

**Muons in scandium (Sc)**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
21 (Sc)	44.955908(5)	2.989	216.0	0.15754	3.0517	0.1640	3.0593	4.6949	0.10
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	5.769				5.770	$9.712 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	4.529				4.529	$1.762 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	3.557				3.557	$3.273 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.775				2.775	$6.499 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	2.377				2.377	$1.042 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.796				1.796	$3.038 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.692				1.692	$4.188 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.588				1.588	$6.640 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.534				1.535	$1.050 \times 10^2$		
267. MeV	$3.577 \times 10^2$	1.522			0.000	1.522	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.523			0.000	1.524	$1.705 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.539	0.000		0.000	1.539	$2.359 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.622	0.000		0.000	1.623	$4.888 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.656	0.001		0.000	1.657	$6.108 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.711	0.001	0.000	0.001	1.713	$8.480 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	1.771	0.001	0.001	0.001	1.774	$1.192 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.838	0.002	0.002	0.001	1.844	$1.744 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.884	0.004	0.003	0.002	1.893	$2.279 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.989	0.009	0.009	0.004	2.010	$4.322 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.020	0.011	0.012	0.004	2.048	$5.308 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.065	0.017	0.019	0.006	2.108	$7.231 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.110	0.027	0.032	0.008	2.178	$1.003 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	2.158	0.044	0.055	0.012	2.270	$1.452 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.189	0.062	0.080	0.016	2.349	$1.885 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.261	0.141	0.193	0.031	2.627	$3.493 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.283	0.183	0.253	0.039	2.759	$4.236 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.316	0.269	0.379	0.054	3.018	$5.621 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.350	0.403	0.578	0.077	3.409	$7.491 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.389	0.634	0.912	0.116	4.051	$1.018 \times 10^5$		
400. GeV	$4.001 \times 10^5$	2.416	0.872	1.258	0.154	4.702	$1.247 \times 10^5$		
422. GeV	$4.217 \times 10^5$	2.421	0.924	1.334	0.163	4.844	<i>Muon critical energy</i>		
800. GeV	$8.001 \times 10^5$	2.483	1.859	2.684	0.312	7.338	$1.923 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.505	2.367	3.414	0.392	8.679	$2.173 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.538	3.387	4.873	0.555	11.355	$2.575 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.574	4.950	7.103	0.804	15.431	$3.026 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.615	7.563	10.809	1.230	22.217	$3.564 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.644	10.214	14.558	1.663	29.080	$3.956 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.716	20.918	29.639	3.463	56.736	$4.923 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.740	26.318	37.224	4.388	70.671	$5.238 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.777	37.100	52.355	6.290	98.522	$5.716 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.816	53.386	75.158	9.208	140.569	$6.223 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.861	80.465	113.098	14.258	210.683	$6.800 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.894	107.653	151.139	19.433	281.119	$7.210 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.974	216.637	303.421	41.077	564.110	$8.194 \times 10^5$		
100. TeV	$1.000 \times 10^8$	3.001	271.250	379.640	52.270	706.161	$8.510 \times 10^5$		