^{148}Gd(^{3}He,d) 1990Ma68

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 185, 2 (2022)	23-Aug-2022

1990Ma68: E=30 MeV ^{3}He beam was produced from the MP Tandem accelerator of the Technical University of Munich. Target was ≈30 μg/cm^2 ^{148}Gd on a 50 μg/cm^2 carbon backing. Reaction products were momentum-analyzed with the Q3D magnetic spectrometer (FWHM=13.5 keV) and detected with a multi-wire proportional counter backed by a plastic scintillator. Measured $\sigma(\theta)$ (10° to 55°). Deduced levels, L-transfers, spectroscopic factors from DWBA analysis. Absolute cross sections accurate to 40%.

^{149}Tb Levels

E(level)	L	(2J+1)S	Comments
0	0	3.1 *5*	Proton orbit=$s_{1/2}$. dσ/dΩ(55°)=145 μb/sr *4*.
36†	5	22 *3*	Proton orbit=$h_{11/2}$. dσ/dΩ(55°)=88 μb/sr *3*.
101†	2	6.1 *9*	Proton orbit=$d_{3/2}$. dσ/dΩ(55°)=132 μb/sr *3*.
207†	2	3.6 *5*	Proton orbit=$d_{5/2}$. dσ/dΩ(55°)=89 μb/sr *3*.
460†	(4)	1.9 *6*	Proton orbit=$g_{7/2}$. L: 4 or 5, but L=4 is consistent with γ to 3/2$^+$. dσ/dΩ(55°)=11 μb/sr *2*.
689†			dσ/dΩ(55°)=6 μb/sr *1*.
742†			dσ/dΩ(55°)=10 μb/sr *1*.
870‡ *2*			dσ/dΩ(55°)=13 μb/sr *1*.
950‡ *3*			dσ/dΩ(55°)=19 μb/sr *2*.
1048‡ *4*			dσ/dΩ(55°)=3 μb/sr *1*.

† Rounded values from the Adopted Levels.

‡ 1990Ma68 used energies of lower levels (101,207,461) from γ-ray studies to determine energy of this level.