

(a, n) neutron yield

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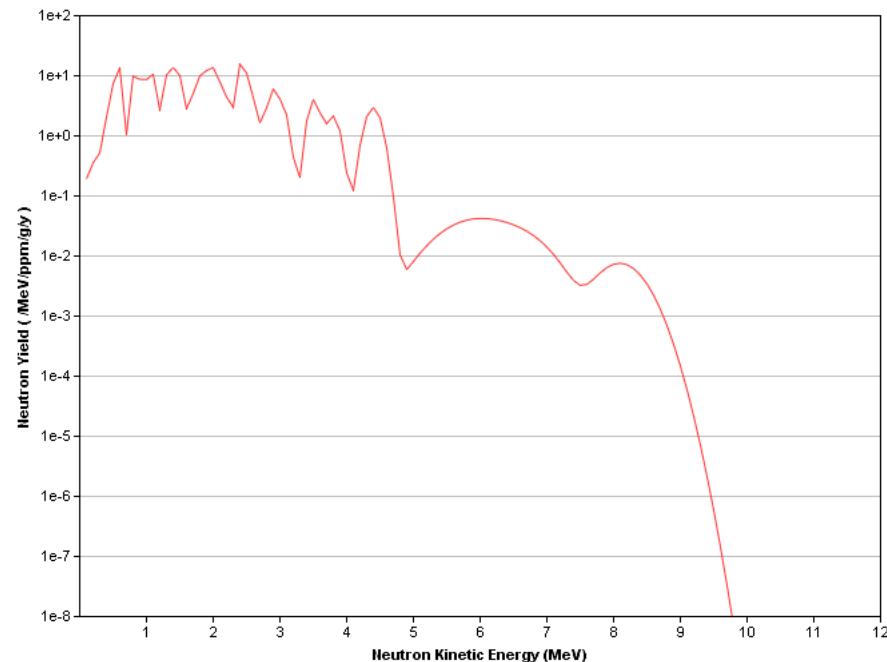
Neutron yield in Teflon

Chemical composition of Teflon(C:F = 24:76)

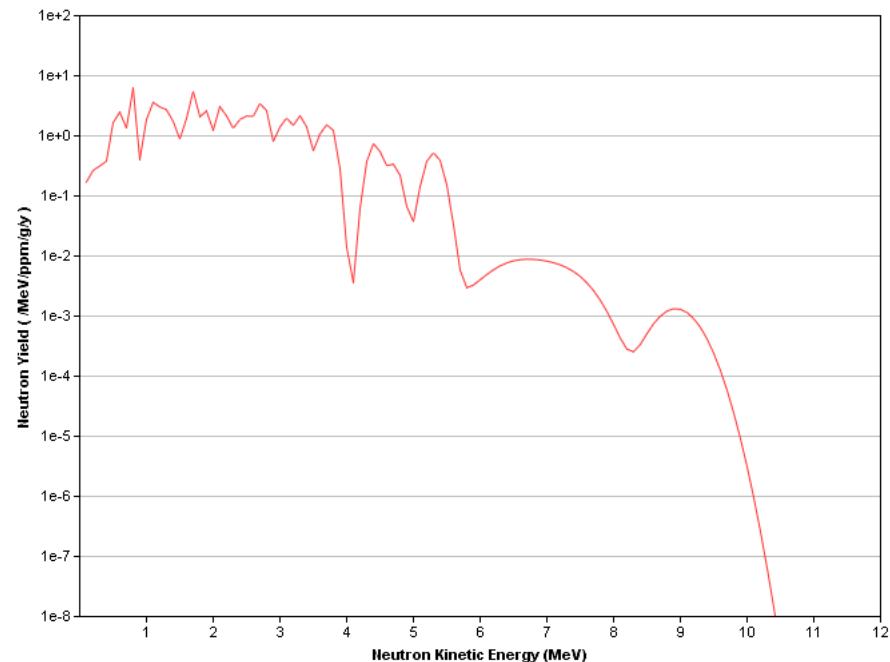
```
teflon = new G4Material( "teflon", 2.16*g/cm3, 2 );
```

```
teflon->AddElement( natC, 1 );
```

```
teflon->AddElement( natF, 2 );
```



U238 in Teflon, total neutron yield: 23 (/ppm/g/y)



Th232 in Teflon, total neutron yield: 7.77 (/ppm/g/y)

Thoughts on AmBe validation

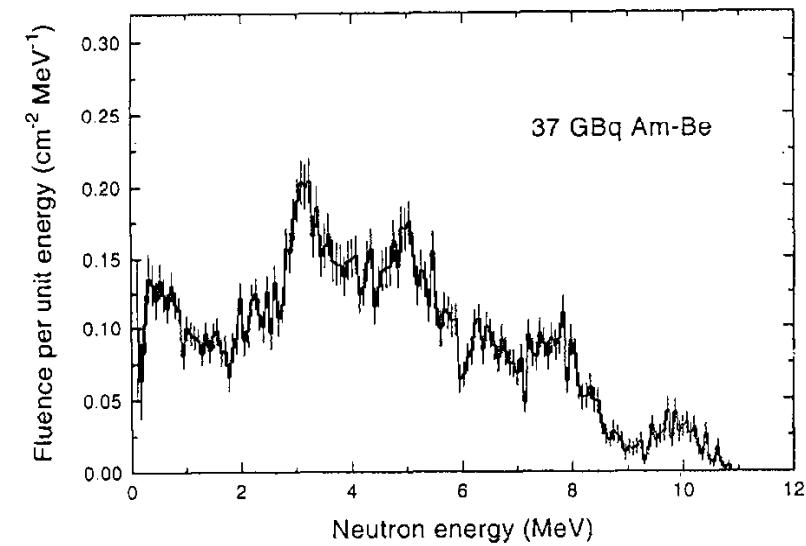
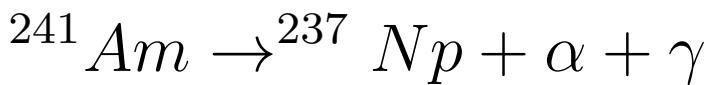


Fig. 5. Measured neutron energy spectrum from the 37 GBq Am-Be neutron source normalized to unit fluence, (uncertainties are due to counting statistics only).

241Am alpha:

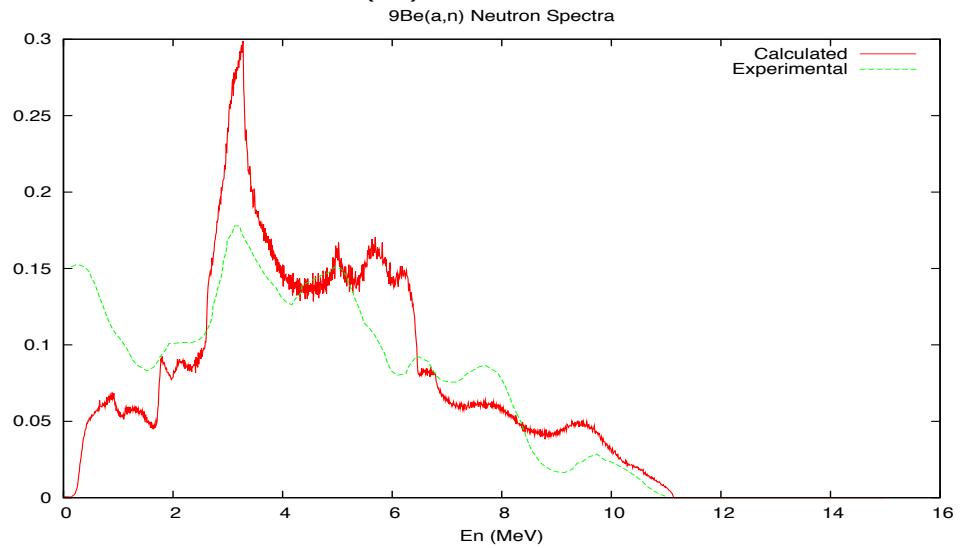
5.388	0.016
5.443	0.130
5.486	0.845
5.511	0.0022
5.545	0.0034

12C excited states:

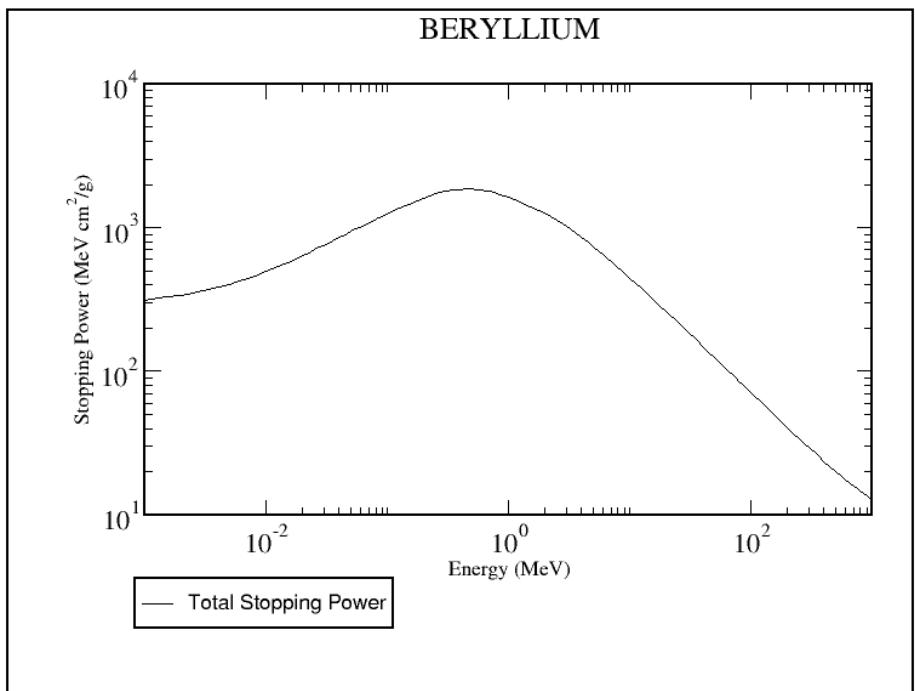
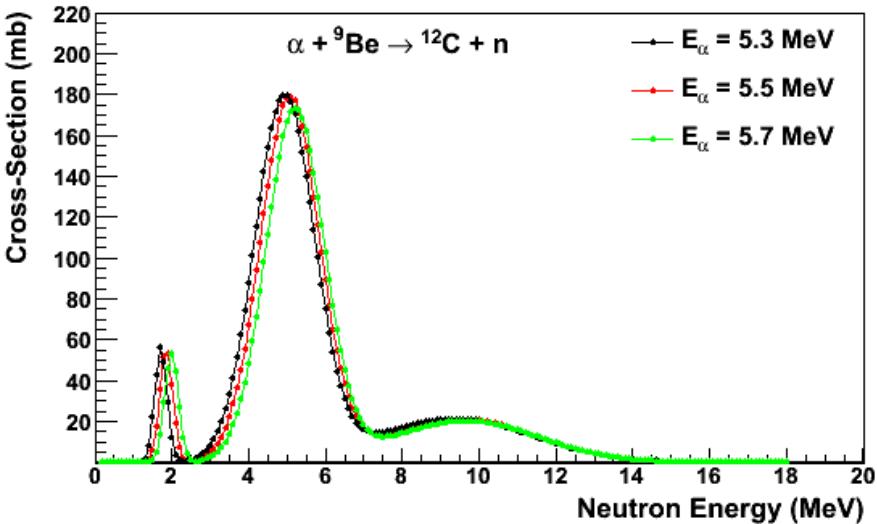
ground state
4.4MeV state
7.66MeV state

Neutron Spectra Calculation:

$$C(E_n, E_\alpha) dE_n = \int_0^{E_\alpha} n(E_n, E_\alpha) dE_n \frac{\sigma}{dE_\alpha/dx} dE_\alpha$$
$$E_n = a + b\cos(\theta)$$



Cross Section and Stopping Power



From Talys calculation

From astar program:
<http://physics.nist.gov/PhysRefData/Star/Text/ASTAR.html>