

$^{28}\text{Si}(^{28}\text{Si},\text{X}\gamma)$ 2001Be01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty		NDS 186, 2 (2022)	31-Mar-2022

2001Be01: $^{28}\text{Si}(^{28}\text{Si},\text{X})$, $E=111.6$ MeV; natural ^{28}Si target (92% ^{28}Si). Two pairs of position sensitive Si (surface-barrier) detectors (PSD), EUROGAM II array composed of 54 Compton-suppressed germanium (Ge) detectors with 30 large volume tapered coaxial Ge detectors. Measured E_γ , I_γ , (fragment)(fragment)- γ coin, excitation-energy spectrum; Deduced transition intensities.

 ^{24}Mg Levels

$E(\text{level})^\dagger$	$J^\pi^\ddagger$
0	0^+
1366.4	2^+
4115.1	4^+
4236.9	2^+
5232.1	3^+
6007.3	4^+
7351.5	2^+
8104.7	6^+
9523.0	(6^+)

† From a least-squares fit to γ -ray energies assigning $\Delta E=1$ keV, except 2753.4γ from 4115.1 keV level, 3510.5γ and 5412.1γ from 9523.0 keV level. The latter three γ fits poorly, with a deviation between 4 to 5σ from the calculated values. For these γ $\Delta E=2$ keV was used. $\chi^2=6.5$ was achieved, $\chi^2_{\text{crit}}=3.3$.

‡ From Adopted Levels.

 $\gamma(^{24}\text{Mg})$

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1368.3	100.0 25	1366.4	2^+	0	0^+	4235.9	4.1 9	4236.9	2^+	0	0^+
1769.8	0.8 2	6007.3	4^+	4236.9	2^+	4639.8	5.5 10	6007.3	4^+	1366.4	2^+
2753.4	4.0 2	4115.1	4^+	1366.4	2^+	5230.2	0.7 2	5232.1	3^+	0	0^+
3510.5	4.2 7	9523.0	(6^+)	6007.3	4^+	5412.1	1.1 4	9523.0	(6^+)	4115.1	4^+
3866.7	6.7 11	5232.1	3^+	1366.4	2^+	7350.3	0.7 2	7351.5	2^+	0	0^+
3989.2	8.2 12	8104.7	6^+	4115.1	4^+						

† Values are consistently low compared to other measured values, not adopted.

‡ From data given in 2001Be01. There are mismatches in reportin the precision of the central and uncertainty data. Evaluators rounded the values to match the data.

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Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
—→ $I_\gamma < 10\% \times I_\gamma^{\max}$
—→ $I_\gamma > 10\% \times I_\gamma^{\max}$

