

# Nickel-63

## Beta Sources

Nickel-63 is electroplated on one face of a thin nickel or nickel alloy foil.

These substrates minimize the loss of ion current occurring at elevated temperatures due to diffusion of the active layer.

Nickel alloy foil is recommended for detectors where the natural springiness of the foil is used to retain the source.

Nickel-63 can be directly plated onto custom designed holders. Inquiries invited.

The maximum practical activity loading for efficient emission is  $\sim 10\text{mCi}/\text{cm}^2$ ,  $370\text{MBq}/\text{cm}^2$

Nominal activity*		On nickel foil 24 x 10mm Code	30 x 10mm Code
GBq	mCi		
37	1	NBC.1	NBC.11
111	3	NBC.2	NBC.12
370	10	NBC.3	NBC.13
555	15	NBC.4	NBC.14

Nominal activity*		On nickel alloy foil 24 x 10mm Code	30 x 10mm Code
GBq	mCi		
37	1	NBC.21	NBC.31
111	3	NBC.22	NBC.32
370	10	NBC.23	NBC.33
555	15	NBC.24	NBC.34

\*Tolerance  $\pm 10\%$

### Quality Control

Sources are lightly wiped over the active face to check for loose contamination. Limit  $0.05\mu\text{Ci}$ ,  $0.18\text{Bq}$ .

Beta emission checked using a  $2\pi$  ion chamber.

Nickel-63 sources will gradually tarnish under normal atmospheric conditions. This results from exposure to air and is aggravated by moisture and, in a confined space, by the effect of beta radiation on air.

Nickel-63 sources should therefore be removed from their packaging on receipt and stored under an inert atmosphere such as dry argon prior to use.

### Model numbers

All AEA Technology Nickel-63 sources are approved by Massachusetts Radiation Control Program. Model NBC refers to plated foils. Model NBCD refers to directly plated holders.