

## Muons in iron (Fe)

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
26 (Fe)	55.845 (2)	7.874	286.0	0.14680	2.9632	-0.0012	3.1531	4.2911	0.12

  

$T$	$p$	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range
	[MeV/c]	[MeV cm <sup>2</sup> /g]			[MeV cm <sup>2</sup> /g]		[g/cm <sup>2</sup> ]
10.0 MeV	$4.704 \times 10^1$	5.494				5.494	$1.025 \times 10^0$
14.0 MeV	$5.616 \times 10^1$	4.321				4.321	$1.854 \times 10^0$
20.0 MeV	$6.802 \times 10^1$	3.399				3.399	$3.437 \times 10^0$
30.0 MeV	$8.509 \times 10^1$	2.654				2.654	$6.812 \times 10^0$
40.0 MeV	$1.003 \times 10^2$	2.274				2.274	$1.091 \times 10^1$
80.0 MeV	$1.527 \times 10^2$	1.717				1.717	$3.178 \times 10^1$
100. MeV	$1.764 \times 10^2$	1.616				1.616	$4.382 \times 10^1$
140. MeV	$2.218 \times 10^2$	1.516				1.516	$6.950 \times 10^1$
200. MeV	$2.868 \times 10^2$	1.463				1.463	$1.099 \times 10^2$
274. MeV	$3.642 \times 10^2$	1.451			0.000	1.451	<i>Minimum ionization</i>
300. MeV	$3.917 \times 10^2$	1.452			0.000	1.453	$1.787 \times 10^2$
400. MeV	$4.945 \times 10^2$	1.467	0.000		0.000	1.467	$2.472 \times 10^2$
800. MeV	$8.995 \times 10^2$	1.548	0.000		0.000	1.548	$5.124 \times 10^2$
1.00 GeV	$1.101 \times 10^3$	1.581	0.001		0.000	1.582	$6.402 \times 10^2$
1.40 GeV	$1.502 \times 10^3$	1.635	0.001	0.000	0.001	1.637	$8.885 \times 10^2$
2.00 GeV	$2.103 \times 10^3$	1.694	0.002	0.001	0.001	1.697	$1.248 \times 10^3$
3.00 GeV	$3.104 \times 10^3$	1.760	0.003	0.002	0.001	1.766	$1.825 \times 10^3$
4.00 GeV	$4.104 \times 10^3$	1.806	0.004	0.003	0.002	1.816	$2.383 \times 10^3$
8.00 GeV	$8.105 \times 10^3$	1.911	0.010	0.010	0.003	1.935	$4.509 \times 10^3$
10.0 GeV	$1.011 \times 10^4$	1.942	0.014	0.014	0.004	1.975	$5.532 \times 10^3$
14.0 GeV	$1.411 \times 10^4$	1.987	0.021	0.023	0.006	2.038	$7.524 \times 10^3$
20.0 GeV	$2.011 \times 10^4$	2.032	0.033	0.038	0.008	2.112	$1.041 \times 10^4$
30.0 GeV	$3.011 \times 10^4$	2.080	0.054	0.066	0.012	2.213	$1.504 \times 10^4$
40.0 GeV	$4.011 \times 10^4$	2.112	0.076	0.097	0.016	2.302	$1.946 \times 10^4$
80.0 GeV	$8.011 \times 10^4$	2.184	0.171	0.233	0.031	2.620	$3.572 \times 10^4$
100. GeV	$1.001 \times 10^5$	2.207	0.221	0.306	0.038	2.773	$4.314 \times 10^4$
140. GeV	$1.401 \times 10^5$	2.239	0.325	0.458	0.054	3.076	$5.683 \times 10^4$
200. GeV	$2.001 \times 10^5$	2.273	0.488	0.698	0.076	3.535	$7.501 \times 10^4$
300. GeV	$3.001 \times 10^5$	2.312	0.766	1.100	0.114	4.293	$1.006 \times 10^5$
347. GeV	$3.470 \times 10^5$	2.326	0.900	1.294	0.132	4.652	<i>Muon critical energy</i>
400. GeV	$4.001 \times 10^5$	2.339	1.053	1.517	0.152	5.063	$1.221 \times 10^5$
800. GeV	$8.001 \times 10^5$	2.406	2.244	3.232	0.307	8.190	$1.836 \times 10^5$
1.00 TeV	$1.000 \times 10^6$	2.428	2.856	4.111	0.386	9.781	$2.060 \times 10^5$
1.40 TeV	$1.400 \times 10^6$	2.461	4.085	5.864	0.547	12.958	$2.414 \times 10^5$
2.00 TeV	$2.000 \times 10^6$	2.496	5.967	8.543	0.791	17.798	$2.807 \times 10^5$
3.00 TeV	$3.000 \times 10^6$	2.537	9.112	12.996	1.211	25.856	$3.271 \times 10^5$
4.00 TeV	$4.000 \times 10^6$	2.566	12.302	17.499	1.637	34.005	$3.607 \times 10^5$
8.00 TeV	$8.000 \times 10^6$	2.638	25.178	35.609	3.406	66.833	$4.431 \times 10^5$
10.0 TeV	$1.000 \times 10^7$	2.662	31.673	44.716	4.316	83.368	$4.698 \times 10^5$
14.0 TeV	$1.400 \times 10^7$	2.698	44.628	62.884	6.184	116.396	$5.103 \times 10^5$
20.0 TeV	$2.000 \times 10^7$	2.737	64.188	90.262	9.050	166.238	$5.532 \times 10^5$
30.0 TeV	$3.000 \times 10^7$	2.783	96.751	135.814	14.009	249.357	$6.020 \times 10^5$
40.0 TeV	$4.000 \times 10^7$	2.815	129.444	181.483	19.089	332.833	$6.366 \times 10^5$
80.0 TeV	$8.000 \times 10^7$	2.895	260.455	364.300	40.329	667.981	$7.197 \times 10^5$
100. TeV	$1.000 \times 10^8$	2.922	326.090	455.800	51.310	836.123	$7.464 \times 10^5$