

SWX-215

7.5% Lithium Polyethylene



SWX-215 is an effective neutron shield that uses lithium instead of boron as the thermal neutron poison. Thermal neutrons captured by boron produce a 420 keV capture gamma that in some cases may be undesirable. Lithium does not produce a capture gamma, but since lithium has a lower thermal neutron cross section than does boron, your application will require a thicker shield to attain the same shielding factor as for a boron loaded polyethylene.

SWX-215 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-215 into custom made molds to provide application specific shielding forms.



Useful for shielding gamma detectors in neutron fields as the thermal neutron poison utilized does not emit a capture gamma

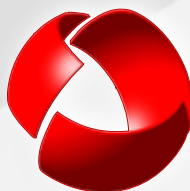


Contains high hydrogen content with 7.5% lithium



Available in slabs, cylinders, and other custom shapes

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shieldwerxTM

SWX-215

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Specifications

Composition Data

Hydrogen atom density / cm ³ :	5.44 x 10 ²²
Natural isotope distribution:	99.98 % ¹ H
Lithium atom density / cm ³ :	6.7 x 10 ²¹
Natural isotope distribution:	92.6 % ⁷ Li and 7.4 % ⁶ Li
Weight percent of all isotopes of lithium:	7.5 %
Total Density:	1.06 g / cm ³ (66.2 lbs./ft ³)

Radiation Properties

Macroscopic thermal neutron cross section:	0.48 (cm ⁻¹)
Gamma resistance:	5 x 10 ⁸ rad
Neutron resistance:	2.5 x 10 ¹⁷ n/ cm ²

Physical Properties

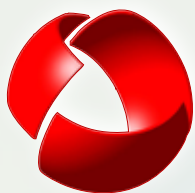
State:	Bricks, slabs, cylinders
Color:	Off-white / yellow
Odor:	No odor
Machinability:	Excellent

Thermal Properties

Recommended Temperature Limit:	180 °F (82.2 °C)
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Chemical Properties

Chemical Name & Synonyms:	Lithium Polyethylene
Trade Name & Synonyms:	SWX-215
Chemical Family:	Polyolefin's
Formula:	Mixture (CH ²) _n , Li
Solubility in Water:	Negligible
Reactive Acids:	Incompatible w/concentrate acids, Releases CO ₂



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103 Rio Rancho Dr NE, #C4
 Rio Rancho, New Mexico 87124
 United States of America
 Phone: +01.505.892.5144
 Fax: +01.505.890.8319
 Email: sales@shieldwerx.com

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