

## 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 <sup>3</sup>
Water Absorption	ISO 62	<0.01	%
Molecular Weight	-	≥5.0	10 <sup>6</sup> 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 <sup>14</sup>	Ω
Dielectric Constant	IEC 60250	2.3	1MHz
Dielectric Strength	IEC 60243-1	>30	KV/mm
Volume Resistivity	IEC 60093	>10 <sup>14</sup>	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.