

## Muons in yttrium silicon oxide ( $\text{Y}_2\text{SiO}_5$ )

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.46171	4.540	258.1	0.16963	3.0000	0.2000	3.0000	4.6447	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	$4.704 \times 10^1$	5.566				5.566		$1.007 \times 10^0$	
14.0 MeV	$5.616 \times 10^1$	4.372				4.372		$1.826 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	3.438				3.438		$3.391 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	2.686				2.686		$6.727 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	2.304				2.304		$1.077 \times 10^1$	
80.0 MeV	$1.527 \times 10^2$	1.748				1.748		$3.132 \times 10^1$	
100. MeV	$1.764 \times 10^2$	1.648				1.649		$4.313 \times 10^1$	
140. MeV	$2.218 \times 10^2$	1.547				1.548		$6.829 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.494				1.495		$1.079 \times 10^2$	
270. MeV	$3.602 \times 10^2$	1.482			0.000	1.483			<i>Minimum ionization</i>
300. MeV	$3.917 \times 10^2$	1.484			0.000	1.484		$1.752 \times 10^2$	
400. MeV	$4.945 \times 10^2$	1.498	0.000		0.000	1.499		$2.423 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.579	0.000		0.000	1.580		$5.021 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	1.613	0.001		0.000	1.614		$6.273 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	1.667	0.001	0.000	0.001	1.669		$8.708 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	1.725	0.002	0.001	0.001	1.728		$1.224 \times 10^3$	
3.00 GeV	$3.104 \times 10^3$	1.791	0.003	0.002	0.001	1.797		$1.790 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	1.836	0.004	0.003	0.002	1.846		$2.339 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	1.939	0.011	0.010	0.003	1.963		$4.433 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	1.969	0.014	0.015	0.004	2.003		$5.441 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	2.014	0.021	0.024	0.006	2.065		$7.407 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	2.058	0.033	0.038	0.008	2.138		$1.026 \times 10^4$	
30.0 GeV	$3.011 \times 10^4$	2.104	0.054	0.067	0.012	2.238		$1.483 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.136	0.077	0.098	0.016	2.327		$1.921 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.206	0.173	0.235	0.031	2.646		$3.530 \times 10^4$	
100. GeV	$1.001 \times 10^5$	2.228	0.224	0.309	0.039	2.800		$4.265 \times 10^4$	
140. GeV	$1.401 \times 10^5$	2.260	0.329	0.461	0.054	3.105		$5.621 \times 10^4$	
200. GeV	$2.001 \times 10^5$	2.294	0.494	0.702	0.076	3.567		$7.423 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.332	0.775	1.107	0.115	4.330		$9.964 \times 10^4$	
347. GeV	$3.470 \times 10^5$	2.346	0.911	1.303	0.133	4.693			<i>Muon critical energy</i>
400. GeV	$4.001 \times 10^5$	2.360	1.067	1.527	0.153	5.107		$1.209 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.426	2.271	3.253	0.309	8.259		$1.819 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.447	2.890	4.137	0.388	9.864		$2.040 \times 10^5$	
1.40 TeV	$1.400 \times 10^6$	2.480	4.134	5.901	0.550	13.066		$2.392 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.515	6.037	8.595	0.796	17.944		$2.782 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	2.555	9.217	13.073	1.219	26.065		$3.242 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	2.585	12.442	17.601	1.648	34.277		$3.576 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	2.656	25.458	35.812	3.430	67.357		$4.393 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	2.680	32.021	44.969	4.347	84.018		$4.658 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	2.716	45.114	63.237	6.231	117.298		$5.059 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	2.754	64.880	90.762	9.121	167.518		$5.485 \times 10^5$	
30.0 TeV	$3.000 \times 10^7$	2.799	97.784	136.561	14.123	251.268		$5.969 \times 10^5$	
40.0 TeV	$4.000 \times 10^7$	2.831	130.818	182.477	19.248	335.375		$6.313 \times 10^5$	
80.0 TeV	$8.000 \times 10^7$	2.911	263.188	366.280	40.689	673.069		$7.138 \times 10^5$	
100. TeV	$1.000 \times 10^8$	2.937	329.502	458.272	51.778	842.491		$7.403 \times 10^5$	