

R.A. budget update with SaG4n

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09.03.2021

List of new results

Material	Status	Comments
Neutron yields for the (α ,n) reactions (using SaG4n and NeuCBOT)		
Rigid barrier	done	Composition: Elemental analysis
Reinforced PU foam	done	Composition: Elemental analysis
Solder InAgAr	done	
Siltem pellets	mostly done, not processed	It will be ready tomorrow
Pure Ti	mostly done, not processed	It will be ready tomorrow
Chip ATTiny102	mostly done, not processed	It will be ready tomorrow
Chip sot23	mostly done, not processed	It will be ready tomorrow
FC resistor	mostly done, not processed	It will be ready tomorrow
Si	mostly done, not processed	It will be ready tomorrow

Composition

Element	Mass fraction, %
H	1.9
Li	1.8E-3
Be	6.0E-5
B	2.79
C	45.9
N	1.7
O	32.85
F	0.0
Na	0.038
Al	1.1
Si	4.4
Ca	9.1
Ti	0.2

Legend:

Rigid barrier (EA)

Density: 1.803 g/cm³

	RA Chain	NeuCBOT TALYS-1.6	NeuCBOT TALYS-1.95	SaG4n JENDLTENDL01
Neutron yield, neutrons per decay of the parent nucleus	²³² Th	9.74E-6		5.33E-6
	²³⁵ U	1.04E-5		5.79E-6
	²³⁸ U upper	1.82E-6		9.375E-7
	²³⁸ U middle	6.24E-6		3.47E-6
	²³⁸ U lower	9.74E-7		5.52E-7

0.0	E-9	E-8	E-7	E-6	E-5
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Composition

Element	Mass fraction, %
H	5.3
Li	2.3E-5
Be	2.0E-6
B	0.1
C	72.0
N	5.9
O	14.75
F	0.72
Na	0.0091
Al	0.16
Si	0.68
Ca	0.43
Ti	0.0054

Density: 0.1 g/cm³ Legend:

Reinforced PU foam (EA)

	RA Chain	NeuCBOT TALYS-1.6	NeuCBOT TALYS-1.95	SaG4n JENDLTENDL01
Neutron yield, neutrons per decay of the parent nucleus	²³² Th	3.97E-6		2.30E-6
	²³⁵ U	3.67E-6		2.13E-6
	²³⁸ U upper	4.01E-7		1.85E-7
	²³⁸ U middle	2.46E-6		1.39E-6
	²³⁸ U lower	2.41E-7		1.34E-7

0.0	E-9	E-8	E-7	E-6	E-5
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Solder InAgAr

Composition

Element	Mass fraction, %
Ar	1.0
Ag	2.5
In	96.5

Density: 7.065 g/cm³

	RA Chain	NeuCBOT TALYS-1.6	NeuCBOT TALYS-1.95	SaG4n JENDLTENDL01
Neutron yield, neutrons per decay of the parent nucleus	²³² Th	3.92E-7		4.19E-7
	²³⁵ U	2.69E-7		2.81E-7
	²³⁸ U upper	1.39E-9		2.49E-9
	²³⁸ U middle	2.15E-7		2.14E-7
	²³⁸ U lower	3.50E-9		4.70E-9

Legend:

0.0	E-9	E-8	E-7	E-6	E-5
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