

**Table 288: Muons in Liquid chlorine (Cl<sub>2</sub>)**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
17 (Cl)	35.453 (2)	1.574	174.0	0.18024	3.0000	0.2000	3.0000	4.8776	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	6.123				6.123	$9.124 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	4.800				4.800	$1.658 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	3.766				3.766	$3.085 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.936				2.936	$6.134 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	2.514				2.514	$9.838 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	1.901				1.901	$2.871 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.791				1.791	$3.957 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.681				1.681	$6.272 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.622				1.623	$9.919 \times 10^1$		
273. MeV	$3.633 \times 10^2$	1.608			0.000	1.609	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.609			0.000	1.610	$1.612 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.624	0.000		0.000	1.625	$2.231 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.709	0.000		0.000	1.710	$4.629 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.745	0.000		0.000	1.746	$5.787 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.801	0.001	0.000	0.001	1.803	$8.039 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	1.863	0.001	0.001	0.001	1.866	$1.131 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.932	0.002	0.001	0.001	1.937	$1.656 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.980	0.003	0.002	0.002	1.987	$2.165 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.088	0.007	0.007	0.004	2.106	$4.114 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.120	0.010	0.010	0.004	2.144	$5.055 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.166	0.015	0.016	0.006	2.203	$6.893 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.212	0.023	0.027	0.009	2.270	$9.574 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.261	0.038	0.046	0.013	2.357	$1.389 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.293	0.053	0.068	0.016	2.431	$1.807 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.366	0.120	0.163	0.032	2.682	$3.371 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.389	0.155	0.215	0.040	2.799	$4.101 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.423	0.228	0.321	0.055	3.028	$5.474 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.458	0.343	0.490	0.078	3.370	$7.352 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.498	0.539	0.775	0.118	3.929	$1.010 \times 10^5$		
400. GeV	$4.001 \times 10^5$	2.526	0.742	1.070	0.157	4.495	$1.248 \times 10^5$		
505. GeV	$5.055 \times 10^5$	2.549	0.961	1.389	0.198	5.098	<i>Muon critical energy</i>		
800. GeV	$8.001 \times 10^5$	2.594	1.583	2.285	0.317	6.780	$1.967 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.617	2.016	2.909	0.398	7.941	$2.240 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.651	2.887	4.154	0.565	10.256	$2.682 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.687	4.220	6.058	0.817	13.783	$3.185 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.729	6.451	9.223	1.251	19.654	$3.789 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.759	8.715	12.426	1.692	25.592	$4.234 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.834	17.860	25.311	3.524	49.530	$5.338 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.858	22.476	31.794	4.466	61.595	$5.699 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.896	31.691	44.718	6.403	85.709	$6.247 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.936	45.614	64.196	9.376	122.122	$6.831 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.982	68.764	96.622	14.525	182.893	$7.495 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	3.016	92.009	129.139	19.802	243.967	$7.967 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	3.098	185.203	259.302	41.886	489.491	$9.102 \times 10^5$		
100. TeV	$1.000 \times 10^8$	3.126	231.910	324.450	53.310	612.796	$9.466 \times 10^5$		