^{51}V(d,t) 1973So12,1971De10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

^{51}V g.s. target $J^{\pi}=7/2^{-}$.

1971De10: E(d)=16 MeV beams from the three-stage Van de Graaff accelerator at University of Pittsburgh. Measured $\sigma(\theta)$(c.m.)≈14°−45°) with four position-sensitive detectors (FWHM=9-10 keV). Deduced levels, L-transfers from DWBA analysis. Observed states up to 3.1 MeV. Measured energies were not quoted by the authors, only the weighted averaged values from the last column in their table I were marked in spectra Fig. 2.

1973So12: E(d)=19.5 MeV from the John H William Laboratory tandem Van de Graaff. Measured $\sigma(\theta)$ at 7.5°−50° with 2.5° steps with three position-sensitive detectors (FWHM=10 keV). Deduced levels, L-transfers from DWBA analysis. Observed states up to 3.3 MeV. Uncertainties are not quoted but expected to be <10 keV.

Cross sections listed are from 1971De10 and correspond to an angle where the value reaches a maximum.

^{50}V Levels

E(level)[‡]	L[@]	C^2S[†]	Comments
0	3	1.09	dσ/dΩ=500 μb/sr.
158?			E(level): from 1971De10, very weak.
228	3+1[&]	0.46+(0.02)	dσ/dΩ=190 μb/sr.
321	3+1[&]	0.60+(0.03)	dσ/dΩ=220 μb/sr.
357	3[&]	0.40	dσ/dΩ=200 μb/sr.
387	3[&]	0.33	dσ/dΩ=100 μb/sr. L,C^2S: from 1973So12, L=(3), C^2S=(0.24) from 1971De10.
838	3	0.64	dσ/dΩ=230 μb/sr. L: other: 1+3 from 1973So12.
911	3[&]	1.72	dσ/dΩ=580 μb/sr.
1301	3[&]	0.21	dσ/dΩ=55 μb/sr.
1330	3[&]	0.13	dσ/dΩ=35 μb/sr.
1402	1[&]	0.012	dσ/dΩ=19 μb/sr. L,C^2S: from 1973So12, L=(3)+(1), C^2S=(0.01)+(0.005) from 1971De10.
1498	3	0.02	dσ/dΩ=4 μb/sr.
1519	3	0.04	dσ/dΩ=11 μb/sr.
1680	3+(1)	0.01+(0.001)	dσ/dΩ=4 μb/sr.
1701	3+1	0.07+0.01	dσ/dΩ=45 μb/sr.
1724	3	0.04	dσ/dΩ=9 μb/sr.
1753	(3+1)	(0.01)+0.01	dσ/dΩ=27 μb/sr for 1757+1764.
1761	3+(1)	0.09+(0.004)	
1808[#]			
1884[#]			
1937	3	0.10	dσ/dΩ=20 μb/sr.
1957	3	0.27	dσ/dΩ=54 μb/sr.
2038			dσ/dΩ=6 μb/sr.
2112	3+1	0.11+0.03	dσ/dΩ=68 μb/sr.
2133	(3)	(0.04)	dσ/dΩ=18 μb/sr.
2162	(3,2)		dσ/dΩ=4 μb/sr.
2314	3	0.25	dσ/dΩ=50 μb/sr.
2344	(3)+1	0.03+0.01	dσ/dΩ=22 μb/sr.
2399	(3)+1	0.03+0.01	dσ/dΩ=20 μb/sr.
2422	0	0.34	dσ/dΩ=20 μb/sr.
2456	3	0.03	dσ/dΩ=6 μb/sr.
2481	3	0.05	dσ/dΩ=9 μb/sr.
2492	3+(0)	0.01	dσ/dΩ=2.5 μb/sr.
2512	0	0.30	dσ/dΩ=13 μb/sr.

Continued on next page (footnotes at end of table)

^{51}V(d,t) 1973So12,1971De10 (continued)

^{50}V Levels (continued)

E(level)‡	L@	C^2S†	Comments
2533	2+(0)	0.35	dσ/dΩ=60 μb/sr.
2600	0	0.53	dσ/dΩ=17 μb/sr.
2655	3+1	0.06+0.01	dσ/dΩ=25 μb/sr.
2738	3	0.11	dσ/dΩ=16 μb/sr.
2763	3	0.04	dσ/dΩ=5 μb/sr.
2792	3	0.21	dσ/dΩ=32 μb/sr.
2815	(3+1)	0.01+0.005	dσ/dΩ=7 μb/sr.
2828			
2849	(3)	(0.02)	dσ/dΩ=3.5 μb/sr.
2875	0+2	1.18+0.07	dσ/dΩ=45 μb/sr.
2931	3	0.06	dσ/dΩ=8 μb/sr.
2958	3	0.05	dσ/dΩ=6 μb/sr.
2965#			
2992	3	0.09	dσ/dΩ=11 μb/sr. E(level): doublet in 1971De10.
3011	3	0.03	dσ/dΩ=4 μb/sr.
3099	(3,2)	(0.21,0.45)	dσ/dΩ=29 μb/sr.
3111#			
3142			
3169#			
3202#			
3221#			
3274#			
3297#			
3312#			

† $C^2S=[(3/10)\sigma(\text{expt})]/\sigma(\theta)$(JULIE). Quoted values are from 1971De10.
‡ From 1973So12. Uncertainties are not quoted but expected to be <10 keV.
# Reported only in 1973So12.
@ From 1971De10, except as noted.
& Also from 1973So12.