Table 015: Muons in Phosphorus

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
15 (P)	30.973762 (2)	2.200	173.0	0.23610	2.9158	0.1696	2.7815	4.5214	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	6.182				6.182	9.035×10^{-1}
14.0 MeV	5.616×10^1	4.845				4.845	1.642×10^0
20.0 MeV	6.802×10^1	3.800				3.800	3.056×10^0
30.0 MeV	8.509×10^1	2.959				2.959	6.079×10^0
40.0 MeV	1.003×10^2	2.532				2.532	9.756×10^0
80.0 MeV	1.527×10^2	1.907				1.907	2.853×10^1
100. MeV	1.764×10^2	1.795				1.795	3.937×10^1
140. MeV	2.218×10^2	1.685				1.685	6.247×10^1
200. MeV	2.868×10^2	1.627				1.627	9.885×10^1
273. MeV	3.633×10^2	1.613			0.000	1.613	*Minimum ionization*
300. MeV	3.917×10^2	1.614			0.000	1.614	1.607×10^2
400. MeV	4.945×10^2	1.629			0.000	1.629	2.224×10^2
800. MeV	8.995×10^2	1.714	0.000		0.000	1.714	4.617×10^2
1.00 GeV	1.101×10^3	1.749	0.000		0.000	1.750	5.771×10^2
1.40 GeV	1.502×10^3	1.805	0.001	0.000	0.001	1.807	8.018×10^2
2.00 GeV	2.103×10^3	1.867	0.001	0.001	0.001	1.869	1.128×10^3
3.00 GeV	3.104×10^3	1.935	0.002	0.001	0.001	1.940	1.652×10^3
4.00 GeV	4.104×10^3	1.982	0.003	0.002	0.002	1.989	2.161×10^3
8.00 GeV	8.105×10^3	2.089	0.007	0.006	0.004	2.105	4.109×10^3
10.0 GeV	1.011×10^4	2.120	0.009	0.009	0.005	2.143	5.050×10^3
14.0 GeV	1.411×10^4	2.166	0.013	0.015	0.006	2.200	6.891×10^3
20.0 GeV	2.011×10^4	2.211	0.021	0.024	0.009	2.265	9.577×10^3
30.0 GeV	3.011×10^4	2.259	0.034	0.042	0.013	2.348	1.391×10^4
40.0 GeV	4.011×10^4	2.291	0.048	0.061	0.017	2.417	1.811×10^4
80.0 GeV	8.011×10^4	2.364	0.108	0.147	0.032	2.652	3.388×10^4
100. GeV	1.001×10^5	2.387	0.140	0.194	0.040	2.762	4.127×10^4
140. GeV	1.401×10^5	2.421	0.206	0.289	0.056	2.972	5.522×10^4
200. GeV	2.001×10^5	2.457	0.310	0.440	0.079	3.286	7.441×10^4
300. GeV	3.001×10^5	2.497	0.487	0.697	0.119	3.800	1.027×10^5
400. GeV	4.001×10^5	2.525	0.671	0.965	0.158	4.320	1.274×10^5
552. GeV	5.519×10^5	2.557	0.957	1.382	0.219	5.115	*Muon critical energy*
800. GeV	8.001×10^5	2.595	1.432	2.067	0.320	6.415	2.029×10^5
1.00 TeV	1.000×10^6	2.617	1.825	2.632	0.402	7.476	2.317×10^5
1.40 TeV	1.400×10^6	2.651	2.613	3.761	0.570	9.595	2.788×10^5
2.00 TeV	2.000×10^6	2.688	3.821	5.486	0.824	12.821	3.328×10^5
3.00 TeV	3.000×10^6	2.731	5.843	8.355	1.262	18.191	3.979×10^5
4.00 TeV	4.000×10^6	2.761	7.895	11.258	1.707	23.623	4.460×10^5
8.00 TeV	8.000×10^6	2.836	16.187	22.941	3.557	45.522	5.659×10^5
10.0 TeV	1.000×10^7	2.861	20.373	28.819	4.508	56.562	6.052×10^5
14.0 TeV	1.400×10^7	2.899	28.730	40.538	6.465	78.633	6.650×10^5
20.0 TeV	2.000×10^7	2.939	41.358	58.202	9.468	111.968	7.286×10^5
30.0 TeV	3.000×10^7	2.986	62.356	87.604	14.672	167.619	8.011×10^5
40.0 TeV	4.000×10^7	3.020	83.442	117.091	20.007	223.561	8.526×10^5
80.0 TeV	8.000×10^7	3.104	167.987	235.128	42.342	448.562	9.764×10^5
100. TeV	1.000×10^8	3.131	210.360	294.210	53.900	561.602	1.016×10^6