

$^{150}\text{Sm}(\mu^-, p\gamma)$ 2019Zi01

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

2019Zi01: Negative muon beams were produced from the μE4 and μE1 lines of the Paul Scherrer Institute (Ψ) in Switzerland. Target was $320 \text{ mg/cm}^2 \text{ Sm}_2\text{O}_3$ powder (92.6% enriched in ^{150}Sm). μ -x rays and γ rays were detected with HPGe detectors. Measured $E\gamma$, $I\gamma$, $E(\mu \text{ x-ray})$, $I(\mu \text{ x-ray})$, $\gamma(t)$. Deduced muon lifetime, partial capture rates to excited states.

 ^{149}Nd Levels

Muon disappearance lifetime= 82.3 ns 5 (capture+decay), from which the total muon capture rate is deduced as $\lambda_{\text{cap}}=11.75 \times 10^6 \text{ s}^{-1}$ 7 (**2019Zi01**).

E(level)	J^π	Comments
0	$5/2^-$	J^π : from the Adopted Levels. Capture rate to excited states (directly feeding g.s.)= $0.78 \times 10^6 \text{ s}^{-1}$ 35, corresponding to a percentage of 6.6% 29 per muon capture (2019Zi01).