



Contribution ID: 39

Type: **Wedge Participant**

## Contribution of interlaboratory comparison in the production of a $^{243}\text{Am}$ spike certified reference material

Following the expression of a need for an Americium standard and particularly for one with a certified  $^{243}\text{Am}$  content in 2009 and thereafter by the International Atomic Energy Agency (IAEA), the Commissariat à l'Énergie Atomique et aux Énergies Alternatives/ Direction de l'Énergie Nucléaire (CEA/DEN) of Marcoule and the Joint Research Center of the European Commission (EC-JRC) in Geel carried out a collaborative project for the production of a certified reference material (CRM), enriched in  $^{243}\text{Am}$ .

The initial starting material was supplied to the JRC-Geel by the CEA/Laboratoire d'Analyse d'Atalante (L2AT) for dilution, dispensing and characterization. In parallel to the certification, CEA's Commission d'Établissement des Méthodes d'Analyse (CETAMA) organized an interlaboratory comparison (ILC) using that same material as the test sample prior to the issuing of the certificate.

The measurands in the ILC were the  $^{243}\text{Am}$ ,  $^{241}\text{Am}$  and total Am amount content, as well as the  $n(^{241}\text{Am})/n(^{243}\text{Am})$  and the  $n(^{242m}\text{Am})/n(^{243}\text{Am})$  isotope ratio. This ILC had a double objective: firstly, it was a proficiency test (PT) for the laboratories and secondly, an external check for the characterization values established by the JRC-Geel.

This PT has demonstrated the necessity, of an external check on characterization values obtained by a certification procedure. Here, it has strengthened the confidence in four of the characterization values - corresponding to measurands  $^{243}\text{Am}$ ,  $^{241}\text{Am}$  content, and total Am amount content, and  $n(^{241}\text{Am})/n(^{243}\text{Am})$  isotope ratio - which will therefore be integrated as certified value, but it has also enabled the rejection of a characterization value for the  $n(^{242m}\text{Am})/n(^{243}\text{Am})$  ratio. The "excess variance" weighted mean obtained by the ILC is used as the indicative value in the certificate for this reference material.

### Which "Key Question" does your Abstract address?

SGI4.2

### Topics

SGI4

### Which alternative "Key Question" does your Abstract address? (if any)

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