

SafeRad

Selenium 75 Data Sheet

The SR-17 Selenium-75 capsule is agreed 'Special Form Radioactive Material' according to the Regulations for Safe Transport of Radioactive Materials 1985 Edition (as amended 1990). The certificate reference is RU/1011/S. The source is double encapsulated in stainless steel and complies with the highest requirements of the ANSI/HPS N43.6-1997 norm. This norm is equivalent in all respects to ISO2919 1999. The final classification is 99C64535.

It is currently the only SE-75 source that has been demonstrated to retain integrity after exposure to temperatures up to 1200degrees Celsius.

HALF LIFE

Se75: 118.5 days, **60% more than Ir192** (74 days) and **almost four times that of Yb169** (32 days).

GAMMA RAY SPECTRUM

Nine emission lines in energy range 66keV to 401keV. The spectrum is dominated by two lines of 137keV and 265keV.

The resultant average energy of 217keV is significantly lower than the average of 353keV for Ir192 thus providing much **improved radiographic contrast**.

DOSE/EXPOSURE RATES

The Dose Rate of 55µSv/hr/GBq @ 1 metre for Selenium 75 is between that of Yb169 (33.8µSv/hr/GBq) and Ir192 (130µSv/hr/GBq).

Exposure times are therefore much shorter when compared with Yb169, and controlled areas and shielding requirements more favourable when compared with Ir192.

WIRE IQI SENSITIVITY

Practical tests performed using Se75 and Ir192 on a range of steel thicknesses from 2mm to 70mm show that on average a **minimum of one extra wire** is revealed when using Se75.

SOURCE PHYSICAL SIZE / ACTIVITY RANGE

1.0 x 1.0mm	2-4 Ci
1.5 x 1.5mm	10-17 Ci
2.0 x 2.0mm	18-35 Ci
2.5 x 2.5mm	40-60 Ci
3.0 x 3.0mm	65-80 Ci

Selenium-75 sources can be supplied by SafeRad to fit other types of containers. Please contact mwass@SafeRad.com for your requirements.