Table 023: Muons in Vanadium

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
23 (V)	50.9415 (1)	6.110	245.0	0.15436	3.0163	0.0691	3.0322	4.2659	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	5.463				5.463	1.028×10^0
14.0 MeV	5.616×10^1	4.292				4.292	1.862×10^0
20.0 MeV	6.802×10^1	3.372				3.373	3.457×10^0
30.0 MeV	8.509×10^1	2.631				2.631	6.859×10^0
40.0 MeV	1.003×10^2	2.253				2.254	1.099×10^1
80.0 MeV	1.527×10^2	1.700				1.700	3.207×10^1
100. MeV	1.764×10^2	1.600				1.600	4.422×10^1
140. MeV	2.218×10^2	1.501				1.501	7.015×10^1
200. MeV	2.868×10^2	1.449				1.449	1.110×10^2
273. MeV	3.633×10^2	1.436			0.000	1.437	*Minimum ionization*
300. MeV	3.917×10^2	1.437			0.000	1.438	1.805×10^2
400. MeV	4.945×10^2	1.451	0.000		0.000	1.452	2.497×10^2
800. MeV	8.995×10^2	1.529	0.000		0.000	1.530	5.180×10^2
1.00 GeV	1.101×10^3	1.561	0.001		0.000	1.562	6.473×10^2
1.40 GeV	1.502×10^3	1.613	0.001	0.000	0.001	1.615	8.990×10^2
2.00 GeV	2.103×10^3	1.669	0.001	0.001	0.001	1.673	1.264×10^3
3.00 GeV	3.104×10^3	1.733	0.003	0.002	0.001	1.739	1.849×10^3
4.00 GeV	4.104×10^3	1.777	0.004	0.003	0.002	1.786	2.416×10^3
8.00 GeV	8.105×10^3	1.877	0.009	0.009	0.003	1.899	4.581×10^3
10.0 GeV	1.011×10^4	1.907	0.012	0.013	0.004	1.936	5.624×10^3
14.0 GeV	1.411×10^4	1.950	0.018	0.020	0.006	1.995	7.658×10^3
20.0 GeV	2.011×10^4	1.993	0.028	0.033	0.008	2.063	1.061×10^4
30.0 GeV	3.011×10^4	2.039	0.046	0.058	0.012	2.155	1.535×10^4
40.0 GeV	4.011×10^4	2.069	0.065	0.084	0.016	2.236	1.991×10^4
80.0 GeV	8.011×10^4	2.138	0.148	0.202	0.031	2.520	3.673×10^4
100. GeV	1.001×10^5	2.160	0.192	0.266	0.039	2.656	4.446×10^4
140. GeV	1.401×10^5	2.191	0.282	0.397	0.054	2.925	5.880×10^4
200. GeV	2.001×10^5	2.224	0.423	0.606	0.077	3.330	7.802×10^4
300. GeV	3.001×10^5	2.262	0.664	0.956	0.115	3.997	1.054×10^5
385. GeV	3.848×10^5	2.285	0.875	1.263	0.147	4.570	*Muon critical energy*
400. GeV	4.001×10^5	2.288	0.913	1.319	0.153	4.674	1.285×10^5
800. GeV	8.001×10^5	2.353	1.947	2.812	0.309	7.421	1.959×10^5
1.00 TeV	1.000×10^6	2.374	2.478	3.577	0.388	8.818	2.205×10^5
1.40 TeV	1.400×10^6	2.406	3.546	5.104	0.550	11.607	2.600×10^5
2.00 TeV	2.000×10^6	2.440	5.181	7.437	0.797	15.856	3.040×10^5
3.00 TeV	3.000×10^6	2.480	7.914	11.316	1.219	22.930	3.562×10^5
4.00 TeV	4.000×10^6	2.508	10.687	15.239	1.648	30.084	3.942×10^5
8.00 TeV	8.000×10^6	2.578	21.882	31.019	3.431	58.910	4.875×10^5
10.0 TeV	1.000×10^7	2.601	27.529	38.955	4.347	73.433	5.178×10^5
14.0 TeV	1.400×10^7	2.637	38.795	54.786	6.230	102.448	5.637×10^5
20.0 TeV	2.000×10^7	2.674	55.806	78.644	9.118	146.243	6.125×10^5
30.0 TeV	3.000×10^7	2.718	84.125	118.339	14.115	219.298	6.680×10^5
40.0 TeV	4.000×10^7	2.750	112.559	158.138	19.235	292.682	7.073×10^5
80.0 TeV	8.000×10^7	2.828	226.515	317.459	40.647	587.449	8.019×10^5
100. TeV	1.000×10^8	2.853	283.610	397.200	51.720	735.384	8.322×10^5