

**Table 031: Muons in Gallium**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
31 (Ga)	69.723 (1)	5.904	334.0	0.09440	3.1314	0.2267	3.5434	4.9353	0.14
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	5.119				5.119	$1.104 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	4.034				4.034	$1.993 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	3.179				3.179	$3.687 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.488				2.488	$7.290 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	2.136				2.136	$1.166 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.620				1.620	$3.382 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.528				1.528	$4.656 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.436				1.436	$7.369 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.388				1.389	$1.163 \times 10^2$		
263. MeV	$3.527 \times 10^2$	1.379			0.000	1.379	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.381			0.000	1.381	$1.887 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.396	0.000		0.000	1.397	$2.608 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.477	0.001		0.000	1.478	$5.390 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.510	0.001		0.000	1.512	$6.727 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.564	0.001	0.000	0.001	1.566	$9.325 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	1.622	0.002	0.001	0.001	1.625	$1.308 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.687	0.003	0.002	0.001	1.694	$1.910 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.733	0.005	0.004	0.002	1.743	$2.491 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.836	0.012	0.012	0.003	1.863	$4.702 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.867	0.015	0.016	0.004	1.904	$5.764 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.912	0.024	0.026	0.006	1.968	$7.829 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.957	0.037	0.043	0.008	2.045	$1.082 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	2.005	0.060	0.074	0.012	2.151	$1.558 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.036	0.085	0.109	0.016	2.246	$2.013 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.107	0.191	0.261	0.030	2.591	$3.668 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.129	0.248	0.343	0.038	2.758	$4.416 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.161	0.364	0.512	0.053	3.090	$5.785 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.194	0.545	0.780	0.075	3.595	$7.584 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.231	0.856	1.230	0.112	4.429	$1.009 \times 10^5$		
304. GeV	$3.043 \times 10^5$	2.232	0.870	1.249	0.114	4.465	<i>Muon critical energy</i>		
400. GeV	$4.001 \times 10^5$	2.257	1.177	1.695	0.149	5.280	$1.215 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.321	2.507	3.607	0.302	8.737	$1.798 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.341	3.190	4.586	0.380	10.498	$2.007 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.373	4.562	6.540	0.538	14.014	$2.336 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.407	6.661	9.525	0.778	19.372	$2.698 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.446	10.169	14.484	1.190	28.291	$3.123 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.474	13.727	19.499	1.609	37.310	$3.430 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.543	28.082	39.666	3.347	73.638	$4.179 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.565	35.321	49.806	4.240	91.933	$4.421 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.600	49.760	70.036	6.074	128.470	$4.788 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.637	71.556	100.516	8.886	183.596	$5.177 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.680	107.841	151.232	13.750	275.504	$5.618 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.711	144.268	202.076	18.731	367.787	$5.931 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.788	290.229	405.605	39.550	738.173	$6.684 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.813	363.350	507.470	50.310	923.944	$6.925 \times 10^5$		