ALUMINUM

ELEMENT	ATOMIC NUMBER	ATOMS/ MOLECULE	ATOMIC WEIGHT	ADJUSTED IONIZATION POTENTIAL(EV)	ERROR IN ADJUSTED IONIZATION POTENTIAL(PCT)
AL	13	1	26.981	160.1	1.30

PROTON ENERGY MEV	ENERGY LOSS MEV/ GM/CM2	ENERGY LOSS MEV/ CM	ENERGY LOSS PCT ERROR	PROTON RANGE MG/CM2	PROTON RANGE MIC- RONS	PROTON RANGE PCT ERROR	PATHLENGTH MG/CM2	PATHLENGTH PCT ERROR	FLIGHT TIME PICO- SEC	FLIGHT TIME PCT ERROR	PATHLENGTH STRAGGLING MG/CM2	PATHLENGTH STRAGGLING PCT ERROR	PERCENT STRAGG- LING	PERCENT MULTIPLE SCATTER	NONELASTIC NUCLEAR INTERACTION PROBABILITY PCT	NONELASTIC NUCLEAR INTERACTION PROBABILITY ERROR
.00100	77.841	210.99	25.	.00517	.01917	31.	.02278	35.	.48715	40.	.00154	44.	6.769	77.29	0.0	0.0
.00125	86.938	234.65	23.	.00627	.02325	31.	.02582	33.	.51143	39.	.00171	42.	6.620	75.69	0.0	0.0
.00150	95.163	256.85	22.	.00737	.02729	30.	.02856	32.	.53129	38.	.00185	41.	6.485	74.21	0.0	0.0
.00175	102.73	277.26	21.	.00844	.03129	30.	.03109	32.	.54809	38.	.00198	40.	6.365	72.84	0.0	0.0
.00200	109.77	296.26	20.	.00951	.03524	29.	.03344	31.	.56265	38.	.00209	39.	6.257	71.56	0.0	0.0
.00225	116.38	314.11	19.	.01056	.03913	28.	.03565	30.	.57549	37.	.00220	38.	6.160	70.37	0.0	0.0
.00250	122.63	330.99	18.	.01160	.04299	28.	.03775	29.	.58699	37.	.00229	38.	6.072	69.26	0.0	0.0
.00275	128.58	347.04	17.	.01263	.04679	28.	.03974	29.	.59739	36.	.00238	37.	5.993	68.22	0.0	0.0
.00300	134.26	362.38	17.	.01364	.05055	27.	.04164	28.	.60690	36.	.00247	37.	5.921	67.23	0.0	0.0
.00350	144.96	391.25	16.	.01564	.05796	26.	.04522	27.	.62373	36.	.00262	36.	5.795	65.40	0.0	0.0
.00400	154.92	418.12	15.	.01761	.06526	26.	.04855	26.	.63832	35.	.00276	35.	5.687	63.73	0.0	0.0
.00450	164.27	443.36	14.	.01955	.07242	25.	.05169	26.	.65120	35.	.00289	35.	5.595	62.18	0.0	0.0
.00500	173.11	467.23	13.	.02145	.07946	24.	.05465	25.	.66272	34.	.00301	34.	5.514	60.76	0.0	0.0
.00550	182.66	493.00	12.	.02331	.08635	24.	.05746	24.	.67311	34.	.00313	34.	5.442	59.44	0.0	0.0
.00600	191.80	517.68	11.	.02512	.09308	23.	.06013	24.	.68254	34.	.00323	33.	5.378	58.22	0.0	0.0
.00650	200.55	541.38	10.	.02690	.09966	22.	.06268	23.	.69117	33.	.00333	33.	5.319	57.09	0.0	0.0
.00700	209.03	564.27	9.7	.02864	.10610	22.	.06512	23.	.69913	33.	.00343	32.	5.265	56.03	0.0	0.0
.00750	217.17	586.14	8.5	.03034	.11240	21.	.06747	22.	.70650	33.	.00352	32.	5.216	55.03	0.0	0.0
.00800	225.02	607.34	7.8	.03201	.11858	21.	.06973	22.	.71338	33.	.00361	32.	5.170	54.10	0.0	0.0
.00850	232.61	627.81	7.2	.03364	.12465	20.	.07191	21.	.71982	32.	.00369	31.	5.129	53.22	0.0	0.0
.00900	239.95	647.61	6.6	.03525	.13060	20.	.07403	21.	.72588	32.	.00377	31.	5.090	52.39	0.0	0.0
.00950	247.04	666.77	6.1	.03683	.13645	19.	.07608	21.	.73160	32.	.00384	31.	5.053	51.60	0.0	0.0
.01000	253.92	685.32	5.6	.03838	.14221	19.	.07808	20.	.73701	32.	.00392	30.	5.019	50.84	0.0	0.0
.01250	285.25	769.88	3.6	.04580	.16971	17.	.08735	19.	.76047	31.	.00426	29.	4.877	47.56	0.0	0.0
.01500	312.17	842.54	2.3	.05276	.19547	16.	.09572	17.	.77960	30.	.00456	28.	4.768	44.88	0.0	0.0
.01750	335.31	905.81	1.5	.05935	.21989	14.	.10344	16.	.79583	30.	.00484	27.	4.679	42.62	0.0	0.0
.02000	355.14	958.52	1.0	.06565	.24325	13.	.11067	15.	.80999	29.	.00510	27.	4.605	40.68	0.0	0.0
.02250	370.64	1000.4	1.0	.07175	.26583	12.	.11756	14.	.82265	29.	.00534	26.	4.543	38.97	0.0	0.0
.02500	386.14	1042.2	1.0	.07767	.28777	12.	.12417	14.	.83413	28.	.00557	25.	4.489	37.45	0.0	0.0
.02750	398.40	1075.3	1.0	.08344	.30914	11.	.13054	13.	.84467	28.	.00580	25.	4.441	36.08	0.0	0.0
.03000	408.81	1103.4	.99	.08909	.33010	11.	.13674	12.	.85445	28.	.00601	24.	4.397	34.84	0.0	0.0
.03500	424.98	1147.0	1.0	.10014	.37104	9.7	.14872	11.	.87226	27.	.00643	24.	4.323	32.66	0.0	0.0
.04000	436.19	1177.2	1.0	.11097	.41115	8.9	.16034	11.	.88833	27.	.00683	23.	4.261	30.79	0.0	0.0
.04500	443.62	1197.3	1.0	.12165	.45072	8.4	.17170	10.	.90310	26.	.00722	22.	4.208	29.15	0.0	0.0
.05000	448.22	1209.7	1.0	.13225	.49001	7.9	.18292	9.5	.91687	26.	.00761	22.	4.161	27.70	0.0	0.0
.05500	450.65	1216.3	1.0	.14283	.52919	7.4	.19404	9.0	.92988	26.	.00799	21.	4.119	26.39	0.0	0.0
.06000	451.45	1218.5	1.0	.15341	.56840	7.0	.20513	8.6	.94225	25.	.00837	21.	4.080	25.21	0.0	0.0
.06500	450.99	1217.2	1.0	.16403	.60773	6.7	.21621	8.2	.95412	25.	.00875	20.	4.045	24.13	0.0	0.0
.07000	449.55	1213.4	1.0	.17469	.64726	6.4	.22731	7.9	.96556	25.	.00912	20.	4.013	23.15	0.0	0.0
.07500	447.46	1207.7	1.0	.18543	.68704	6.1	.23846	7.5	.97665	24.	.00950	20.	3.983	22.24	0.0	0.0
.08000	444.79	1200.5	1.0	.19625	.72713	5.9	.24967	7.2	.98743	24.	.00988	19.	3.956	21.39	0.0	0.0
.08500	441.71	1192.2	1.0	.20716	.76755	5.7	.26095	7.0	.99794	24.	.01025	19.	3.929	20.61	0.0	0.0
.09000	438.34	1183.1	1.0	.21817	.80834	5.5	.27231	6.7	1.0082	24.	.01063	19.	3.905	19.88	0.0	0.0
.09500	434.75	1173.4	1.0	.22929	.84951	5.3	.28376	6.5	1.0183	23.	.01101	18.	3.881	19.20	0.0	0.0
.10000	431.00	1163.3	1.0	.24051	.89109	5.1	.29532	6.3	1.0282	23.	.01140	18.	3.859	18.56	0.0	0.0
.12500	411.46	1110.5	1.0	.29836	1.1055	4.4	.35668	5.4	1.0756	22.	.01334	17.	3.761	15.88	0.0	0.0
.15000	392.48	1059.3	1.0	.35923	1.3310	3.9	.41688	4.7	1.1206	21.	.01533	16.	3.677	13.83	0.0	0.0
.17500	375.06	1012.3	1.0	.42315	1.5678	3.6	.48204	4.2	1.1639	21.	.01737	16.	3.603	12.22	0.0	0.0
.20000	359.36	969.92	1.0	.49008	1.8158	3.3	.55013	3.8	1.2060	20.	.01944	15.	3.535	10.92	0.0	0.0
.22500	345.27	931.89	1.0	.55994	2.0746	3.0	.62109	3.5	1.2472	19.	.02156	15.	3.471	9.847	0.0	0.0
.25000	332.60	897.69	.99	.63263	2.3440	2.8	.69486	3.2	1.2878	19.	.02371	14.	3.412	8.956	0.0	0.0
.27500	321.15	866.79	.99	.70808	2.6235	2.7	.77135	3.0	1.3277	18.	.02588	14.	3.356	8.203	0.0	0.0
.30000	310.75	838.72	.98	.78620	2.9129	2.5	.85049	2.8	1.3673	18.	.02809	14.	3.303	7.559	0.0	0.0
.35000	292.51	789.50	.98	.95014	3.5203	2.3	1.0164	2.5	1.4452	17.	.03257	13.	3.204	6.520	0.0	0.0
.40000	276.94	747.47	.98	1.1239	4.1640	2.1	1.1921	2.3	1.5220	16.	.03713	13.	3.115	5.721	0.0	0.0
.45000	263.33	710.86	.97	1.3071	4.8428	2.1	1.3772	2.1	1.5981	15.	.04179	13.	3.034	5.089	0.0	0.0
.50000	251.35	678.39	.97	1.4995	5.5558	1.9	1.5715	2.0	1.6736	15.	.04653	13.	2.961	4.579	0.0	0.0
.55000	240.53	649.18	.97	1.7010	6.3023	1.8	1.7748	1.9	1.7488	14.	.05137	12.	2.894	4.159	0.0	0.0
.60000	230.67	622.57	.97	1.9114	7.0819	1.8	1.9871	1.8	1.8237	14.	.05631	12.	2.834	3.808	0.0	0.0
.65000	221.59	598.07	.96	2.1307	7.8944	1.7	2.2082	1.7	1.8986	13.	.06137	12.	2.779	3.510	0.0	0.0
.70000	213.16	575.31	.96	2.3589	8.7399	1.6	2.4383	1.6	1.9736	13.	.06654	12.	2.729	3.255	0.0	0.0
.75000	204.40	551.67	.97	2.5967	9.6208	1.6	2.6779	1.6	2.0490	12.	.07188	11.	2.684	3.033	0.0	0.0
.80000	196.53	530.43	.97	2.8443	10.538	1.6	2.9274	1.5	2.1249	12.	.07741	11.	2.644	2.839	0.0	0.0
.85000	189.41	511.23	.97	3.1016	11.492	1.5	3.1866	1.5	2.2014	11.	.08312	11.	2.609	2.668	0.0	0.0
.90000	182.94	493.76	.97	3.3683	12.480	1.5	3.4553	1.4	2.2783	11.	.08900	11.	2.576	2.517	0.0	0.0
.95000	177.02	477.78	.97	3.6443	13.502	1.5	3.7332	1.4	2.3557	11.	.09503	11.	2.545	2.381	0.0	0.0
1.0000	171.58	463.10	.96	3.9293	14.558	1.4	4.0201	1.4	2.4336	10.	.10120	11.	2.517	2.261	0.0	0.0
1.2500	149.80	404.32	.99	5.4835	20.317	1.4	5.5846	1.3	2.8289	9.1	.13393	10.	2.398	1.810	0.0	0.0
1.5000	133.31	359.80	.95	7.2456	26.845	1.3	7.3574	1.2	3.2341	8.0	.16963	9.7	2.306	1.519	0.0	0.0
1.7500	120.57	325.41	.89	9.2091	34.120	1.2	9.3322	1.1	3.6494	7.2	.20821	9.3	2.231	1.320	0.0	0.0
2.0000	110.27	297.61	.84	11.368	42.119	1.2	11.503	1.1	4.0744	6.6	.24954	8.9	2.169	1.175	0.0	0.0
2.2500	101.77	274.67	.80	13.717	50.824	1.2	13.865	1.0	4.5089	6.0	.29356	8.6	2.117	1.065	0.0	0.0
2.5000	94.611	255.35	.77	16.254	60.222	1.1	16.415	1.0	4.9526	5.5	.34020	8.3	2.073	.9801	0.0	0.0
2.7500	88.488	238.83	.75	18.975	70.303	1.1	19.149	.96	5.4054	5.1	.38943	8.1	2.034	.9120	0.0	0.0
3.0000	83.223	224.62	.72	21.875	81.049	1.1	22.064	.93	5.8666	4.8	.44110	7.9	1.999	.8567	0.0	0.0
3.5000	74.536	201.17	.68	28.205	104.50	1.0	28.424	.88	6.8135	4.2	.55161	7.5	1.941	.7722	.0076	25.
4.0000	67.667	182.63	.64	35.222	130.50	.96	35.474	.84	7.7909	3.8	.67133	7.1	1.892	.7110	.0114	25.