$^{12}C(^{33}Mg,^{32}Mg\gamma)$ 2016Da06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 201,1 (2025)	31-Oct-2024

Includes $^{208}Pb(^{33}Mg,^{32}Mg\gamma)$.

2016Da06: E=400 MeV/nucleon ^{33}Mg beam was produced by fragmentation of a 540 MeV/nucleon ^{40}Ar primary beam at GSI Helmholtz Center for Heavy Ion Research. Fragments were separated and identified by the fragment separator (FRS). The reaction targets were ^{12}C and ^{208}Pb. γ rays were detected with 160 NaI detectors; neutrons were detected with the Large Area Neutron Detector (LAND). Measured Eγ, Iγ, particle-n-γ-coin. Deduced levels, spectroscopic factors.

Total inclusive Coulomb dissociation (CD) cross section integrated up to 9 MeV was determined to be 106 ms *14* (2016Da06).

^{32}Mg Levels

Coulomb dissociation cross section given under comments are from Pb target, after subtraction of nuclear contribution estimated from data on the C target (2016Da06).

E(level)[†]	J$^\pi$[‡]	C^{2}S[#]	Comments
0	0^+	0.19 *1*	Coulomb dissociation σ=32 mb *17*.
2551	(2^+)	0.26 *7*	J$^\pi$: $(1^-,2^+)$ in Adopted Levels. Coulomb dissociation σ=23 mb *5*.
3038	(2^-)	0.47[@] *8*	Coulomb dissociation σ=34 mb *6* for 3038+3480.
3480	(1^-)	0.47[@] *8*	J$^\pi$: (2^+) in Adopted Levels. Coulomb dissociation σ=34 mb *6* for 3039+3480.
4785		0.37[&] *13*	Coulomb dissociation σ=17 mb *6* for 4785+4820.
4820	$(2^-,3^-)$	0.37[&] *13*	Coulomb dissociation σ=17 mb *6* for 4785+4820.

[†] Rounded value from the Adopted Levels.
[‡] As given in 2016Da06. Adopted assignments are given under comments if different.
[#] From comparison of measured Coulomb dissociation cross section with theoretical calculations (2016Da06).
[@] For the combination of 3037- and 3490-keV levels.
[&] For the combination of 4784- and 4819-keV levels.