

## Polypropylene (PP)

TYPICAL PROPERTIES OF POLYPROPYLENE (PP)

ASTM or UL Test	Property	HPP*	HPP-filled	CPP**	CPP-filled
D792	Specific gravity	0.90-0.91	0.97-1.27	0.89-0.91	0.98-1.24
D570	Water absorption (%)	0.01-0.03	0.01-0.09	0.03	0.01-0.02
D638	Tensile strength (psi)	4,500-6,000	3,500-16,000	4,000-5,500	2,500-10,000
D638	Elongation at break (%)	100-600	1.5-80	200-500	2.2-50
D638	Tensile modulus (psi)	16,500-22,500	37,500-100,000	13,000-18,000	5,000-35,000
D790	Flexural modulus (psi)	17,000-25,000	21,000-100,000	13,000-20,000	21,000-96,000
D256	Impact strength, Izod (ft-lb/in of notch)	0.4-1.4	0.6-12	1.1-14	0.6-4.0
D785	Hardness, Rockwell R	80-102	75-117	65-96	81-105
C177	Thermal conductivity (10 <sup>-4</sup> cal-cm/sec-cm <sup>2</sup> -°C)	2.8	2.4-9	3.5-4.0	3-9
D696	Coefficient of thermal expansion (10 <sup>-5</sup> in/in-°C)	8-10	1.5-5	6-10	2-6
D648	Deflection temperature (°F)				
	At 264 psi	120-140	130-330	120-140	116-280
	At 66 psi	225-250	220-300	185-220	170-305
UL 94	UL flammability rating***	HB	HB	HB	HB

\*Homopolymer polypropylene. \*\*Copolymer polypropylene. \*\*\*V-2, V-1, V-0, V-5 grades available.

TYPICAL PROPERTIES OF POLYPROPYLENE (PP)

ISO or UL Test	Property	HPP*	HPP-filled	CPP**	CPP-filled
ISO1183	Specific gravity	0.90-0.91	0.97-1.27	0.89-0.91	0.98-1.24
ISO62	Water absorption (%)	0.01-0.03	0.01-0.09	0.03	0.01-0.02
ISO527	Tensile strength (MPa)	31.03-41.37	24.13-110.32	27.58-37.92	17.24-68.95
ISO527	Elongation at break (%)	100-600	1.5-80	200-500	2.2-50
ISO527	Tensile modulus (MPa)	113.7-155.1	258.5-689.5	89.6-124.1	34.4-241.3
ISO178	Flexural modulus (MPa)	117.2-172.3	144.8-689.5	89.6-137.9	144.8-661.9
ISO180	Notched izod impact strength (J/m)	21-75	32-641	59-747	32-214
ASTM D785	Hardness, Rockwell R	80-102	75-117	65-96	81-105
ISO8302	Thermal conductivity (W/(mK))	0.22	0.25-0.51	0.22	0.25-0.51
ISO11359	Coefficient of thermal expansion (10 <sup>-4</sup> m/m-°C)	1.4-1.8	0.27-0.90	1.08-1.80	0.36-1.08
ISO75	Deflection temperature (°C)				
	At 1.80 MPa	49-60	54-166	49-60	47-138
	At 0.45 MPa	107-121	104-149	85-104	77-152
UL 94	UL flammability rating***	HB	HB	HB	HB

\*Homopolymer polypropylene \*\*Copolymer polypropylene \*\*\*V-2 ... V-1 ... V-0 ... V-5 ... grades available.