

Chemical Designation

PP (Polypropylene)

Colour

black

Density

1.96 g/cm³

Fillers

graphite

Main features

- high electrical conductivity
- high thermal conductivity
- very good chemical resistance
- for hot compression moulding

Target Industries

- bipolar plates for fuel cells
- hydrogen industry
- separator plates for redox-flow batteries

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Flexural strength		48	MPa	DIN EN ISO 178	
<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Glass transition temperature		0	°C	-	1) (1) literature value
Melting temperature		165	°C	-	2) (2) literature value
Heat distortion temperature		148	°C	ISO-R 75 Method A	3) (3) literature value
Service temperature	short term	-30 - 130	°C	-	4) (4) literature value
Service temperature	long term	-30 - 90	°C	-	
Thermal expansion (CLTE)	at -30 - 30 °C	8	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	at 30 - 60 °C	11	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	at 60 - 90 °C	14	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	at 90 - 130 °C	17	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal conductivity	in-plane	66	W/(K*m)	ISO 22007-4:2008	
Thermal conductivity	through-plane	20	W/(K*m)	ISO 22007-4:2008	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Specific electrical conductivity	in-plane	168	S/cm	DIN EN ISO 3915	
volume resistance		5,9 x 10 ⁻³	Ω*cm	DIN EN ISO 3915	
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Water absorption	23 °C / 50 % relative humidity up to saturation	< 0,1	%	DIN EN ISO 62	

