






## SWX-201 & 201HD Neutron Shielding

### 5% Borated Polyethylene



SWX-201HD

-  Excellent mechanical and neutron shielding characteristics
-  Contains high hydrogen content with 5% boron
-  Available in sheets, cylinders, pellets, and other custom shapes

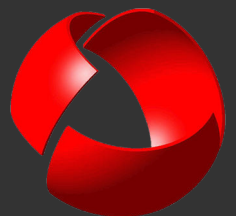


SWX-201

SWX-201 5% Borated Polyethylene is typically used in neutron shielding applications where low and intermediate levels of neutron flux and normal environmental conditions are expected. Its optimal boron content of 5% provides excellent moderation of fast neutrons along with attenuation of thermal neutrons by the boron additive, reducing the impact of hydrogen capture gammas typical of a pure poly shield.

SWX-201HD is a higher density material that may be preferred over standard density SWX-201 when space limitations are critical.

Our 5% borated poly is available in a wide range of form factors including sheets, bricks, cylinders, pellets, and other custom shapes. It is easily machined using common wood- and metal- working tools. Shieldwerx can not only provide custom machining, but can also pour SWX-201 into custom made molds to reduce the amount of machining required for more complex forms.





## SWX-201 & 201HD Neutron Shielding

# Specifications

Composition Data	SWX-201	SWX-201HD
Hydrogen atom density / cm <sup>3</sup> :	6.59 x 10 <sup>22</sup>	7.48 x 10 <sup>22</sup>
Hydrogen weight percent:	11.7 %	11.7 %
Boron atom density / cm <sup>3</sup> :	2.63 x 10 <sup>21</sup>	2.99 x 10 <sup>21</sup>
Boron natural isotope distribution:	19.6 % <sup>10</sup> B and 80.4 % <sup>11</sup> B	19.6 % <sup>10</sup> B and 80.4 % <sup>11</sup> B
Boron weight percent:	5.0 %	5.0 %
Total Density:	0.95 g / cm <sup>3</sup> (59 lbs / ft <sup>3</sup> )	1.07 g / cm <sup>3</sup> (67 lbs / ft <sup>3</sup> )
<b>Radiation Properties</b>		
Macroscopic thermal neutron cross section:	2.01 (cm <sup>-1</sup> )	2.28 (cm <sup>-1</sup> )
Gamma resistance:	5 x 10 <sup>8</sup> rad	5 x 10 <sup>8</sup> rad
Neutron resistance:	2.5 x 10 <sup>17</sup> n/ cm <sup>2</sup>	2.5 x 10 <sup>17</sup> n/ cm <sup>2</sup>
<b>Physical Properties</b>		
State:	Sheets, cylinders	Sheets, pellets
Color:	White	Green
Odor:	No odor	No odor
Machinability:	Excellent	Excellent
<b>Thermal Properties</b>		
Recommended Temperature Limit:	180 °F (82.2 °C)	180 °F (82.2 °C)
Melting Point	210 °F (98.8 °C)	210 °F (98.8 °C)
Boiling Point	300 °F (149 °C)	300 °F (149 °C)
<b>Chemical Properties</b>		
Chemical name and synonyms:	Borated Polyethylene	Borated Polyethylene HD
Trade name and synonyms:	SWX -201	SWX -201HD
Chemical Family:	Polyolefins	Polyolefins
Formula:	Mixture (CH <sup>2</sup> ) <sub>n</sub> , B	Mixture (CH <sup>2</sup> ) <sub>n</sub> , B
Solubility in Water:	Negligible	Negligible

