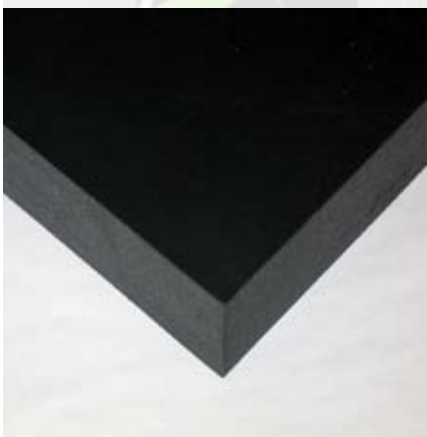


# SWX-237

## High Temperature Boron-Silicone



SWX-237 Boron-Silicone is a fire- and heat-resistant field-castable neutron shielding material. It is silicone elastomer based and has a high hydrogen content. At temperatures up to 400 °F (204.4 °C), it will retain almost 90% of its hydrogen for extended periods. The hydrogen content of SWX-237 is 67% of that found in water and contains 1% boron for thermal neutron attenuation.

SWX-237 is available in a variety of shapes and sizes. It has a hard rubber-like consistency that will minimize any impact due to secondary missile formation and is self-extinguishing.

SWX-237 Boron-Silicone can be provided as a multi-part kit that is castable in the field or as pre-cast solid pieces made to your specifications. Recommended shelf-life of the mix kit is six months.



**A field-castable multi-part liquid kit that is also available as custom-made pre-cast solid pieces**



**Contains 1% boron along with a high hydrogen content in a hard rubber-like elastomer**

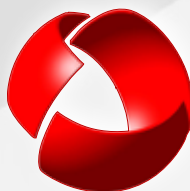


**Fire and heat resistant**



**To cast 1 cubic foot of SWX-237 requires 97 pounds of Boron-Silicone mix (1 liter requires 1.59 kilograms of Boron-Silicone mix)**

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**SWX-237****High Temperature Boron-Silicone****Specifications****Composition Data**

Hydrogen atom density/ cm <sup>3</sup> :	4.49 x 10 <sup>22</sup>
Natural isotope distribution:	99.98% <sup>1</sup> H
Boron atom density/ cm <sup>3</sup> :	9.4 x 10 <sup>20</sup>
Natural isotope distribution:	19.6% <sup>10</sup> B and 80.4% <sup>11</sup> B
Weight percent of all isotopes of boron:	1.06%
Total Density	1.59 g / cm <sup>3</sup> (99 lbs/ ft <sup>3</sup> )

**Radiation Properties**

Macroscopic thermal neutron cross section:	0.71 cm <sup>-1</sup>
Gamma resistance:	1 x 10 <sup>10</sup> rad
Neutron resistance:	5 x 10 <sup>18</sup> n / cm <sup>2</sup>

**Physical Properties**

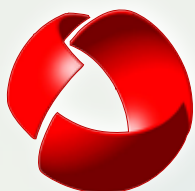
State	Liquid mix or pre-cast solid
Color	Dark gray
Odor	no significant odor
Machinability:	Fair
Hardness:	Shore "A" Durometer Scale = 66
Tensile Strength (ASTM D368):	50 psi (35,155 kg/ m <sup>2</sup> )
Compressive Strength:	450 psi (316,395 kg/ m <sup>2</sup> )

**Thermal Properties**

Recommended Temperature Limit:	400 °F (204.4 °C)
Heat Capacity:	0.4 cal/g °C
Cubical Coefficient of Expansion:	3 x 10 <sup>-4</sup> in <sup>3</sup> /in <sup>3</sup> °F (5.4 x 10 <sup>-4</sup> cm <sup>3</sup> /cm <sup>3</sup> °C)
Linear Coefficient of Expansion:	1 x 10 <sup>-4</sup> in/in °F (1.7 x 10 <sup>-4</sup> cm/cm °C)
Vapor Pressure (mm Hg):	5
Evaporation Rate (ether=1):	<1

**Chemical Properties**

Chemical Name & Synonyms:	Borated Silicone
Trade Name & Synonyms:	SWX-237
Chemical Family:	Silicone Monomer
Formula:	Mixture of silicone plus boron compound
Solubility in Water:	<1%



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