Boron Rubbers India
RADIATION SHIELDING DIVISION

RADIATION SHIELDING PRODUCTS

FLEX BORON SHEET

Catalog No. : BR 2871

NEUTRON SHIELDING

BR – 2871 is a flexible, heat resistant, ozone resistant, lightweight EPR based polymer containing High percentage of Boron. Boron has a very high macroscopic cross-section for thermal neutrons. Therefore the material has an extremely good attenuation factor for thermal neutrons. Hence, it provides an excellent shield against thermal neutrons. This product is also stable in vacuum.

- Excellent thermal neutron shielding material
- Easy to cut and bend
- Light weight and stable in vaccum.

BR 2871 Flexible Boronated sheet can easily be handled and installed by non-specialized personnel. It is readily applied to concrete or other wall materials using standard mounting technique. This flexible material can be cut and shaped using an ordinary knife and scissors. This material can be molded or extruded in any shape as per your requirements.

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SPECIFICATIONS

Catalog No. : BR 2871

Composition Data

Size & thickness available	1 m x 2 m x 3.2 + 0.2 mm 1 m x 1 m x 3.2 + 0.2 mm
Boron Contents	52 % ± 1 %
Boron atom density per cc	4.64 x 10^{22}
Natural isotope distribution	19.6 % B10 and 80.4 % B11
Hydrogen atom density per cc	2.77 x 10^{22}
Attenuation Factor	Min. 2871 Wave length of 1.2 mtr.
Temperature Limit	140 ^{0}C ± 20 ^{0}C
Density	1.61 + 0.01 gm/cc

Radiation Properties

Macroscopic thermal neutron cross section :	35.00 cm-1
Gamma resistance :	1.0 x 10^{10} rads
Neutron resistance :	5.0 x 10^{18} n / cm^2

Physical Properties

Appearance and Odor :

State :	Rubbery Solid
Color :	Grayish Black
Odor :	Mild rubbery odor

Chemical Properties :

Chemical Name & Synonyms :	Borated EPDM
Trade Name & Synonyms :	Catalog No. BR 2871
Chemical Family :	Boron compound in EPDM elastomer
Formula :	Proprietary
Solubility in Water :	Negligible

Thermal Properties :

Recommended Temperature Limit :	130 ^{0}C
Melting Point :	N/A
Bolling Point :	N/A
Coefficient of Thermal Conductivity :	N/A
Heat Capacity :	N/A
Cubical Coefficient of Expansion :	N/A
Linear Coefficient of Expansion :	N/A
Vapor Pressure (mm Hg) :	N/A
Vapor Density (Air=1) :	N/A
Evaporation Rate (ether=1) :	N/A
Percent Volatile by Volume :	0
Specific Gravity (H2O =1)	1.61 g/cm^3

Mechanical Properties :

Machining :	Poor
Hardness :	70 ± 5
Tensile Strength :	N/A
Compressive Strength :	N/A

Reactivity Data

Reactive Materials :	Borated EPDM
Reactive Acids :	N/A
Reactive Bases :	N/A
Reactive Metals and Metal Compounds :	N/A
Reactive Oxidizing Agents :	N/A
Reactive Reducing Agents :	N/A

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