

## Muons in gel in photographic emulsion

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.53973	1.291	74.8	0.10102	3.4418	0.1709	2.7058	3.2687	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	7.747				7.747		$7.134 \times 10^{-1}$	
14.0 MeV	$5.616 \times 10^1$	6.043				6.043		$1.304 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	4.719				4.719		$2.441 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	3.661				3.661		$4.880 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	3.126				3.126		$7.855 \times 10^0$	
80.0 MeV	$1.527 \times 10^2$	2.347				2.347		$2.309 \times 10^1$	
100. MeV	$1.764 \times 10^2$	2.200				2.200		$3.191 \times 10^1$	
140. MeV	$2.218 \times 10^2$	2.048				2.048		$5.085 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.960				1.960		$8.091 \times 10^1$	
300. MeV	$3.917 \times 10^2$	1.926			0.000	1.926		$1.325 \times 10^2$	
318. MeV	$4.105 \times 10^2$	1.926			0.000	1.926			<i>Minimum ionization</i>
400. MeV	$4.945 \times 10^2$	1.932			0.000	1.932		$1.844 \times 10^2$	
800. MeV	$8.995 \times 10^2$	2.004	0.000		0.000	2.004		$3.877 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	2.037	0.000		0.000	2.038		$4.867 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	2.091	0.000		0.001	2.092		$6.803 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	2.150	0.001	0.000	0.001	2.152		$9.629 \times 10^2$	
3.00 GeV	$3.104 \times 10^3$	2.218	0.001	0.001	0.001	2.221		$1.420 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	2.265	0.001	0.001	0.002	2.269		$1.865 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	2.373	0.003	0.003	0.004	2.383		$3.580 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	2.406	0.004	0.004	0.005	2.419		$4.412 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	2.453	0.007	0.007	0.007	2.474		$6.046 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	2.501	0.010	0.012	0.009	2.533		$8.441 \times 10^3$	
30.0 GeV	$3.011 \times 10^4$	2.553	0.017	0.021	0.014	2.605		$1.233 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.589	0.024	0.031	0.018	2.662		$1.613 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.670	0.055	0.075	0.034	2.835		$3.066 \times 10^4$	
100. GeV	$1.001 \times 10^5$	2.696	0.072	0.098	0.043	2.909		$3.763 \times 10^4$	
140. GeV	$1.401 \times 10^5$	2.733	0.106	0.148	0.059	3.047		$5.106 \times 10^4$	
200. GeV	$2.001 \times 10^5$	2.773	0.160	0.226	0.084	3.243		$7.014 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.818	0.253	0.360	0.126	3.556		$9.957 \times 10^4$	
400. GeV	$4.001 \times 10^5$	2.850	0.349	0.499	0.167	3.865		$1.265 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.927	0.749	1.078	0.338	5.092		$2.164 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.952	0.956	1.377	0.425	5.710		$2.535 \times 10^5$	
1.07 TeV	$1.068 \times 10^6$	2.959	1.026	1.478	0.455	5.919			<i>Muon critical energy</i>
1.40 TeV	$1.400 \times 10^6$	2.990	1.373	1.973	0.602	6.939		$3.169 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	3.031	2.013	2.887	0.872	8.804		$3.936 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	3.079	3.087	4.408	1.337	11.910		$4.909 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	3.113	4.180	5.950	1.809	15.052		$5.654 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	3.196	8.606	12.163	3.776	27.742		$7.582 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	3.224	10.845	15.292	4.790	34.151		$8.231 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	3.266	15.312	21.527	6.878	46.984		$9.225 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	3.311	22.072	30.932	10.087	66.402		$1.029 \times 10^6$	
30.0 TeV	$3.000 \times 10^7$	3.363	33.326	46.580	15.657	98.927		$1.152 \times 10^6$	
40.0 TeV	$4.000 \times 10^7$	3.401	44.642	62.279	21.375	131.697		$1.239 \times 10^6$	
80.0 TeV	$8.000 \times 10^7$	3.494	90.017	125.128	45.375	264.014		$1.450 \times 10^6$	
100. TeV	$1.000 \times 10^8$	3.525	112.766	156.590	57.818	330.698		$1.517 \times 10^6$	