Muons in Liquid hydrogen (H_2)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
1 (H)	1.008(7)	7.080×10^{-2}	21.8	0.32969	3.0000	0.1641	1.9641	2.6783	0.00

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	16.508				16.508	3.316×10^{-1}
14.0 MeV	5.616×10^1	12.812				12.812	6.097×10^{-1}
20.0 MeV	6.802×10^1	9.956				9.956	1.147×10^0
30.0 MeV	8.509×10^1	7.684				7.684	2.307×10^0
40.0 MeV	1.003×10^2	6.539				6.539	3.727×10^0
80.0 MeV	1.527×10^2	4.870				4.870	1.105×10^1
100. MeV	1.764×10^2	4.550				4.550	1.531×10^1
140. MeV	2.218×10^2	4.217				4.217	2.448×10^1
200. MeV	2.868×10^2	4.018			0.000	4.018	3.912×10^1
300. MeV	3.917×10^2	3.926			0.000	3.926	6.438×10^1
354. MeV	4.478×10^2	3.919			0.000	3.919	*Minimum ionization*
400. MeV	4.945×10^2	3.922			0.000	3.922	8.988×10^1
800. MeV	8.995×10^2	4.029			0.000	4.030	1.906×10^2
1.00 GeV	1.101×10^3	4.084			0.001	4.084	2.399×10^2
1.40 GeV	1.502×10^3	4.174	0.000		0.001	4.175	3.367×10^2
2.00 GeV	2.103×10^3	4.274	0.000		0.001	4.275	4.786×10^2
3.00 GeV	3.104×10^3	4.389	0.000	0.000	0.002	4.391	7.092×10^2
4.00 GeV	4.104×10^3	4.469	0.001	0.000	0.002	4.472	9.348×10^2
8.00 GeV	8.105×10^3	4.655	0.001	0.001	0.005	4.663	1.808×10^3
10.0 GeV	1.011×10^4	4.713	0.002	0.002	0.006	4.722	2.235×10^3
14.0 GeV	1.411×10^4	4.798	0.003	0.003	0.008	4.812	3.073×10^3
20.0 GeV	2.011×10^4	4.884	0.005	0.006	0.011	4.906	4.307×10^3
30.0 GeV	3.011×10^4	4.979	0.008	0.010	0.015	5.013	6.323×10^3
40.0 GeV	4.011×10^4	5.044	0.012	0.015	0.020	5.091	8.301×10^3
80.0 GeV	8.011×10^4	5.194	0.028	0.038	0.038	5.298	1.599×10^4
100. GeV	1.001×10^5	5.241	0.037	0.050	0.047	5.375	1.974×10^4
140. GeV	1.401×10^5	5.310	0.055	0.076	0.066	5.508	2.708×10^4
200. GeV	2.001×10^5	5.383	0.085	0.118	0.093	5.679	3.781×10^4
300. GeV	3.001×10^5	5.465	0.137	0.191	0.139	5.932	5.503×10^4
400. GeV	4.001×10^5	5.524	0.191	0.268	0.185	6.168	7.156×10^4
800. GeV	8.001×10^5	5.666	0.423	0.592	0.373	7.053	1.321×10^5
1.00 TeV	1.000×10^6	5.712	0.544	0.761	0.468	7.485	1.596×10^5
1.40 TeV	1.400×10^6	5.782	0.791	1.101	0.663	8.338	2.102×10^5
2.00 TeV	2.000×10^6	5.858	1.175	1.627	0.961	9.621	2.772×10^5
3.00 TeV	3.000×10^6	5.945	1.827	2.504	1.474	11.749	3.711×10^5
3.07 TeV	3.070×10^6	5.950	1.873	2.566	1.510	11.899	*Muon critical energy*
4.00 TeV	4.000×10^6	6.007	2.496	3.399	1.996	13.898	4.493×10^5
8.00 TeV	8.000×10^6	6.161	5.240	7.012	4.180	22.594	6.729×10^5
10.0 TeV	1.000×10^7	6.212	6.642	8.837	5.308	26.999	7.538×10^5
14.0 TeV	1.400×10^7	6.289	9.452	12.466	7.642	35.849	8.820×10^5
20.0 TeV	2.000×10^7	6.372	13.734	17.952	11.236	49.294	1.024×10^6
30.0 TeV	3.000×10^7	6.468	20.884	27.062	17.498	71.912	1.191×10^6
40.0 TeV	4.000×10^7	6.538	28.113	36.210	23.940	94.800	1.312×10^6
80.0 TeV	8.000×10^7	6.709	57.248	72.833	51.135	187.924	1.606×10^6
100. TeV	1.000×10^8	6.765	71.920	91.170	65.290	235.145	1.701×10^6