

**Muons in rhenium (Re)**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
75 (Re)	186.207(1)	21.020	736.0	0.15184	2.8627	0.0559	3.4845	5.3445	0.08

  

$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]
10.0 MeV	$4.704 \times 10^1$	3.991				3.991	$1.450 \times 10^0$
14.0 MeV	$5.616 \times 10^1$	3.179				3.179	$2.584 \times 10^0$
20.0 MeV	$6.802 \times 10^1$	2.529				2.529	$4.722 \times 10^0$
30.0 MeV	$8.509 \times 10^1$	1.996				1.996	$9.229 \times 10^0$
40.0 MeV	$1.003 \times 10^2$	1.722				1.722	$1.466 \times 10^1$
80.0 MeV	$1.527 \times 10^2$	1.320				1.320	$4.197 \times 10^1$
100. MeV	$1.764 \times 10^2$	1.248				1.248	$5.759 \times 10^1$
140. MeV	$2.218 \times 10^2$	1.179				1.179	$9.070 \times 10^1$
200. MeV	$2.868 \times 10^2$	1.147				1.147	$1.425 \times 10^2$
243. MeV	$3.325 \times 10^2$	1.143	0.000			1.143	<i>Minimum ionization</i>
300. MeV	$3.917 \times 10^2$	1.147	0.000		0.000	1.148	$2.298 \times 10^2$
400. MeV	$4.945 \times 10^2$	1.166	0.000		0.000	1.166	$3.163 \times 10^2$
800. MeV	$8.995 \times 10^2$	1.245	0.001		0.000	1.246	$6.476 \times 10^2$
1.00 GeV	$1.101 \times 10^3$	1.277	0.001		0.000	1.279	$8.060 \times 10^2$
1.40 GeV	$1.502 \times 10^3$	1.327	0.002		0.001	1.330	$1.112 \times 10^3$
2.00 GeV	$2.103 \times 10^3$	1.382	0.004	0.001	0.001	1.388	$1.554 \times 10^3$
3.00 GeV	$3.104 \times 10^3$	1.443	0.007	0.003	0.001	1.455	$2.256 \times 10^3$
4.00 GeV	$4.104 \times 10^3$	1.486	0.010	0.006	0.002	1.504	$2.932 \times 10^3$
8.00 GeV	$8.105 \times 10^3$	1.583	0.024	0.021	0.003	1.632	$5.475 \times 10^3$
10.0 GeV	$1.011 \times 10^4$	1.613	0.031	0.030	0.004	1.678	$6.683 \times 10^3$
14.0 GeV	$1.411 \times 10^4$	1.655	0.048	0.049	0.005	1.757	$9.010 \times 10^3$
20.0 GeV	$2.011 \times 10^4$	1.697	0.074	0.080	0.007	1.859	$1.233 \times 10^4$
30.0 GeV	$3.011 \times 10^4$	1.741	0.121	0.141	0.011	2.015	$1.749 \times 10^4$
40.0 GeV	$4.011 \times 10^4$	1.770	0.172	0.208	0.014	2.165	$2.227 \times 10^4$
80.0 GeV	$8.011 \times 10^4$	1.836	0.388	0.502	0.028	2.755	$3.861 \times 10^4$
100. GeV	$1.001 \times 10^5$	1.856	0.503	0.660	0.035	3.055	$4.551 \times 10^4$
140. GeV	$1.401 \times 10^5$	1.885	0.738	0.986	0.048	3.659	$5.746 \times 10^4$
148. GeV	$1.480 \times 10^5$	1.890	0.786	1.053	0.051	3.781	<i>Muon critical energy</i>
200. GeV	$2.001 \times 10^5$	1.915	1.106	1.503	0.069	4.594	$7.207 \times 10^4$
300. GeV	$3.001 \times 10^5$	1.948	1.734	2.366	0.103	6.153	$9.083 \times 10^4$
400. GeV	$4.001 \times 10^5$	1.972	2.382	3.260	0.138	7.753	$1.053 \times 10^5$
800. GeV	$8.001 \times 10^5$	2.030	5.059	6.924	0.278	14.293	$1.427 \times 10^5$
1.00 TeV	$1.000 \times 10^6$	2.049	6.433	8.798	0.350	17.632	$1.553 \times 10^5$
1.40 TeV	$1.400 \times 10^6$	2.077	9.187	12.536	0.495	24.296	$1.746 \times 10^5$
2.00 TeV	$2.000 \times 10^6$	2.108	13.396	18.238	0.716	34.460	$1.952 \times 10^5$
3.00 TeV	$3.000 \times 10^6$	2.143	20.421	27.714	1.095	51.374	$2.188 \times 10^5$
4.00 TeV	$4.000 \times 10^6$	2.168	27.536	37.290	1.479	68.475	$2.356 \times 10^5$
8.00 TeV	$8.000 \times 10^6$	2.231	56.211	75.774	3.072	137.290	$2.761 \times 10^5$
10.0 TeV	$1.000 \times 10^7$	2.251	70.656	95.116	3.889	171.914	$2.891 \times 10^5$
14.0 TeV	$1.400 \times 10^7$	2.283	99.467	133.715	5.566	241.032	$3.086 \times 10^5$
20.0 TeV	$2.000 \times 10^7$	2.317	142.926	191.858	8.134	345.236	$3.293 \times 10^5$
30.0 TeV	$3.000 \times 10^7$	2.356	215.274	288.588	12.570	518.789	$3.528 \times 10^5$
40.0 TeV	$4.000 \times 10^7$	2.384	287.870	385.541	17.109	692.906	$3.694 \times 10^5$
80.0 TeV	$8.000 \times 10^7$	2.453	578.651	773.612	36.046	1390.764	$4.093 \times 10^5$
100. TeV	$1.000 \times 10^8$	2.476	724.270	967.820	45.820	1740.388	$4.222 \times 10^5$