

CHALLENGES

National or international regulations help to mitigate the risks of the diversion of nuclear materials towards hostile purposes. They may impose inventories to be conducted, that's to say material balances, at various scales. Therefore, nuclear materials storage and advanced nuclear fuel manufacturing facilities must apply **simple and safe solutions to rigorously control the quantity of materials** they have on site.

SOLUTION

HEAT-CHECK MV is a nuclear materials' characterization solution based on calorimetry. It quantifies them from their heat release and therefore is not affected by matrices, containers, or other non-nuclear materials.

- Container volume from 20 to 60 L, or larger with HEAT-CHECK LV
- Accuracy <1% Precision <0.5%
- Complies with ASTM standard C1458
- Options for automation, integration in measurement lines, use in gloveboxes or hot cells

BENEFITS

Simplicity and safety

- Non-destructive control
- For a variety of container shapes, dimensions, quantities and compositions

Rigorous control

- Detection of all emitter types
- Very reliable quantification, especially for pure beta emitters (^3H , ^{90}Sr , etc.)
- When coupled to gamma spectrometry, quantifies and determines the isotopic distribution of alpha emitters (Pu and isotopes, ^{241}Am , etc.)

HEAT-CHECK MV



MEASUREMENTS OF MEDIUM VOLUME WASTE OR CONTAINERS

Up to 20 to 60 liters

QUANTITATIVE AND NON-DESTRUCTIVE MEASUREMENTS

With the highest accuracy for isotopes like plutonium or tritium

RESULTS INDEPENDENT OF MATRIX AND CONDITIONING EFFECTS

Ideal addition to gamma spectrometry

SOFTWARE AND AUTOMATION OPTIONS

For simple and safe use