

## Muons in plutonium dioxide (PuO<sub>2</sub>)

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.40583	11.460	746.5	0.20594	2.6522	-0.2311	3.5554	5.9719	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	$4.704 \times 10^1$	4.092				4.092		$1.394 \times 10^0$	
14.0 MeV	$5.616 \times 10^1$	3.242				3.243		$2.503 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	2.572				2.572		$4.603 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	2.028				2.028		$9.038 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	1.748				1.748		$1.438 \times 10^1$	
80.0 MeV	$1.527 \times 10^2$	1.338				1.338		$4.132 \times 10^1$	
100. MeV	$1.764 \times 10^2$	1.265				1.265		$5.673 \times 10^1$	
140. MeV	$2.218 \times 10^2$	1.194				1.195		$8.942 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.162				1.162		$1.405 \times 10^2$	
237. MeV	$3.260 \times 10^2$	1.158	0.000			1.158			<i>Minimum ionization</i>
300. MeV	$3.917 \times 10^2$	1.163	0.000		0.000	1.163		$2.267 \times 10^2$	
400. MeV	$4.945 \times 10^2$	1.182	0.000		0.000	1.183		$3.120 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.265	0.001		0.000	1.266		$6.385 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	1.298	0.001		0.000	1.300		$7.943 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	1.350	0.002		0.001	1.353		$1.096 \times 10^3$	
2.00 GeV	$2.103 \times 10^3$	1.407	0.004	0.001	0.001	1.413		$1.529 \times 10^3$	
3.00 GeV	$3.104 \times 10^3$	1.472	0.007	0.003	0.001	1.483		$2.219 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	1.517	0.010	0.006	0.002	1.534		$2.881 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	1.619	0.025	0.021	0.003	1.668		$5.371 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	1.650	0.033	0.029	0.004	1.717		$6.553 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	1.694	0.050	0.048	0.005	1.799		$8.827 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	1.738	0.078	0.080	0.007	1.905		$1.207 \times 10^4$	
30.0 GeV	$3.011 \times 10^4$	1.785	0.128	0.142	0.011	2.067		$1.710 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	1.816	0.181	0.210	0.014	2.222		$2.177 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	1.885	0.410	0.510	0.028	2.834		$3.766 \times 10^4$	
100. GeV	$1.001 \times 10^5$	1.906	0.531	0.672	0.035	3.145		$4.436 \times 10^4$	
140. GeV	$1.401 \times 10^5$	1.936	0.779	1.006	0.049	3.771		$5.597 \times 10^4$	
147. GeV	$1.470 \times 10^5$	1.940	0.823	1.066	0.051	3.881			<i>Muon critical energy</i>
200. GeV	$2.001 \times 10^5$	1.966	1.168	1.536	0.069	4.740		$7.013 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.000	1.830	2.420	0.103	6.356		$8.830 \times 10^4$	
400. GeV	$4.001 \times 10^5$	2.024	2.515	3.337	0.138	8.016		$1.023 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.082	5.339	7.096	0.279	14.798		$1.385 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.101	6.789	9.019	0.350	18.261		$1.506 \times 10^5$	
1.40 TeV	$1.400 \times 10^6$	2.130	9.692	12.853	0.496	25.173		$1.692 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.161	14.130	18.705	0.718	35.715		$1.891 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	2.197	21.534	28.426	1.097	53.256		$2.119 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	2.222	29.034	38.251	1.482	70.990		$2.281 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	2.285	59.249	77.739	3.079	142.353		$2.671 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	2.306	74.467	97.587	3.898	178.259		$2.797 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	2.337	104.819	137.189	5.580	249.928		$2.985 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	2.371	150.599	196.844	8.158	357.974		$3.185 \times 10^5$	
30.0 TeV	$3.000 \times 10^7$	2.411	226.884	296.089	12.610	537.995		$3.411 \times 10^5$	
40.0 TeV	$4.000 \times 10^7$	2.439	303.444	395.563	17.167	718.616		$3.571 \times 10^5$	
80.0 TeV	$8.000 \times 10^7$	2.509	609.685	793.736	36.193	1442.125		$3.956 \times 10^5$	
100. TeV	$1.000 \times 10^8$	2.532	762.907	993.003	46.019	1804.463		$4.080 \times 10^5$	