

PE-Borated / Borated Polyethylene With 5% Boron Content

Borated Polyethylene-UH05 is a 5 % boron-loaded PE-UHMW grade, specifically developed for neutron shielding purposes. The high hydrogen content of PE-UHMW makes it very suitable for slowing down fast neutrons to lower energy thermal (slow) neutrons, which are then absorbed by the added boron compound.

Technical Data Sheet

Physical properties	Test Standard	Value	Unit
Density	ISO 1183-1	> 1.03	g/cm ³
Water Absorption	ISO 62	<0.01	%
Molecular Weight	-	≥5.0	10 ⁶ g/mol
Mechanical properties	Test Standard	Value	Unit
Hardness	ISO 868	>63	Shore D
Yield Stress	ISO 527	>20	MPa
Tensile Modulus	ISO 527	>700	MPa
Thermal properties	Test Standard	Value	Unit
Service Temperature	-	-250 to 80	°C
Melting Point	ISO 11357-3	130 to 135	°C
Thermal Conductivity	DIN 52612-1	0.4	W/(K*m)
Thermal Capacity	DIN 52612	1.9	KJ/(kg*K)
Vicat Softening Temperature	ISO 306	79	°C
Flammability, UL94	-	HB	-
Electrical Properties	Test Standard	Value	Unit
Surface Resistivity	DIN EN 62631	>10 ¹⁴	Ω
Dielectric Constant	IEC 60250	2.3	1MHz
Dielectric Strength	IEC 60243-1	>30	KV/mm
Volume Resistivity	IEC 60093	>10 ¹⁴	Ω*cm

Note:

*The data stated above are typical values intended for reference and comparison purposes only.

*The data should not be used as a basis for design specifications or quality control.

*The information is provided as a guide to the best of our knowledge and given without obligation or liability.

*Testing under individual application circumstances is recommended.