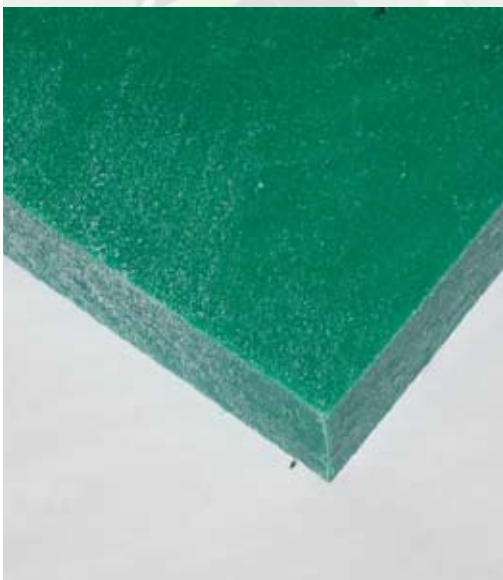


SWX-201HD

5% Borated Polyethylene



SWX-201HD 5% Borated Polyethylene is typically used in neutron shielding applications where low- and intermediate-levels of neutron flux are expected, but elevated temperatures are not. Its optimal boron content of 5% provides excellent attenuation of thermal neutrons, thus reducing the levels of capture-gamma radiation. SWX-201HD has a high hydrogen content, making it an effective fast neutron shield.

SWX-201HD is available in a wide range of form factors including slabs, 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-201HD into custom made molds to provide application specific shielding forms.



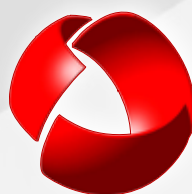
Borated polyethylene with excellent mechanical and nuclear shielding characteristics



Contains high hydrogen content with 5% boron



Available in slabs, cylinders, pellets, and other custom shapes



SWX-201HD

5% Borated Polyethylene

Specifications

Composition Data

| | |
|---|---|
| Hydrogen atom density / cm ³ : | 7.5 x 10 ²² |
| Natural isotope distribution: | 99.98 % ¹ H |
| Boron atom density / cm ³ : | 3.0 x 10 ²¹ |
| Natural isotope distribution: | 19.6 % ¹⁰ B and 80.4 % ¹¹ B |
| Weight percent of all isotopes of boron: | 5.0 % |
| Total Density: | 1.08 g / cm ³ (67 lbs./ft ³) |

Radiation Properties

| | |
|--|---|
| Macroscopic thermal neutron cross section: | 2.00 (cm ⁻¹) |
| Gamma resistance: | 5 x 10 ⁸ rad |
| Neutron resistance: | 2.5 x 10 ¹⁷ n/ cm ² |

Physical Properties

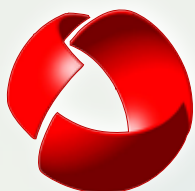
| | |
|-----------------------|-----------------------------------|
| State: | Bricks, slabs, cylinders, pellets |
| Color: | Green |
| Odor: | No odor |
| Machinability: | Excellent |
| Compressive Strength: | 800 psi |

Thermal Properties

| | |
|-----------------------------------|------------------------|
| Recommended Temperature Limit: | 180 °F (82.2 °C) |
| Melting Point | 210 °F (98.8 °C) |
| Boiling Point | 300 °F (149 °C) |
| Thermal Conductivity | 1 |
| Cubical Coefficient of Expansion: | 6.1 x 10 ⁻⁴ |
| Linear Coefficient of Expansion: | 2 x 10 ⁻⁴ |

Chemical Properties

| | |
|---------------------------|---|
| Chemical Name & Synonyms: | Borated Polyethylene |
| Trade Name & Synonyms: | SWX-201 |
| Chemical Family: | Polyolefin's |
| Formula: | Mixture (CH ²) _n , B |
| Solubility in Water: | Negligible |



A Division of Bladewerx LLC

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