

# Kinematics Tables..<sup>16</sup>O

1 <sup>16</sup>O target

<sup>16</sup> O(d, d) <sup>16</sup> O, 1st excited state			
Q-value 0.00, E = 10, Ex = 6.05			
deg	total energy	E - dE	dE
25.9	3.5965e+00	2.8138e+00	7.8275e-01
30.9	3.5302e+00	2.7354e+00	7.9477e-01
35.9	3.4548e+00	2.6458e+00	8.0899e-01
40.9	3.3715e+00	2.5461e+00	8.2546e-01
41.8	3.3558e+00	2.5271e+00	8.2867e-01
45.9	3.2815e+00	2.4373e+00	8.4423e-01
46.5	3.2704e+00	2.4237e+00	8.4664e-01
50.9	3.1861e+00	2.3208e+00	8.6533e-01
55.9	3.0865e+00	2.1977e+00	8.8881e-01
60.9	2.9841e+00	2.0694e+00	9.1473e-01
65.9	2.8800e+00	1.9369e+00	9.4313e-01
70.9	2.7754e+00	1.8014e+00	9.7405e-01
75.9	2.6715e+00	1.6640e+00	1.0075e+00
80.9	2.5692e+00	1.5256e+00	1.0436e+00
85.9	2.4693e+00	1.3871e+00	1.0823e+00
90.9	2.3727e+00	1.2492e+00	1.1235e+00

  

<sup>16</sup> O(d, d) <sup>16</sup> O			
Q-value 0.00, E = 10, Ex = 0.00			
deg	total energy	E - dE	dE
25.9	9.7500e+00	9.3931e+00	3.5696e-01
30.9	9.6485e+00	9.2886e+00	3.5989e-01
35.9	9.5322e+00	9.1689e+00	3.6333e-01
40.9	9.4026e+00	9.0354e+00	3.6724e-01
41.8	9.3780e+00	9.0100e+00	3.6799e-01
45.9	9.2612e+00	8.8896e+00	3.7162e-01
46.5	9.2435e+00	8.8714e+00	3.7217e-01
50.9	9.1096e+00	8.7332e+00	3.7645e-01
55.9	8.9496e+00	8.5679e+00	3.8170e-01
60.9	8.7827e+00	8.3953e+00	3.8736e-01
65.9	8.6108e+00	8.2174e+00	3.9338e-01
70.9	8.4354e+00	8.0357e+00	3.9976e-01
75.9	8.2584e+00	7.8520e+00	4.0643e-01
80.9	8.0812e+00	7.6679e+00	4.1337e-01
85.9	7.9054e+00	7.4849e+00	4.2052e-01
90.9	7.7323e+00	7.3045e+00	4.2785e-01

$^{16}\text{O}(\text{d}, \text{p})^{17}\text{O}$			
Q-value 1.92, E = 10, Ex = 0.00			
deg	total energy	E - dE	dE
25.9	1.1671e+01	1.1492e+01	1.7893e-01
30.9	1.1595e+01	1.1415e+01	1.7988e-01
35.9	1.1508e+01	1.1327e+01	1.8099e-01
40.9	1.1411e+01	1.1229e+01	1.8224e-01
41.8	1.1392e+01	1.1210e+01	1.8249e-01
45.9	1.1304e+01	1.1120e+01	1.8365e-01
46.5	1.1291e+01	1.1107e+01	1.8382e-01
50.9	1.1189e+01	1.1004e+01	1.8518e-01
55.9	1.1066e+01	1.0880e+01	1.8685e-01
60.9	1.0938e+01	1.0749e+01	1.8863e-01
65.9	1.0805e+01	1.0614e+01	1.9051e-01
70.9	1.0668e+01	1.0476e+01	1.9250e-01
75.9	1.0529e+01	1.0334e+01	1.9456e-01
80.9	1.0388e+01	1.0192e+01	1.9670e-01
85.9	1.0248e+01	1.0049e+01	1.9888e-01
90.9	1.0108e+01	9.9072e+00	2.0111e-01

$^{16}\text{O}(\text{d}, \text{p})^{17}\text{O}$ , 1st excited state			
Q-value 1.92, E = 10, Ex = 0.87			
deg	total energy	E - dE	dE
25.9	1.0790e+01	1.0600e+01	1.9072e-01
30.9	1.0718e+01	1.0526e+01	1.9178e-01
35.9	1.0634e+01	1.0441e+01	1.9300e-01
40.9	1.0540e+01	1.0345e+01	1.9440e-01
41.8	1.0522e+01	1.0327e+01	1.9467e-01
45.9	1.0437e+01	1.0241e+01	1.9595e-01
46.5	1.0424e+01	1.0228e+01	1.9615e-01
50.9	1.0326e+01	1.0128e+01	1.9766e-01
55.9	1.0208e+01	1.0009e+01	1.9951e-01
60.9	1.0085e+01	9.8833e+00	2.0149e-01
65.9	9.9567e+00	9.7531e+00	2.0359e-01
70.9	9.8252e+00	9.6194e+00	2.0579e-01
75.9	9.6915e+00	9.4834e+00	2.0809e-01
80.9	9.5567e+00	9.3462e+00	2.1047e-01
85.9	9.4218e+00	9.2089e+00	2.1291e-01
90.9	9.2881e+00	9.0727e+00	2.1538e-01

$^{16}\text{O}(\text{d}, \text{p})^{17}\text{O}$ , 2nd excited state			
Q-value 1.92, E = 10, Ex = 3.06			
deg	total energy	E - dE	dE
25.9	8.5615e+00	8.3315e+00	2.3005e-01
30.9	8.4959e+00	8.2645e+00	2.3149e-01
35.9	8.4207e+00	8.1875e+00	2.3316e-01
40.9	8.3365e+00	8.1014e+00	2.3506e-01
41.8	8.3205e+00	8.0850e+00	2.3542e-01
45.9	8.2443e+00	8.0071e+00	2.3718e-01
46.5	8.2328e+00	7.9953e+00	2.3745e-01
50.9	8.1451e+00	7.9056e+00	2.3951e-01
55.9	8.0399e+00	7.7979e+00	2.4203e-01
60.9	7.9298e+00	7.6850e+00	2.4475e-01
65.9	7.8157e+00	7.5681e+00	2.4762e-01
70.9	7.6988e+00	7.4482e+00	2.5065e-01
75.9	7.5801e+00	7.3263e+00	2.5381e-01
80.9	7.4607e+00	7.2036e+00	2.5709e-01
85.9	7.3415e+00	7.0810e+00	2.6045e-01
90.9	7.2234e+00	6.9596e+00	2.6387e-01

$^{16}\text{O}(\text{d}, \text{p})^{17}\text{O}$ , 3rd excited state			
Q-value 1.92, E = 10, Ex = 3.84			
deg	total energy	E - dE	dE
25.9	7.7622e+00	7.5132e+00	2.4900e-01
30.9	7.6995e+00	7.4489e+00	2.5064e-01
35.9	7.6276e+00	7.3750e+00	2.5254e-01
40.9	7.5472e+00	7.2924e+00	2.5471e-01
41.8	7.5318e+00	7.2767e+00	2.5513e-01
45.9	7.4592e+00	7.2020e+00	2.5713e-01
46.5	7.4481e+00	7.1907e+00	2.5744e-01
50.9	7.3645e+00	7.1047e+00	2.5979e-01
55.9	7.2642e+00	7.0016e+00	2.6268e-01
60.9	7.1593e+00	6.8935e+00	2.6578e-01
65.9	7.0507e+00	6.7816e+00	2.6907e-01
70.9	6.9395e+00	6.6669e+00	2.7254e-01
75.9	6.8267e+00	6.5505e+00	2.7617e-01
80.9	6.7132e+00	6.4333e+00	2.7992e-01
85.9	6.6001e+00	6.3163e+00	2.8378e-01
90.9	6.4882e+00	6.2005e+00	2.8772e-01

$^{16}\text{O}(d, \alpha)^{14}\text{N}$			
Q-value 3.11, E = 10, Ex = 0.00			
deg	total energy	E - dE	dE
25.9	1.2213e+01	1.0092e+01	2.1202e+00
30.9	1.2048e+01	9.9030e+00	2.1448e+00
35.9	1.1860e+01	9.6858e+00	2.1737e+00
40.9	1.1650e+01	9.4434e+00	2.2070e+00
41.8	1.1611e+01	9.3973e+00	2.2135e+00
45.9	1.1423e+01	9.1785e+00	2.2447e+00
46.5	1.1395e+01	9.1453e+00	2.2495e+00
50.9	1.1181e+01	8.8940e+00	2.2866e+00
55.9	1.0926e+01	8.5928e+00	2.3328e+00
60.9	1.0661e+01	8.2779e+00	2.3832e+00
65.9	1.0390e+01	7.9524e+00	2.4377e+00
70.9	1.0115e+01	7.6191e+00	2.4963e+00
75.9	9.8395e+00	7.2808e+00	2.5587e+00
80.9	9.5652e+00	6.9404e+00	2.6248e+00
85.9	9.2948e+00	6.6004e+00	2.6944e+00
90.9	9.0303e+00	6.2631e+00	2.7672e+00

$^{16}\text{O}(d, \alpha)^{14}\text{N}$ , 2nd excited state			
Q-value 3.11, E = 10, Ex = 3.95			
deg	total energy	E - dE	dE
25.9	8.6430e+00	5.7593e+00	2.8836e+00
30.9	8.5005e+00	5.5707e+00	2.9298e+00
35.9	8.3383e+00	5.3535e+00	2.9847e+00
40.9	8.1586e+00	5.1098e+00	3.0489e+00
41.8	8.1247e+00	5.0632e+00	3.0615e+00
45.9	7.9641e+00	4.8414e+00	3.1227e+00
46.5	7.9399e+00	4.8077e+00	3.1322e+00
50.9	7.7573e+00	4.5506e+00	3.2067e+00
55.9	7.5409e+00	4.2392e+00	3.3016e+00
60.9	7.3175e+00	3.9093e+00	3.4083e+00
65.9	7.0898e+00	3.5622e+00	3.5276e+00
70.9	6.8602e+00	3.1991e+00	3.6611e+00
75.9	6.6311e+00	2.8208e+00	3.8103e+00
80.9	6.4047e+00	2.4271e+00	3.9776e+00
85.9	6.1828e+00	2.0170e+00	4.1658e+00
90.9	5.9672e+00	1.5888e+00	4.3784e+00