tumblers and jewel boxes demonstrate the polymer's ability to be molded with minimal stresses and fast cycles. Utilizing GPPS 525 as a cap layer in cups, plates and other consumer disposable takes advantage of this polymer's melt rheology.

GPPS 535 is high heat crystal polystyrene which is special for injection molding, extrusion and blow molding. It is used for electronic packaging, extruded light diffusers and office accessories.

GPPS 585 is high molecular weight, low melt-flow crystal polystyrene. This polymer is tailored for oriented polystyrene sheet production and extruded foam applications such as egg cartons, meat trays and food service.

MAIN QUALITY SPECIFICATIONS

| | ASTM TEST | GPPS 525 Typical Value | GPPS 535 Typical Value | GPPS 585 Typical Value |
|----------------------------------------------|-------------------------------------|---------------------------|---------------------------|---------------------------|
| Melt Index | | | | |
| ▪ Flow, g/10 min at 200 °C for 5 kg load | D-1238/A | 9.0±2.0 | 3.5±1.5 | 2.0±1.0 |
| Tensile Properties | | | | |
| ▪ Strength, Mpa, min. | D-638 | 37 | 43 | 38 |
| ▪ Modulus, Mpa, min. | D-638 | 2500 | 2000 | 2200 |
| Flexural Properties | | | | |
| ▪ Strength, Mpa, min. | D-790/A | 80 | 90 | 95 |
| ▪ Modulus, Mpa min. | D-790/A | 2700 | 2700 | 2700 |
| Thermal Properties | | | | |
| ▪ Vicat Softening Point, °C, min | D-1525/A | 92 | 94 | 98 |
| Residual Styrene Mass content, %, max | GOST 15820 or Fina LAB 1/34-1/35 | 0.05 | 0.05 | 0.05 |

| | |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Supply form | Granules |
| Packaging | Single-layer polyethylene or polypropylene bags |
| Transportation | Product is transported in covered transport means |
| Storage | In sheltered warehouse on shelves or pallets preventing direct sun rays, at least 5 cm from the floor and 1 m from heating devices. |

HIGH IMPACT POLYSTYRENE (TU 2214-126-05766801-2003)

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HIPS 825 is high impact polystyrene designed specifically for injection molding. The polymer's ability to be molded on fast cycles with minimal stresses results in outstanding impact retention. This polymer is used in such applications as appliance housings, toys, and structural foam production that require high gloss.

HIPS 825E is high impact polystyrene designed specifically for extrusion and thermoforming. This polymer is used for production of industrial packaging via deep draw thermoforming and custom multiplayer sheet extrusion.

HIPS 825ES is high impact polystyrene with higher rubber content than **HIPS 825E**, designed for extrusion and thermoforming.

MAIN QUALITY SPECIFICATIONS

| | ASTM TEST | HIPS 825 Typical Value | HIPS 825E Typical Value | HIPS 825ES Typical Value |
|---------------------------------------------|-------------------------------------|---------------------------|----------------------------|-----------------------------|
| Melt Index | | | | |
| ▪ Flow, g/10 min at 200 °C for 5 kg load | D-1238/A | 7.5±1.5 | 3.0±1.0 | 4.0 |
| Impact Properties | | | | |
| ▪ Gardner Impact Strength, J, min. | D-3029/G | 12 | 12 | 12 |
| ▪ Notched Izod Impact Strength, J/m, min. | D-256/A | 96 | 96 | 96 |
| Tensile Properties | | | | |
| ▪ Strength, Mpa, min. | D-638M | 15 | 21 | 21 |
| ▪ Modulus, Mpa, min. | D-638M | 1500 | 1800 | 1800 |
| ▪ Elongation, %, min. | D-638M | 40 | 45 | 45 |
| Flexural Properties | | | | |
| ▪ Strength, Mpa, min. | D-790/A | 37 | 45 | 35 |
| ▪ Modulus, Mpa, min. | D-790/A | 2000 | 2200 | 2000 |
| Thermal Properties | | | | |
| ▪ Vicat Softening Point, °C, min | D-1525/A | 84 | 92 | 92 |
| Other Properties | | | | |
| ▪ Gloss, 60 °C, min. | D-523 | 80 | 50 | 50 |
| Residual Styrene Mass content,%, max | GOST 15820 or Fina LAB 1/34-1/35 | 0.05 | 0.05 | 0.05 |

Supply form Granules

Packaging Single-layer polyethylene or polypropylene bags

Transportation Product is transported in covered transport means

Storage In sheltered warehouse on shelves or pallets preventing direct sun rays, at least 5 cm from the floor and 1 m from heating devices.