

Table 18.14 from (1978AJ03): Mixed isospin ^{18}F states from $^{14}\text{N}(\alpha, \alpha_1)^a$

	E_α^b (MeV)	E_x in ^{18}F (MeV)	$\Gamma_{\text{c.m.}}$ (keV)	Strength $ S(E_x) $	Footnote
$J^\pi = 1^-$					
1	8.142	10.748	535	0.062	c
2	8.319	10.884	147	0.075	d
3	8.813	11.268	147	0.107	
4	9.019	11.429	184	0.154	
5	9.057	11.458	313	0.058	
6	9.470	11.779	142	0.067	d
7	10.468	12.555	45	0.093	d
8	10.646	12.693	43	0.049	
9	10.788	12.804	98	0.082	
10	11.467	13.331	43	0.097	e
11	11.726	13.533	19	0.101	
12	11.858	13.635	44	0.110	d
13	12.017	13.759	120	0.071	
14	12.358	14.024	49	0.087	d
15	12.720	14.305	75	0.110	
16	13.247	14.715	129	0.116	d
17	13.500	14.912	79	0.097	
18	13.702	15.069	99	0.042	
19	14.424	15.630	101	0.098	
20	15.099	16.154	150	0.098	d
21	16.383	17.152	179	0.051	
$J^\pi = 2^+$					
1	7.879	10.542	43	0.227	d
2	8.072	10.692	138	0.177	d
3	8.239	10.822	47	0.047	d
4	8.567	11.077	23	0.203	
5	8.608	11.109	40	0.179	d
6	8.880	11.320	86	0.311	d
7	9.216	11.582	756	0.190	c
8	9.262	11.617	95	0.207	

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9	9.653	11.921	75	0.130	d
$J^\pi = 2^+$ (continued)					
10	10.004	12.194	252	0.111	d
11	10.306	12.429	113	0.295	d,e
12	10.588	12.648	246	0.300	d
13	10.676	12.717	127	0.198	
14	10.868	12.866	174	0.236	
15	11.417	13.293	73	0.097	d
16	11.582	13.421	440	0.079	
17	12.246	13.937	46	0.057	
18	12.691	14.283	157	0.131	
19	13.082	14.587	51	0.024	
20	13.323	14.774	79	0.153	
21	13.704	15.070	264	0.038	
22	14.523	15.707	134	0.048	
23	15.121	16.171	195	0.110	
24	15.363	16.360	70	0.110	
25	16.438	17.195	524	0.057	d
$J^\pi = 3^-$					
1	7.755	10.446	49	0.381	d
2	7.949	10.597	48	0.032	
3	8.123	10.732	37	0.059	d
4	8.479	11.009	47	0.021	d
5	8.707	11.186	42	0.102	d,e
6	8.921	11.352	53	0.211	d
7	9.273	11.626	67	0.090	d
8	9.768	12.011	164	0.089	
9	10.097	12.267	69	0.102	
10	10.447	12.539	112	0.172	d
11	10.731	12.759	58	0.238	d
12	11.064	13.018	165	0.023	d
13	11.434	13.306	35	0.069	

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14	11.696	13.509	50	0.146	
15	11.808	13.597	69	0.142	
$J^\pi = 3^-$ (continued)					
16	11.996	13.743	144	0.067	d
17	12.514	14.145	164	0.087	
18	12.979	14.507	138	0.114	
19	13.217	14.692	47	0.073	
20	13.556	14.955	71	0.059	
21	13.987	15.290	100	0.093	
22	14.267	15.508	131	0.045	d
23	14.954	16.042	190	0.062	
24	15.230	16.256	44	0.107	d
25	16.006	16.859	75	0.082	
26	16.266	17.061	298	0.040	
27	16.667	17.373	147	0.060	
$J^\pi = 4^+$					
1	8.349	10.908	45	0.025	
2	8.781	11.244	73	0.215	
3	8.906	11.341	56	0.304	d,e
4	8.959	11.382	111	0.382	
5	9.198	11.568	225	0.075	
6	9.485	11.791	67	0.019	
7	9.750	11.997	28	0.061	
8	9.973	12.170	22	0.077	
9	10.011	12.200	52	0.081	
10	10.316	12.437	183	0.218	
11	10.407	12.508	94	0.496	e
12	10.477	12.562	62	0.248	d
13	10.653	12.699	343	0.083	
14	10.787	12.803	35	0.039	
15	11.163	13.095	25	0.163	d
16	11.224	13.143	64	0.143	

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17	11.564	13.407	110	0.155	
18	11.702	13.514	71	0.167	e
19	11.939	13.698	63	0.319	d
$J^\pi = 4^+$ (continued)					
20	12.125	13.843	228	0.226	d
21	12.247	13.938	61	0.056	
22	12.394	14.052	54	0.025	
23	12.703	14.292	107	0.145	
24	13.012	14.532	79	0.140	d
25	13.226	14.699	348	0.114	
26	14.162	15.426	127	0.175	
27	14.761	15.892	471	0.082	c
28	15.049	16.115	235	0.127	
29	15.313	16.321	55	0.100	
30	15.810	16.707	180	0.113	
31	16.494	17.238	232	0.048	
$J^\pi = 5^-$					
1	8.705	11.184	23	0.050	
2	10.615	12.669	80	0.171	e
3	10.689	12.727	37	0.306	d
4	11.275	13.182	149	0.109	d
5	11.481	13.342	273	0.239	
6	11.510	13.365	36	0.316	d,e
7	11.593	13.429	149	0.244	
8	12.047	13.782	293	0.186	
9	12.234	13.928	112	0.183	
10	12.345	14.014	29	0.021	
11	12.498	14.133	379	0.142	d
12	12.609	14.219	110	0.198	
13	12.801	14.368	149	0.136	
14	13.330	14.779	126	0.107	
15	13.628	15.011	147	0.130	d

Table 18.14 from (1978AJ03): Mixed isospin ^{18}F states from $^{14}\text{N}(\alpha, \alpha_1)^a$ (continued)

16	13.755	15.110	71	0.109	
17	13.935	15.250	114	0.043	
18	14.217	15.469	44	0.048	
19	14.440	15.642	92	0.054	d
$J^\pi = 5^-$ (continued)					
20	14.587	15.756	109	0.036	
21	14.948	16.037	151	0.034	
22	15.430	16.412	137	0.110	
23	15.667	16.596	224	0.116	
24	16.016	16.867	270	0.024	d
25	16.468	17.218	486	0.024	c
$J^\pi = 6^+$					
1	10.970	12.945	98	0.031	
2	11.459	13.325	62	0.066	
3	11.665	13.485	102	0.059	
4	11.882	13.654	98	0.169	e
5	12.344	14.013	37	0.037	
6	12.501	14.135	78	0.037	
7	13.138	14.630	104	0.050	
8	13.471	14.889	165	0.067	d
9	13.639	15.020	82	0.063	
10	14.422	15.628	49	0.049	
11	15.273	16.290	76	0.079	
12	15.444	16.422	183	0.177	
13	15.713	16.632	415	0.154	
14	15.898	16.775	207	0.255	
15	16.015	16.866	140	0.344	d
16	16.300	17.088	186	0.013	
17	16.576	17.302	285	0.061	
18	16.757	17.443	95	0.043	
$J^\pi = 7^-$					
1	15.705	16.625	118	0.034	

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2	15.965	16.827	73	0.142	
3	16.121	16.949	143	0.113	
4	16.760	17.445	109	0.051	

^a (1976CH24). See also Table 18.13 in (1972AJ02) for the earlier work and Table 18.13 here for resonances in $^{14}\text{N} + \alpha$ observed below $E_\alpha = 5$ MeV. See also (1970TO03).

^b The absolute values of the narrow levels are uncertain to $\pm 10 - 20$ keV. The level widths are uncertain to $\pm 10\%$ for strong states. See (1976CH24) for further comments.

^c There are large uncertainties in the level parameters of this broad state (1976CH24).

^d A state of the same J^π , approximate width and E_x occurs in $^{16}\text{O}(d, \alpha_1)^{14}\text{N}$: see Table 18.16 (1976CH24).

^e An ^{18}O state of the same J^π occurs at the corresponding E_x in ^{18}O . Therefore this state probably has a large $T = 1$ amplitude.