^{9}Be(^{86}Kr,X) 2015Li33

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 207,1 (2026)	1-Apr-2023

Includes Ta(^{86}Kr,X) and ^{58}Ni(^{86}Kr,X).

2017Sp03: ^{69}Co ions were produced by projectile fragmentation of ^{86}Kr beam on ^{9}Be target at 140 MeV/nucleon beam using the Coupled Cyclotron facility at the NSCL-MSU facility. The fragmentation products were separated using the A1900 fragment separator and identified based on energy-loss and time-of-flight. The beam ions were implanted into a double-sided silicon strip detector (DSSD) for β detection surrounded by the Summing NaI detector (SuN) of eight segments for detecting emitted γ rays. Measured implant-β(t), γ rays. Deduced $T_{1/2}$.

2015Li33: ^{69}Co ions were produced by projectile fragmentation of ^{86}Kr beam on ^{9}Be target at 140 MeV/nucleon beam using the Coupled Cyclotron facility at the NSCL-MSU facility. The fragmentation products were separated using the A1900 fragment separator. They were then identified and delivered to the Beta Counting System surrounded by the Segmented Germanium Array (SeGA) where the β and γ radiation were detected. ^{69}Co was also populated in the decay of ^{69}Fe (see the ^{69}Fe decay dataset). Five γ rays (594.2 602.4, 1128.5, 1196.3 and 1319 keV) from the decay of ^{69}Co to ^{69}Ni were observed. Measured half-life by time distribution of β particles detected in correlation with implanted ^{69}Co ions and gammas.

2011Da08,2002MaZN (thesis): ^{69}Co ions produced by projectile fragmentation of ^{86}Kr beam on 50 mg/cm^2 thick Ta at 57.8 MeV/nucleon. Separated by LISE2000 spectrometer at GANIL. Detector system included a three-element Si-detector telescope containing a double-sided silicon-strip detector (DSSD) backed by a Si(Li) detector and surrounded by four clover type EXOGAM Ge detectors. Product identified by mass, atomic number, charge, energy loss and time of flight. Measured isotopic $T_{1/2}$ from timing correlation between implanted ions and β decay events. Fitting procedure included five parameters: β-detection efficiency, background rate, mother, daughter and granddaughter half-lives.

2005NiZZ,2004NiZY: Produced by fragmentation of ^{73}Kr beam at 63 MeV/nucleon on a ^{86}Kr^{32+} at RIKEN. Separated by RIPS spectrometer and identified with silicon and tof detectors. Preliminary results of $T_{1/2}$ determined from correlations between implanted nuclei and beta decay.

1999So20 (also 1999Le67): ^{69}Co ions produced by fragmentation of ^{86}Kr beam on ^{58}Ni target at 60.4 MeV/nucleon. Nuclei separated by LISE3 achromatic spectrometer at GANIL, and identified by four consecutive silicon detectors. Measured isotopic $T_{1/2}$ from timing of β decay.

1992We04: ^{69}Co ions produced by fragmentation of a 500 MeV/nucleon ^{86}Kr beam on a Be target. Isotope identification by the fragment separator FRS at GSI in combination with tof and energy-loss measurements. A total of 190 counts were assigned to ^{69}Co corresponding to cross section of 0.49 microbarns with an uncertainty of 50%.

1985Gu14: ^{69}Co ions produced by fragmentation of ^{86}Kr beam on thick targets of Ti and Ta at 33 MeV. Separated by LISE triple focusing analyzer at GANIL. Identified through tof and ΔE-E measurements. Mass histograms of the production of neutron-rich isotopes of Co displayed shows a peak corresponding to ^{69}Co.

^{69}Co Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	(7/2$^-$)	180 ms *20*	J^π: Assignment from 2015Li33 based on possible $\pi f_{7/2}^{-1}$ configuration as observed in other odd A Co isotopes, $T_{1/2}$: From time distribution of $\beta\gamma$(^{69}Co implant) correlated events (2015Li33). Others: 216 ms *15* (2017Sp03), 206 ms *20* (2015Li33: without γ coincidence), 150 ms *20* (2015Li33: from growth and decay curve for 594γ populated in ^{69}Fe decay), 229 ms *24* (2011Da08), 170 ms *30* (1999So20).
170 *90*	(1/2$^-$)	0.75 s *25*	%β^-≈100 E(level): From Adopted Levels. Only the β^- decay has been observed. J^π: From comparison with similar isomers in ^{65}Co and ^{67}Co, and from possible proton-intruder state as in ^{65}Co and ^{67}Co (2015Li33). $T_{1/2}$: From 2015Li33, using a composite decay curve for ^{69}Fe and ^{69}Co activities which indicate an additional state in ^{69}Co.