

Americium-241

Alpha foil and sources for smoke detectors

Americium-241 (^{241}Am) alpha particle emitting foil, made by AEA Technology, is widely used in ionization chamber smoke detectors (ICSD). The foil combines high integrity of containment with high emission efficiency.

AEA Technology has over 30 years experience of foil technology and offers a well established standard product range of foil mounted in holders (sealed sources).

Construction

The radioactive material ^{241}Am emits alpha and low energy X- and gamma radiation. It is incorporated within a gold matrix and sandwiched between a silver backing and a palladium laminate, as illustrated schematically below. The face layer is thick enough to retain completely the ^{241}Am but thin enough to allow efficient emission of the α -radiation.

The shaped foil pieces are then mounted into various holders by staking, securing between spot welded metal plates or rolling over the holder edges.

AEA Technology has developed techniques for producing foil pieces cleanly, reproducibly and safely, and also for mounting them into holders to become sealed sources.

Specialised equipment and appropriately licensed facilities are essential to both processes. It is strongly advised that these operations be carried out at our facilities.

AEA Technology offers a standard product range of sealed sources. Certain foil pieces are also available as indicated. We welcome early discussions on new customer requirements.

Related Products

AEA Technology has a wide-ranging expertise in the design and construction of ionization chambers, built up over 30 years of experience in smoke detection. A consultancy service is offered for the design and/or manufacture of ionization chambers intended for use both in smoke detection and other applications.

A data sheet⁽¹⁾, 'Smoke Detector Ionization Chambers: DSCA2 and DSCA3' is available upon request.

