

## Muons in gadolinium oxysulfide ( $\text{Gd}_2\text{O}_2\text{S}$ )

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.42266	7.440	493.3	0.22161	2.6300	-0.1774	3.4045	5.5347	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	$4.704 \times 10^1$	4.587				4.587			$1.234 \times 10^0$
14.0 MeV	$5.616 \times 10^1$	3.621				3.621			$2.225 \times 10^0$
20.0 MeV	$6.802 \times 10^1$	2.860				2.860			$4.110 \times 10^0$
30.0 MeV	$8.509 \times 10^1$	2.244				2.244			$8.109 \times 10^0$
40.0 MeV	$1.003 \times 10^2$	1.929				1.929			$1.294 \times 10^1$
80.0 MeV	$1.527 \times 10^2$	1.466				1.466			$3.745 \times 10^1$
100. MeV	$1.764 \times 10^2$	1.384				1.384			$5.153 \times 10^1$
140. MeV	$2.218 \times 10^2$	1.303				1.303			$8.145 \times 10^1$
200. MeV	$2.868 \times 10^2$	1.263				1.263			$1.284 \times 10^2$
253. MeV	$3.431 \times 10^2$	1.257	0.000			1.257			<i>Minimum ionization</i>
300. MeV	$3.917 \times 10^2$	1.260	0.000		0.000	1.261			$2.078 \times 10^2$
400. MeV	$4.945 \times 10^2$	1.278	0.000		0.000	1.278			$2.866 \times 10^2$
800. MeV	$8.995 \times 10^2$	1.360	0.001		0.000	1.361			$5.895 \times 10^2$
1.00 GeV	$1.101 \times 10^3$	1.393	0.001		0.000	1.395			$7.346 \times 10^2$
1.40 GeV	$1.502 \times 10^3$	1.447	0.002	0.000	0.001	1.449			$1.016 \times 10^3$
2.00 GeV	$2.103 \times 10^3$	1.505	0.003	0.001	0.001	1.510			$1.421 \times 10^3$
3.00 GeV	$3.104 \times 10^3$	1.571	0.005	0.003	0.001	1.580			$2.067 \times 10^3$
4.00 GeV	$4.104 \times 10^3$	1.616	0.007	0.005	0.002	1.631			$2.690 \times 10^3$
8.00 GeV	$8.105 \times 10^3$	1.720	0.018	0.017	0.003	1.759			$5.042 \times 10^3$
10.0 GeV	$1.011 \times 10^4$	1.752	0.024	0.024	0.004	1.804			$6.164 \times 10^3$
14.0 GeV	$1.411 \times 10^4$	1.797	0.037	0.039	0.005	1.878			$8.335 \times 10^3$
20.0 GeV	$2.011 \times 10^4$	1.842	0.057	0.064	0.008	1.970			$1.145 \times 10^4$
30.0 GeV	$3.011 \times 10^4$	1.889	0.093	0.111	0.011	2.105			$1.636 \times 10^4$
40.0 GeV	$4.011 \times 10^4$	1.921	0.131	0.163	0.015	2.231			$2.097 \times 10^4$
80.0 GeV	$8.011 \times 10^4$	1.991	0.297	0.392	0.029	2.710			$3.720 \times 10^4$
100. GeV	$1.001 \times 10^5$	2.012	0.385	0.516	0.036	2.950			$4.427 \times 10^4$
140. GeV	$1.401 \times 10^5$	2.042	0.565	0.771	0.050	3.429			$5.684 \times 10^4$
198. GeV	$1.985 \times 10^5$	2.073	0.839	1.163	0.071	4.147			<i>Muon critical energy</i>
200. GeV	$2.001 \times 10^5$	2.074	0.847	1.174	0.072	4.167			$7.270 \times 10^4$
300. GeV	$3.001 \times 10^5$	2.109	1.328	1.848	0.108	5.394			$9.374 \times 10^4$
400. GeV	$4.001 \times 10^5$	2.134	1.826	2.546	0.143	6.650			$1.104 \times 10^5$
800. GeV	$8.001 \times 10^5$	2.194	3.880	5.410	0.290	11.776			$1.550 \times 10^5$
1.00 TeV	$1.000 \times 10^6$	2.214	4.935	6.876	0.364	14.391			$1.704 \times 10^5$
1.40 TeV	$1.400 \times 10^6$	2.244	7.050	9.799	0.516	19.610			$1.941 \times 10^5$
2.00 TeV	$2.000 \times 10^6$	2.276	10.285	14.259	0.747	27.568			$2.198 \times 10^5$
3.00 TeV	$3.000 \times 10^6$	2.313	15.685	21.671	1.142	40.812			$2.494 \times 10^5$
4.00 TeV	$4.000 \times 10^6$	2.340	21.157	29.163	1.543	54.203			$2.706 \times 10^5$
8.00 TeV	$8.000 \times 10^6$	2.405	43.215	59.276	3.206	108.103			$3.219 \times 10^5$
10.0 TeV	$1.000 \times 10^7$	2.427	54.330	74.412	4.060	135.231			$3.384 \times 10^5$
14.0 TeV	$1.400 \times 10^7$	2.460	76.500	104.614	5.815	189.390			$3.633 \times 10^5$
20.0 TeV	$2.000 \times 10^7$	2.495	109.951	150.110	8.504	271.061			$3.896 \times 10^5$
30.0 TeV	$3.000 \times 10^7$	2.536	165.634	225.807	13.152	407.131			$4.195 \times 10^5$
40.0 TeV	$4.000 \times 10^7$	2.566	221.515	301.684	17.910	543.676			$4.407 \times 10^5$
80.0 TeV	$8.000 \times 10^7$	2.639	445.373	605.398	37.781	1091.192			$4.916 \times 10^5$
100. TeV	$1.000 \times 10^8$	2.663	557.489	757.394	48.044	1365.591			$5.079 \times 10^5$