

## Muons in uranium oxide (UO<sub>2</sub>)

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.39996	10.960	720.6	0.20463	2.6711	-0.1938	3.5292	5.9605	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
				[MeV cm <sup>2</sup> /g]					
10.0 MeV	$4.704 \times 10^1$	4.059				4.059		$1.405 \times 10^0$	
14.0 MeV	$5.616 \times 10^1$	3.215				3.215		$2.523 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	2.548				2.548		$4.641 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	2.009				2.009		$9.118 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	1.732				1.732		$1.451 \times 10^1$	
80.0 MeV	$1.527 \times 10^2$	1.326				1.326		$4.170 \times 10^1$	
100. MeV	$1.764 \times 10^2$	1.253				1.253		$5.725 \times 10^1$	
140. MeV	$2.218 \times 10^2$	1.184				1.184		$9.024 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.151				1.151		$1.418 \times 10^2$	
239. MeV	$3.285 \times 10^2$	1.147	0.000			1.148			<i>Minimum ionization</i>
300. MeV	$3.917 \times 10^2$	1.152	0.000		0.000	1.153		$2.288 \times 10^2$	
400. MeV	$4.945 \times 10^2$	1.171	0.000		0.000	1.172		$3.149 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.252	0.001		0.000	1.254		$6.445 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	1.285	0.001		0.000	1.287		$8.018 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	1.337	0.002		0.001	1.340		$1.106 \times 10^3$	
2.00 GeV	$2.103 \times 10^3$	1.393	0.004	0.001	0.001	1.399		$1.544 \times 10^3$	
3.00 GeV	$3.104 \times 10^3$	1.457	0.007	0.003	0.001	1.468		$2.241 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	1.501	0.010	0.006	0.002	1.518		$2.910 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	1.601	0.024	0.020	0.003	1.650		$5.428 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	1.631	0.032	0.029	0.004	1.697		$6.622 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	1.675	0.049	0.048	0.005	1.778		$8.923 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	1.718	0.077	0.079	0.007	1.883		$1.220 \times 10^4$	
30.0 GeV	$3.011 \times 10^4$	1.764	0.126	0.140	0.011	2.042		$1.730 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	1.795	0.178	0.207	0.014	2.196		$2.202 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	1.862	0.403	0.504	0.028	2.798		$3.811 \times 10^4$	
100. GeV	$1.001 \times 10^5$	1.882	0.522	0.664	0.035	3.105		$4.490 \times 10^4$	
140. GeV	$1.401 \times 10^5$	1.911	0.767	0.994	0.049	3.722		$5.665 \times 10^4$	
147. GeV	$1.472 \times 10^5$	1.916	0.811	1.054	0.051	3.833			<i>Muon critical energy</i>
200. GeV	$2.001 \times 10^5$	1.942	1.149	1.517	0.069	4.678		$7.101 \times 10^4$	
300. GeV	$3.001 \times 10^5$	1.975	1.801	2.390	0.104	6.271		$8.942 \times 10^4$	
400. GeV	$4.001 \times 10^5$	1.999	2.475	3.295	0.138	7.908		$1.036 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.056	5.254	7.006	0.279	14.597		$1.403 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.075	6.680	8.905	0.351	18.012		$1.526 \times 10^5$	
1.40 TeV	$1.400 \times 10^6$	2.103	9.537	12.690	0.497	24.829		$1.714 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.133	13.905	18.467	0.719	35.226		$1.916 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	2.168	21.192	28.064	1.099	52.526		$2.147 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	2.194	28.572	37.764	1.485	70.017		$2.312 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	2.256	58.310	76.748	3.085	140.401		$2.707 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	2.276	73.287	96.343	3.906	175.814		$2.834 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	2.307	103.161	135.440	5.592	246.503		$3.025 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	2.341	148.220	194.335	8.176	353.074		$3.228 \times 10^5$	
30.0 TeV	$3.000 \times 10^7$	2.380	223.232	292.313	12.639	530.565		$3.457 \times 10^5$	
40.0 TeV	$4.000 \times 10^7$	2.407	298.495	390.517	17.207	708.628		$3.620 \times 10^5$	
80.0 TeV	$8.000 \times 10^7$	2.476	599.943	783.611	36.275	1422.307		$4.010 \times 10^5$	
100. TeV	$1.000 \times 10^8$	2.499	750.896	980.338	46.121	1779.857		$4.136 \times 10^5$	