

**Table 273: Muons in Urea  $\text{CO}(\text{NH}_2)_2$**

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.53284	1.323	72.8	0.11609	3.3461	0.1603	2.6525	3.2032	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]	
10.0 MeV	$4.704 \times 10^1$	7.675				7.675	$7.199 \times 10^{-1}$	
14.0 MeV	$5.616 \times 10^1$	5.986				5.986	$1.316 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	4.674				4.674	$2.464 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	3.626				3.626	$4.927 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	3.096				3.096	$7.931 \times 10^0$	
80.0 MeV	$1.527 \times 10^2$	2.324				2.324	$2.332 \times 10^1$	
100. MeV	$1.764 \times 10^2$	2.176				2.176	$3.224 \times 10^1$	
140. MeV	$2.218 \times 10^2$	2.024				2.025	$5.139 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.937				1.937	$8.180 \times 10^1$	
300. MeV	$3.917 \times 10^2$	1.903			0.000	1.903	$1.340 \times 10^2$	
318. MeV	$4.105 \times 10^2$	1.902			0.000	1.902	<i>Minimum ionization</i>	
400. MeV	$4.945 \times 10^2$	1.908			0.000	1.908	$1.866 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.978	0.000		0.000	1.979	$3.925 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	2.011	0.000		0.000	2.012	$4.927 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	2.064	0.000		0.001	2.065	$6.888 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	2.122	0.001	0.000	0.001	2.124	$9.751 \times 10^2$	
3.00 GeV	$3.104 \times 10^3$	2.189	0.001	0.001	0.001	2.192	$1.438 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	2.235	0.001	0.001	0.002	2.240	$1.889 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	2.342	0.003	0.003	0.004	2.352	$3.626 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	2.374	0.004	0.004	0.005	2.388	$4.470 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	2.421	0.007	0.007	0.007	2.442	$6.125 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	2.469	0.011	0.012	0.009	2.501	$8.552 \times 10^3$	
30.0 GeV	$3.011 \times 10^4$	2.520	0.017	0.021	0.013	2.572	$1.249 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.555	0.025	0.031	0.018	2.628	$1.634 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.635	0.056	0.075	0.034	2.801	$3.105 \times 10^4$	
100. GeV	$1.001 \times 10^5$	2.660	0.073	0.099	0.042	2.875	$3.810 \times 10^4$	
140. GeV	$1.401 \times 10^5$	2.698	0.107	0.149	0.059	3.013	$5.169 \times 10^4$	
200. GeV	$2.001 \times 10^5$	2.737	0.161	0.228	0.084	3.210	$7.098 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.781	0.255	0.363	0.125	3.524	$1.007 \times 10^5$	
400. GeV	$4.001 \times 10^5$	2.812	0.351	0.503	0.167	3.834	$1.279 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.889	0.755	1.086	0.337	5.067	$2.184 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.913	0.963	1.388	0.424	5.689	$2.556 \times 10^5$	
1.05 TeV	$1.049 \times 10^6$	2.919	1.013	1.460	0.445	5.838	<i>Muon critical energy</i>	
1.40 TeV	$1.400 \times 10^6$	2.951	1.383	1.988	0.601	6.924	$3.192 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.992	2.028	2.909	0.871	8.799	$3.959 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	3.038	3.109	4.441	1.334	11.923	$4.932 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	3.072	4.210	5.994	1.805	15.082	$5.676 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	3.155	8.665	12.253	3.768	27.841	$7.599 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	3.182	10.919	15.405	4.779	34.285	$8.245 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	3.223	15.416	21.685	6.863	47.188	$9.236 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	3.268	22.219	31.159	10.064	66.710	$1.030 \times 10^6$	
30.0 TeV	$3.000 \times 10^7$	3.320	33.547	46.920	15.621	99.408	$1.152 \times 10^6$	
40.0 TeV	$4.000 \times 10^7$	3.357	44.936	62.733	21.325	132.351	$1.239 \times 10^6$	
80.0 TeV	$8.000 \times 10^7$	3.449	90.611	126.039	45.264	265.363	$1.448 \times 10^6$	
100. TeV	$1.000 \times 10^8$	3.479	113.512	157.730	57.673	332.395	$1.515 \times 10^6$	