^{208}Pb(^{16}O,^{15}O) 1975Be40

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Chen # and F. G. Kondev	NDS 126, 373 (2015)	30-Sep-2013

1975Be40: E=139 MeV ^{16}O beam was produced from the Lawrence Berkeley Laboratory 88-inch cyclotron. Targets were 100-150 μg/cm^2 enriched ^{208}Pb on carbon backings. Reaction products were momentum analyzed with an energy-loss magnetic spectrometer, FWHM=180-240 keV. Measured $\sigma(\theta)$. Deduced levels, spectroscopic factors from DWBA analysis.

Others:

1978Ol02: E=312.6 MeV beam was produced from the Berkeley 88-inch cyclotron. Thick targets of 1-3 mg/cm^2 ^{208}Pb were used. Reaction products were momentum analyzed with a quadrupole-sextupole-dipole (QSD) magnetic spectrometer, FWHM=300 keV. Measured $\sigma(\theta)$. Deduced levels, spectroscopic factors from DWBA analysis.

1987Me05: E=793 MeV beam was produced from the GANIL facility. A 300 μg/cm^2 ^{208}Pb on a 30 μg/cm^2 carbon backing was used. Reaction products were momentum analyzed with the magnetic spectrometer, FWHM=215 keV (see also 1986Be41). Measured $\sigma(\theta)$. Deduced levels, spectroscopic factors from DWBA analysis.

1975Be40 deduce rms radius difference <n>-<p> =0.1 fm *1*.

^{209}Pb Levels

E(level)†	S‡	Comments
0.0	0.89	S: for configuration=$\nu(2g_{9/2})^{+1}$.
800 *50*	0.83	S: for configuration=$\nu(1i_{11/2})^{+1}$.
1450 *50*	0.75	S: for configuration=$\nu(1j_{15/2})^{+1}$. Value given is corrected for a small contribution (theory value of 0.91 assumed) from unresolved $\nu(3d_{5/2})^{+1}$ level at 1567 keV.
2050 *50*	≤9.8#	S: for configuration=$\nu(4s_{1/2})^{+1}$.
2490 *50*	1.7#	S: for configuration=$\nu(2g_{7/2})^{+1}$. Value given is corrected for a small contribution (theory value of 0.90 assumed) from unresolved $\nu(3d_{3/2})^{+1}$ level at 2538 keV.
3050 *50*	0.07#	S: for configuration=$\nu(1j_{15/2})^{+1}$.
≈3800	0.25#	S: if levels in the broad peak 3500-4100 keV are $\nu(1j_{15/2})^{+1}$.
5000 *50*		
5880 *50*		
6320 *50*		

† From 1975Be40.

‡ From 139-MeV data of 1975Be40 (finite-range DWBA) as recalculated by 1978Ol02. The values are normalized to S(g.s.)=0.89, the theoretical value from 1973Ri13. See 1978Ol02 and 1987Me05 for values of s deduced from data taken at higher bombarding energies. 1975Be40 state that strength≤0.1 for any high-spin J=L+1/2 single-particle fragments in the energy range 5-10 MeV.

Approximate value since fit to data is poor.