

**Muons in deuterium liquid (D<sub>2</sub>)**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
1 (D)	2.014101778(13)	0.164	21.8	0.13483	5.6249	0.4467	1.8923	3.1288	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	8.261				8.261	$6.627 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	6.412				6.412	$1.218 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	4.983				4.983	$2.292 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	3.846				3.846	$4.610 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	3.272				3.273	$7.447 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	2.437				2.437	$2.207 \times 10^1$		
100. MeV	$1.764 \times 10^2$	2.286				2.286	$3.057 \times 10^1$		
140. MeV	$2.218 \times 10^2$	2.135				2.135	$4.876 \times 10^1$		
200. MeV	$2.868 \times 10^2$	2.054			0.000	2.054	$7.752 \times 10^1$		
300. MeV	$3.917 \times 10^2$	2.022			0.000	2.022	$1.267 \times 10^2$		
339. MeV	$4.317 \times 10^2$	2.020			0.000	2.020	<i>Minimum ionization</i>		
400. MeV	$4.945 \times 10^2$	2.022			0.000	2.022	$1.762 \times 10^2$		
800. MeV	$8.995 \times 10^2$	2.071			0.000	2.072	$3.717 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	2.095			0.001	2.096	$4.677 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	2.135			0.001	2.136	$6.567 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	2.180	0.000		0.001	2.181	$9.345 \times 10^2$		
3.00 GeV	$3.104 \times 10^3$	2.234	0.000	0.000	0.002	2.236	$1.387 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	2.272	0.000	0.000	0.002	2.275	$1.830 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.364	0.001	0.001	0.004	2.370	$3.549 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.393	0.001	0.001	0.005	2.400	$4.387 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.435	0.001	0.002	0.007	2.446	$6.037 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.479	0.002	0.003	0.010	2.494	$8.465 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.526	0.004	0.005	0.015	2.550	$1.243 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.559	0.006	0.008	0.019	2.591	$1.632 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.634	0.014	0.019	0.037	2.704	$3.140 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.657	0.018	0.025	0.046	2.746	$3.874 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.692	0.027	0.038	0.064	2.821	$5.311 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.728	0.042	0.059	0.090	2.919	$7.401 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.769	0.068	0.096	0.135	3.067	$1.074 \times 10^5$		
400. GeV	$4.001 \times 10^5$	2.799	0.094	0.134	0.179	3.207	$1.393 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.870	0.209	0.296	0.363	3.738	$2.547 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.893	0.269	0.381	0.456	3.999	$3.064 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.928	0.392	0.551	0.647	4.518	$4.004 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.966	0.582	0.814	0.938	5.300	$5.229 \times 10^5$		
2.52 TeV	$2.523 \times 10^6$	2.991	0.749	1.042	1.199	5.981	<i>Muon critical energy</i>		
3.00 TeV	$3.000 \times 10^6$	3.009	0.905	1.253	1.439	6.607	$6.916 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	3.041	1.237	1.701	1.950	7.928	$8.296 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	3.118	2.598	3.510	4.084	13.309	$1.215 \times 10^6$		
10.0 TeV	$1.000 \times 10^7$	3.143	3.294	4.423	5.185	16.045	$1.352 \times 10^6$		
14.0 TeV	$1.400 \times 10^7$	3.182	4.688	6.239	7.460	21.569	$1.566 \times 10^6$		
20.0 TeV	$2.000 \times 10^7$	3.223	6.812	8.984	10.962	29.981	$1.801 \times 10^6$		
30.0 TeV	$3.000 \times 10^7$	3.271	10.360	13.544	17.064	44.240	$2.074 \times 10^6$		
40.0 TeV	$4.000 \times 10^7$	3.306	13.948	18.122	23.340	58.716	$2.270 \times 10^6$		
80.0 TeV	$8.000 \times 10^7$	3.392	28.408	36.452	49.789	118.041	$2.741 \times 10^6$		
100. TeV	$1.000 \times 10^8$	3.420	35.690	45.630	63.540	148.280	$2.892 \times 10^6$		