

Calcium Carbonate Reinforced Polypropylene

Polifil® C series compounds are homopolymer polypropylene resins reinforced with fine particle size calcium carbonate. They combine high impact with stiffness, good colorability, resistance to environmental stress-cracking, good surface, and low mold shrinkage. Polifil® C products in the 20 to 40% range are UL94 HB rated. These compounds are used in appliances, electrical components, housewares, toys, automotive, and utility products. Standard processing techniques are applicable. Use this information as a guide to aid you in selecting the proper resin for your application. TPG will custom compound and fine-tune our formulations for your application.

| PHYSICAL | ASTM/ Method | Polifil® C-10 | Polifil® C-20 | Polifil® C-30 | Polifil® C-40 |
|--|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Reinforcement content (%) | TPG WI | 10 | 20 | 30 | 40 |
| Specific gravity | D 792 | 0.98 | 1.05 | 1.15 | 1.24 |
| Melt flow 230/2.16 (g/10 min) | D 1238 | 8-12* | 8-12* | 8-12* | 8-12* |
| Water absorption, 24 hours (%) | D 570 | nil | nil | nil | nil |
| Mold shrinkage – 1/8" specimen (in/in) | D 955 | 0.015 | 0.013 | 0.012 | 0.010 |

MECHANICAL @ 73°F

| | | | | | |
|-----------------------------------|--------|-------|-------|-------|-------|
| Tensile strength (psi) | D 638 | 4,400 | 4,100 | 3,600 | 3,400 |
| Elongation @ yield (%) | D 638 | 8.0 | 7.0 | 6.0 | 5.0 |
| Elongation @ break (%) | D 638 | 30 | 40 | 50 | 60 |
| Tensile modulus (kpsi) | D 638 | 210 | 240 | 270 | 300 |
| Flexural modulus, tangent (kpsi) | D 790 | 230 | 270 | 300 | 320 |
| Flexural strength (psi) | D 790 | 5,100 | 5,500 | 5,800 | 6,000 |
| Izod impact, notched (ft-lbs/in) | D 256 | 0.55 | 0.57 | 0.60 | 0.70 |
| Gardner impact, 1/2" tup (in-lbs) | D 5420 | 24 | 40 | 60 | 60 |
| Hardness, shore (D-scale) | D 1415 | 72 | 74 | 75 | 76 |

THERMAL

| | | | | | |
|-------------------------------------|-------|-----|-----|-----|-----|
| Deflection temperature, 66psi (°F) | D 648 | 200 | 210 | 220 | 235 |
| Deflection temperature, 264psi (°F) | D 648 | 130 | 135 | 140 | 145 |
| Flammability** (Rating) | UL94 | – | HB | HB | HB |

*melt flow may be specified

** TPG UL File# E84888. This rating is not intended to reflect hazards of this or any other material under actual fire conditions.

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