

## Muons in zinc (Zn)

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
30 (Zn)	65.38(2)	7.133	330.0	0.14714	2.8652	0.0049	3.3668	4.6906	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	$4.704 \times 10^1$	5.291				5.291	$1.068 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	4.168				4.168	$1.928 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	3.284				3.284	$3.567 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.569				2.569	$7.057 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	2.204				2.204	$1.129 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.665				1.665	$3.281 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.568				1.568	$4.522 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.472				1.472	$7.167 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.422				1.422	$1.133 \times 10^2$		
267. MeV	$3.577 \times 10^2$	1.411			0.000	1.411	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.413	0.000		0.000	1.413	$1.840 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.428	0.000		0.000	1.429	$2.544 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.510	0.001		0.000	1.511	$5.265 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.544	0.001		0.000	1.546	$6.573 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.599	0.001	0.000	0.001	1.601	$9.113 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	1.658	0.002	0.001	0.001	1.662	$1.279 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.726	0.003	0.002	0.001	1.733	$1.867 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.773	0.005	0.004	0.002	1.784	$2.435 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.880	0.012	0.012	0.003	1.907	$4.596 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.912	0.016	0.016	0.004	1.949	$5.633 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.959	0.024	0.026	0.006	2.015	$7.650 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.005	0.037	0.043	0.008	2.093	$1.057 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	2.054	0.060	0.075	0.012	2.201	$1.522 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.087	0.085	0.109	0.016	2.297	$1.967 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.160	0.192	0.262	0.031	2.645	$3.587 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.182	0.248	0.344	0.038	2.813	$4.320 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.215	0.365	0.513	0.053	3.147	$5.664 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.249	0.547	0.782	0.075	3.654	$7.432 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.287	0.859	1.232	0.113	4.491	$9.897 \times 10^4$		
311. GeV	$3.106 \times 10^5$	2.290	0.892	1.281	0.117	4.581	<i>Muon critical energy</i>		
400. GeV	$4.001 \times 10^5$	2.314	1.181	1.699	0.150	5.345	$1.194 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.379	2.515	3.617	0.304	8.815	$1.771 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.401	3.201	4.599	0.382	10.582	$1.977 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.433	4.577	6.559	0.541	14.110	$2.304 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.468	6.683	9.552	0.782	19.486	$2.664 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.508	10.204	14.526	1.196	28.435	$3.087 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.537	13.773	19.556	1.617	37.485	$3.392 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.608	28.179	39.784	3.364	73.936	$4.138 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.632	35.443	49.955	4.262	92.293	$4.379 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.668	49.934	70.247	6.106	128.955	$4.744 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.706	71.808	100.822	8.934	184.271	$5.132 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.751	108.223	151.694	13.826	276.494	$5.572 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.783	144.781	202.694	18.836	369.095	$5.884 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.862	291.272	406.851	39.777	740.762	$6.633 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.888	364.660	509.030	50.600	927.179	$6.874 \times 10^5$		