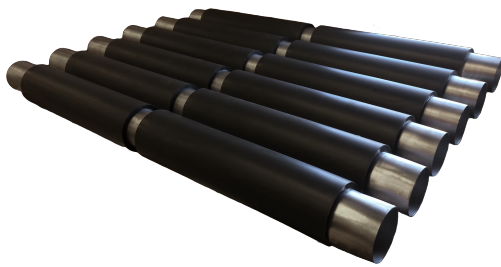








SWX-237-0 Neutron Shielding

High Temperature Poly Substitute

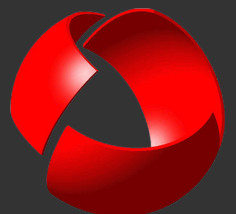


SWX-237-0

-  Field-castable multi-part liquid and powder kit
(97 Lbs = 1 Ft³)
-  Pre-cast custom shapes in a hard rubber-like elastomer
-  More than half the hydrogen content of HDPE without the fire and temperature restrictions
-  Fire and heat resistant material

SWX-237-0 neutron moderator 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 initial hydrogen for extended periods. The hydrogen content of SWX-237-0 is 2/3 of that found in water.

SWX-237-0 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-237-0 Neutron Shielding

Specifications

Composition Data (as cast)

Hydrogen atom density/ cm^3 :	4.54×10^{22}
Hydrogen natural isotope distribution:	99.98% ^1H
Hydrogen weight percent:	4.79 %
Total Density	1.59 g / cm^3 (99 lbs/ ft^3)

Radiation Properties

Macroscopic thermal neutron cross section:	0.02 cm^{-1}
Gamma resistance:	$1 \times 10^{10} \text{ rad}$
Neutron resistance:	$5 \times 10^{18} \text{ n / cm}^2$

Physical Properties

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

Thermal Properties

Recommended Temperature Limit:	400 °F (204.4 °C)
Heat Capacity:	0.4 cal/g °C
Specific Heat:	950 J/(Kg-K)
Thermal Conductivity:	0.584 W/(m-K)
Cubical Coefficient of Expansion:	$3 \times 10^{-4} \text{ in}^3/\text{in}^3 \text{ } ^\circ\text{F}$ ($5.4 \times 10^{-4} \text{ cm}^3/\text{cm}^3 \text{ } ^\circ\text{C}$)
Linear Coefficient of Expansion:	$1 \times 10^{-4} \text{ in/in } ^\circ\text{F}$ ($1.7 \times 10^{-4} \text{ cm/cm } ^\circ\text{C}$)
Vapor Pressure (mm Hg):	5
Evaporation Rate (ether=1):	<1

Chemical Properties

Chemical Name & Synonyms:	High Temperature Poly-Substitute
Trade Name & Synonyms:	SWX-237-0
Chemical Family:	Silicone Monomer
Formula:	Silicone plus hydrogen compounds
Solubility in Water:	<1%

