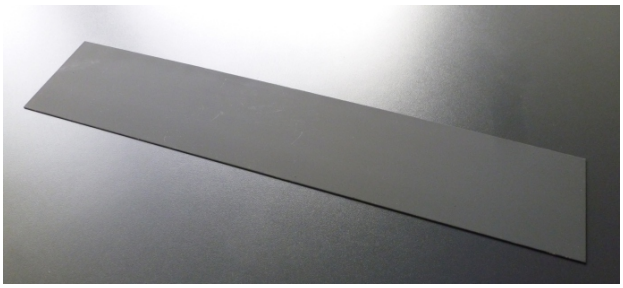
NIBRANIUM
GADOLINIUM OXIDE COATING

Composition: Gd_2O_3 in resin matrix



Properties of Gd_2O_3:
Atomic Weight: 362.49 g·mol^{-1}
Phase: solid
Density: 7.41 g·cm^{-3}

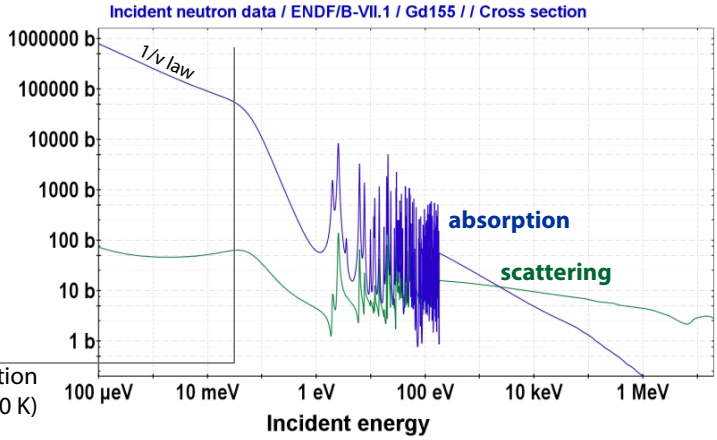
EU Hazard Statements: none

Isotope Composition

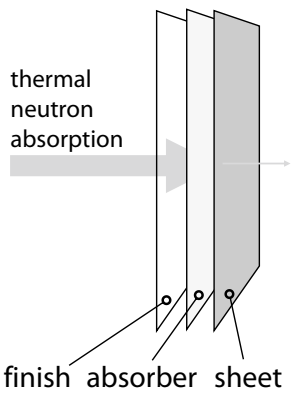
[ENDF/B-VII.1]

^{152}Gd	0.2 %	735 b
^{154}Gd	2.18 %	85 b
^{155}Gd	14.80 %	60737 b
^{156}Gd	20.47 %	1 b
^{157}Gd	15.65 %	252912 b
^{158}Gd	24.84 %	2 b
^{160}Gd	21.86 %	1 b
		total: 48573 b

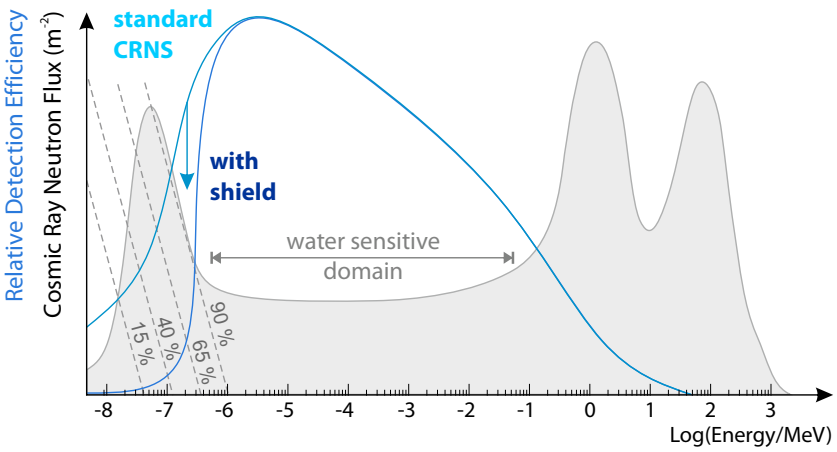
cross section at 25.3 meV (300 K)



The leaking-in of thermal neutrons penetrating the moderator of standard cosmic ray probes contributes to 12-20 % of the overall signal measured by the sensor. As thermal neutrons are strongly influenced by near-field hydrogen pools, a specifically adapted **absorber shield around the sensor** acts as a **signal quality enhancer**. Nibranium Coatings developed by StyX Neutronica are precisely tailored for the needs of CRNS.



Cosmic Ray Neutron Detector Response



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