Table 083: Muons in Bismuth

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
83 (Bi)	208.98040 (1)	9.747	823.0	0.09410	3.1671	0.4152	3.8248	6.3505	0.14

T	p [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm^2]
		[MeV cm^2/g]					
10.0 MeV	4.704×10^1	3.838				3.838	1.517×10^0
14.0 MeV	5.616×10^1	3.066				3.066	2.694×10^0
20.0 MeV	6.802×10^1	2.445				2.445	4.907×10^0
30.0 MeV	8.509×10^1	1.935				1.935	9.562×10^0
40.0 MeV	1.003×10^2	1.673				1.673	1.515×10^1
80.0 MeV	1.527×10^2	1.288				1.288	4.321×10^1
100. MeV	1.764×10^2	1.221				1.221	5.919×10^1
140. MeV	2.218×10^2	1.157				1.157	9.299×10^1
200. MeV	2.868×10^2	1.129				1.130	1.457×10^2
223. MeV	3.114×10^2	1.128	0.000			1.128	*Minimum ionization*
300. MeV	3.917×10^2	1.136	0.000		0.000	1.137	2.341×10^2
400. MeV	4.945×10^2	1.158	0.000		0.000	1.159	3.213×10^2
800. MeV	8.995×10^2	1.245	0.001		0.000	1.247	6.534×10^2
1.00 GeV	1.101×10^3	1.279	0.001		0.000	1.281	8.116×10^2
1.40 GeV	1.502×10^3	1.332	0.002		0.001	1.335	1.117×10^3
2.00 GeV	2.103×10^3	1.389	0.004	0.001	0.001	1.395	1.556×10^3
3.00 GeV	3.104×10^3	1.453	0.007	0.003	0.001	1.465	2.254×10^3
4.00 GeV	4.104×10^3	1.498	0.010	0.006	0.002	1.516	2.925×10^3
8.00 GeV	8.105×10^3	1.598	0.025	0.022	0.003	1.649	5.444×10^3
10.0 GeV	1.011×10^4	1.628	0.034	0.031	0.004	1.698	6.639×10^3
14.0 GeV	1.411×10^4	1.671	0.052	0.051	0.005	1.780	8.938×10^3
20.0 GeV	2.011×10^4	1.714	0.080	0.085	0.007	1.887	1.221×10^4
30.0 GeV	3.011×10^4	1.759	0.131	0.150	0.011	2.052	1.729×10^4
40.0 GeV	4.011×10^4	1.789	0.186	0.221	0.014	2.210	2.198×10^4
80.0 GeV	8.011×10^4	1.856	0.420	0.534	0.028	2.838	3.791×10^4
100. GeV	1.001×10^5	1.876	0.544	0.703	0.034	3.159	4.459×10^4
140. GeV	1.401×10^5	1.905	0.798	1.051	0.048	3.804	5.612×10^4
140. GeV	1.406×10^5	1.905	0.802	1.056	0.048	3.812	*Muon critical energy*
200. GeV	2.001×10^5	1.935	1.196	1.603	0.068	4.804	7.013×10^4
300. GeV	3.001×10^5	1.969	1.875	2.524	0.102	6.472	8.801×10^4
400. GeV	4.001×10^5	1.992	2.577	3.479	0.136	8.186	1.017×10^5
800. GeV	8.001×10^5	2.049	5.471	7.392	0.276	15.189	1.371×10^5
1.00 TeV	1.000×10^6	2.068	6.956	9.393	0.346	18.765	1.489×10^5
1.40 TeV	1.400×10^6	2.096	9.932	13.384	0.490	25.903	1.670×10^5
2.00 TeV	2.000×10^6	2.126	14.481	19.473	0.709	36.790	1.863×10^5
3.00 TeV	3.000×10^6	2.161	22.071	29.590	1.083	54.907	2.084×10^5
4.00 TeV	4.000×10^6	2.186	29.758	39.814	1.464	73.223	2.241×10^5
8.00 TeV	8.000×10^6	2.248	60.733	80.904	3.039	146.925	2.619×10^5
10.0 TeV	1.000×10^7	2.268	76.335	101.556	3.847	184.008	2.741×10^5
14.0 TeV	1.400×10^7	2.299	107.453	142.764	5.505	258.023	2.924×10^5
20.0 TeV	2.000×10^7	2.332	154.390	204.836	8.044	369.604	3.117×10^5
30.0 TeV	3.000×10^7	2.370	232.528	308.108	12.430	555.437	3.336×10^5
40.0 TeV	4.000×10^7	2.398	310.928	411.618	16.917	741.863	3.491×10^5
80.0 TeV	8.000×10^7	2.467	624.949	825.936	35.637	1488.991	3.864×10^5
100. TeV	1.000×10^8	2.489	782.200	1033.280	45.300	1863.271	3.984×10^5