



ASGS™

Advanced Sectorial Gamma Scanner



FEATURES

- Provides qualitative and quantitative gamma assays with spatial activity distribution for waste in:
 - 180 L
 - 200 L
 - 400 L drums and surface dose rate measurement in different positions (configurable)
- Reduction of virtual activities (in other words, overly conservative activity values) by sectorial gamma scan
- Automatic weighing system for matrix attenuation correction due to sample density
- FaMe control software based on Genie™ user-friendly control software for data acquisition, analysis, Quality Assurance, and sample management
- Standardized modular design and several options for easy adaptation to operational or sites requirements:
 - Turntable, dose rate probe stand, and detector stand configurable
 - Number of dose rate probes configurable according to customer specific requirements
 - Integration in conveyor belt and plant conveyor systems for automatic measurement mode possible
 - Modular equipment means the enhanced functionality can be offered as an upgrade to customers with existing traditional SGS™ hardware.

DESCRIPTION

The Advanced Sectorial Gamma Scanner (ASGS) is a waste scanning system dedicated to evaluating the activity distribution within waste drums. It is based on an innovative calculation and modeling method (ECIAD) efficient for inhomogeneous activity distribution, which reduces the measurement uncertainties.

Nuclide specific waste characterization requires detailed information about drum content, to allow determination of the activity inventory. Besides the geometrical data of the waste drum and the material information, the information of activity distribution can be mandatory. The calibration assumption that the activity is homogeneously distributed inside the waste drum typically leads to overestimation of the real activity because uncertainties can be high and it is necessary to make conservative assumptions to avoid under-reporting the activity. This in turn leads to declaration of additional virtual activities which leads to a significant cost increase in the waste handling process. One way to lower the costs is determining spatial information about the activity inventory which can be achieved by sectorial characterization of the waste drum, in order to reduce the measurement uncertainties.



The newly developed ASGS method allows determination of the spatial activity distribution by sectorial scanning of waste drums. An innovative method for waste drum modelling with inhomogeneous activity distribution (Efficiency Calibration for Inhomogeneous Activity Distributions - ECIAD) allows nuclide specific activity analysis for each single drum sector. This helps to reduce the virtual activities and therefore to a significant cost saving in the waste handling process.

