

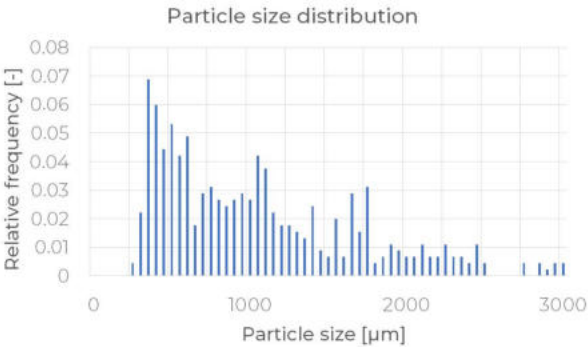


reFILL

Cost-effective coarse ground epoxy-glass powder filler that can be used as a circular-economy originated filler for various thermoplastic polymers.

PROPERTIES

- ✓ **Average particle size**
1035 µm
- ✓ **Particles size range**
~250-3000 µm
- ✓ **Material composition**
epoxy resin (~36%)
glass (~64%)
(may contain traces of metals)
- ✓ **Packed bulk density**
~0.7 g/cm³



EFFECT OF 20 WT% ON DIFFERENT TYPES OF POLYPROPYLEN

- ✓ **Polypropylene types**
hPP45 homopolymer, MFR value of 45 g/10 min (230 °C/2.16 kg)
hPP8.2 homopolymer, MFR value of 8.2 g/10 min (230 °C/2.16 kg)
rPPI2 random copolymer, MFR value of 12 g/10 min (230 °C/2.16 kg)
bPPI3 block copolymer, MFR value of 13 g/10 min (230 °C/2.16 kg)

✓ **Change in properties**

	MFR [g/10 min] 230 °C/2.16 kg	Tensile strength [MPa]	Strain at break [%]	Tensile modulus [MPa]	Charpy impact strength [kJ/m ²]
	ISO 1133	ISO 527	ISO 527	ISO 527	ISO 179
hPP45	45	37.2	14	1743	1.4
hPP45+20reFILL	34.3	32.1	5	2087	1.4
hPP8.2	8.2	32.6	22	558	1.9
hPP8.2+20reFILL	6.9	30.1	11	611	1.7
rPPI2	12	21.3	145	439	3.2
rPPI2+20reFILL	9.3	19.4	100	417	2.2
bPPI3	13	23.7	22	511	7.0
bPPI3+20reFILL	12.5	21.4	19	534	4.4

*compounding was made on a twin screw extruder at 190 °C and 150 rpm. Specimens were injection molded with the following parameters:
melt temperature: 200 °C, mold temperature 30 °C, injection speed 50 cm³/s, holding pressure 400 bar.