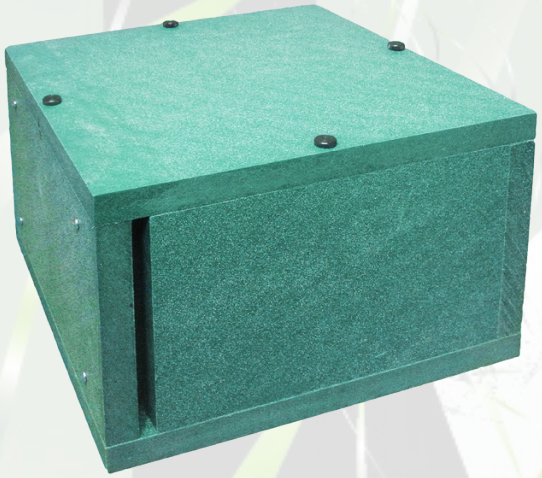
NEUTRON SHIELDING

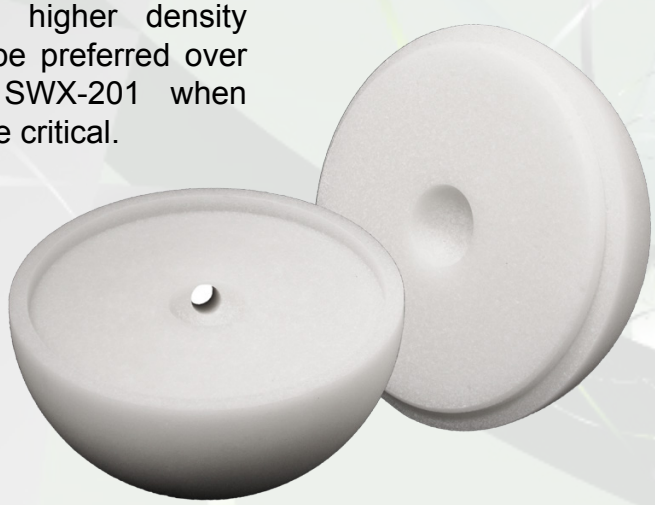
SWX-201 & 201HD

5% Borated Polyethylene



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.

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

A Division of Bladewerx LLC

shieldwerx™

www.shieldwerx.com

NEUTRON SHIELDING

SWX-201 & 201HD

5% Borated Polyethylene

Specifications

Composition Data	SWX-201	SWX-201HD
Hydrogen atom density / cm^3:	6.59×10^{22}	7.48×10^{22}
Hydrogen weight percent:	11.7 %	11.7 %
Boron atom density / cm^3:	2.63×10^{21}	2.99×10^{21}
Boron natural isotope distribution:	19.6 % ^{10}B and 80.4 % ^{11}B	19.6 % ^{10}B and 80.4 % ^{11}B
Boron weight percent:	5.0 %	5.0 %
Total Density:	0.95 g / cm^3 (59 lbs / ft^3)	1.07 g / cm^3 (67 lbs / ft^3)
Radiation Properties		
Macroscopic thermal neutron cross section:	2.01 (cm^{-1})	2.28 (cm^{-1})
Gamma resistance:	5×10^8 rad	5×10^8 rad
Neutron resistance:	2.5×10^{17} n/ cm^2	2.5×10^{17} n/ cm^2
Physical Properties		
State:	Sheets, cylinders	Sheets, pellets
Color:	White	Green
Odor:	No odor	No odor
Machinability:	Excellent	Excellent
Thermal Properties		
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)
Chemical Properties		
Chemical name and synonyms:	Borated Polyethylene	Borated Polyethylene HD
Trade name and synonyms:	SWX-201	SWX-201HD
Chemical Family:	Polyolefins	Polyolefins
Formula:	Mixture $(CH^2)n$, B	Mixture $(CH^2)n$, B
Solubility in Water:	Negligible	Negligible

A Division of Bladewerx LLC

shieldwerx™

4529 Arrowhead Ridge Dr. SE
Rio Rancho, New Mexico 87124
United States of America
Phone: +01.505.892.5144
Fax: +01.505.890.8319
Email: sales@shieldwerx.com

Data Sheet Revision: Nov 2015