

$^{52}\text{Cr}(^3\text{He,t})$  1973De03,1969Br04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde		NDS 128, 185 (2015)	10-Jul-2015

1973De03: E=19 MeV, measured  $\sigma(E(t),\theta)$ ,  $\theta=40^\circ$ , sensitive plates placed in the focal plane of the Enge split-pole spectrograph, FWHM: 15 keV.

1969Br04: E=30.2 MeV, measured  $\sigma(E(t),\theta)$ , solid state counter telescopes (thick: 250  $\mu\text{m}$  for DE, 3 mm for E), the final resolution in the triton spectra: 100 keV.

2012Fu02: E=140 MeV/nucleon, measured reaction products spectrum,  $\theta=0^\circ$ , studied Gamov-Teller transitions, "Grand Raiden" spectrometer, FWHM: 29 keV.

All data are from 1973De03, except as noted.

 $^{52}\text{Mn}$  Levels

E(level)	$J^\pi\#$	$\sigma$ (40°) <sup>†</sup>	Comments
0	6 <sup>+</sup>	7.2	
378 1	2 <sup>+</sup>	9.3	
546 1	1 <sup>+</sup>	8.8	
732 1	4 <sup>+</sup>	6.3	
826 1	3 <sup>+</sup>	32	
870 1	7 <sup>+</sup>	36	
884 2		18	
1252 1	5 <sup>+</sup>	12	
1683 1	+	2.6	
1954 2	+	5.0	
2046 4		5.0	
2130 5	+	1.5	
2252 2	+	3.8	
2338 2		2.7	
2629 3	1 <sup>+</sup>	20	E(level): E=2636 (2012Fu02).
2645 5		≈8.0	
2667 10		≈2.0	
2771 3		6.0	
2785 4		3.8	
2796 3	+	8.3	
2815 4		9.4	
2848 3		11	
2858 5		14	
2872 4		4.9	E(level): E=2875 (2012Fu02).
2903 5		5.1	
2925 5		67	E(level): E=2938 (2012Fu02). Identified as IAS ( $^{52}\text{Cr}$ g.s.).
2955 5		2.4	
2973 4			
2982 3			
3077 4		3.2	
3106 4	+	2.8	
3199 3	+	1.1	
3226 4	(5 <sup>+</sup> )	1.5	
3297 5		2.0	
3333 3		5.0	
3351 5		3.7	
3386 3	(3 <sup>+</sup> )	2.8	
3423 3		12	
3490 10		3.8	
3506 3	+	4.3	
3573 5	1 <sup>+</sup>	4.2	E(level): E=3585 (2012Fu02).
3640 6			

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$^{52}\text{Cr}(^3\text{He,t})$  1973De03,1969Br04 (continued) $^{52}\text{Mn}$  Levels (continued)

<u>E(level)</u>	<u>J<math>\pi</math>#</u>	<u><math>\sigma</math> (40°)<sup>†</sup></u>	<u>Comments</u>
3655 6			
3733 4	+	5.4	
3884 6		3.3	
4390 <sup>@</sup> 30	(2 <sup>+</sup> )	31 <sup>‡</sup> 9	E(level): Observed also by 2012Fu02.
4500 <sup>@</sup> 30	(2 <sup>+</sup> )	21 <sup>‡</sup> 6	
5070 <sup>@</sup> 30	(2 <sup>+</sup> )	11 <sup>‡</sup> 4	E(level): E=5090 (2012Fu02).
5835 <sup>@</sup>			

<sup>†</sup> Cross sections (at 40°) in  $\mu\text{b}$ . The cross section uncertainties are estimated to be 25%.

<sup>‡</sup> From 1969Br04 (cross section, 12.5° to 69°).

# Spin assignments based on comparison of angular distributions with those to states of known spin. Parity assumed by authors on the basis of shell-model arguments.

@ From 1969Br04.