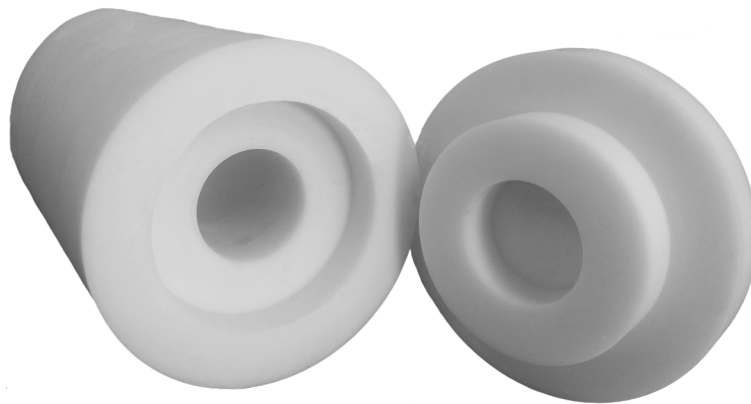




## SWX-215 Neutron Shielding

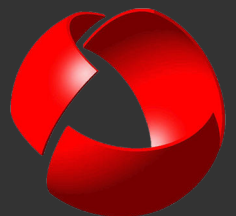
### **7.5% Lithium Polyethylene**

- Lithium does not emit capture gammas when thermal neutrons are absorbed -
- Contains high hydrogen content with 7.5% lithium
- Available in slabs, cylinders, and other custom shapes



SWX-215 is an effective neutron shield that uses lithium instead of boron as the thermal neutron absorber. 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 boron, your application will require a thicker shield to attain the same shielding factor as for boron loaded polyethylene.

SWX-215 is available in a wide range of form factors including slabs, bricks, cylinders, 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 reduce the machining necessary for more complex application-specific shielding forms.





# SWX-215 Neutron Shielding

## Specifications

### Composition Data

Hydrogen atom density / cm <sup>3</sup> :	5.44 x 10 <sup>22</sup>
Hydrogen weight percent:	8.59 %
Lithium atom density / cm <sup>3</sup> :	6.96 x 10 <sup>21</sup>
Lithium natural isotope distribution:	92.6 % Li and 7.4 % Li
Lithium weight percent:	7.56 %
Total Density:	1.06 g / cm <sup>3</sup> (66.2 lbs./ft <sup>3</sup> )

### Radiation Properties

Macroscopic thermal neutron cross section:	0.51 (cm <sup>-1</sup> )
Gamma resistance:	5 x 10 <sup>8</sup> rad
Neutron resistance:	2.5 x 10 <sup>17</sup> n/ cm <sup>2</sup>

### Physical Properties

State:	Bricks, slabs, cylinders
Color:	White
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:	Polyolefins
Formula:	Mixture (CH <sup>2</sup> ) <sub>n</sub> , Li
Solubility in Water:	Negligible
Reactive Acids:	Incompatible w/concentrate acids, Releases CO <sub>2</sub>

