

Ni(${}^{36}\text{Ar}$, ${}^{20}\text{Mg}$) 1992Go10

| <u>Type</u> | <u>Author</u> | <u>Citation</u> | <u>Literature Cutoff Date</u> |
|-----------------|--------------------------|-----------------|-------------------------------|
| Full Evaluation | J. H. Kelley, G. C. Sheu | ENSDF | 20-June-2019 |

1992Go10: The decay of ${}^{20}\text{Mg}$ was measured in a study aimed at resolving details of the ${}^{20}\text{Na}^*(2645)$ state, which would decay by ≈ 450 keV proton emission. The ${}^{20}\text{Mg}$ ions were produced by fragmenting an 80 MeV/nucleon ${}^{36}\text{Ar}$ beam on a ${}^{\text{nat}}\text{Ni}$ target; the beam was then magnetically purified and implanted in a $50\ \mu\text{m}$ Si detector that was part of a Si detector telescope constructed to be sensitive to low-energy β -delayed proton decays. Implantation of a ${}^{20}\text{Mg}$ ion in the telescope resulted in the beam being halted so the decay could be studied. By analyzing the rate of β -delayed α particles from the ${}^{20}\text{Na}$ daughter, one finds the β -delayed proton rate of $(100-74(7))=26\ \%$, by comparing with the total number of implanted ${}^{20}\text{Mg}$. The ${}^{20}\text{Mg}$ lifetime was measured as $T_{1/2}=82\ \text{ms}$.

 ${}^{20}\text{Mg}$ Levels

| <u>E(level)</u> | <u>$T_{1/2}$</u> |
|-----------------|-----------------------------|
| 0 | 82 ms <i>4</i> |