Waste Control Monitor - Clearance Counter FMS

Waste Control Monitor

In a nuclear-medical hospital not only radioactive or radioactive contaminated waste comes up, but logically also conventional waste. In case of collection, treatment and disposal of waste in a nuclear-medical institute, the success in separating radioactive from conventional waste depends on the precision of each employee – patient. Even the smallest quantities of radioactive waste in conventional waste make it to radioactive waste. With the waste control monitor you can assure, that during waste disposal no radioactive and conventional waste are exchanged or mixed.

Performance features:

- U-shaped detector configuration of 4 high-sensitive NaI-scintillation detectors
- housing open at the front for easy loading
- integrated light barrier for automatic measuring start
- very easy to use check system
- can also be used as a clothing monitor

Clearance Counter FMS

for activity measurement and controlled disposal of radioactive waste.

Use and function

The Clearance Counter FMS is meant to check waste bags or boxes and contaminated clothing or
utensils in nuclear medicine and industry.
Because mainly short life isotopes are used in nuclear medicine, most waste can be considered inactive after a certain storage time.
The Clearance Counter FMS makes it possible to check if the activity value
of the waste is below the levels for restricted disposal, which have been established by the authorities, and to store and record the measurement results. The monitor features an accounting software with
calculation of activity decay and suggested date for repetition of measurement for final disposal.
The cleared waste can be disposed as regular waste which means a considerable cost reduction

Performance features

- measurement / calculation of specific activity (Bq/g) taking into account nuclide-and container-specific calibration factors
- reproducible activity measurement in 4 π-geometry
- compact stainless steel housing with 2 doors for simple loading, movable
- 5 high-sensitive NaI-scintillation detectors (70 x 70 mm²) for γ-activity measurements
- as an alternative also with 5 large-area, thin-layer plastic scintillation detectors for β-activity measurements
- optionally available with additional NaI-detector for nuclide-specific measurement of key nuclides
- industry-PC-system integrated in housing, measuring value display on flat LCD screen
- measuring task-based software with data management system, easy to operate
- calibration factors based on key nuclides and container types
- recording of input and output measurement according to requirements of license and/or radiationprotection ordinance
- automatic consideration of waste weight via integrated balance with serial interface. Calculation of specific activity in Bq/g
- calculation of moment of re-submission based on nuclide (half-life) and specific activity
- output measurement after a definable number of half-lives or after calculated moment of falling below the release limit value
- extensive database management program with data storage and stock book keeping, incl. data selection
- (variable filter functions)
- printout of protocol for removal from stock, for documentation and presenting to the authorities for admission to dispose

Technical data:

- Mechanics:
  - FR 5 - measuring chamber, 50 x 50 x 59 cm (inner dimensions)
    - FR 9 - measuring chamber, 50 x 50 x 89 cm (inner dimensions)
    - 5 mm lead shielding, integrated in all sides
    - total weight approx. 130 kg (FR 5), approx. 190 kg (FR 9)
- Detectors:
  - NaI-scintillation detectors 70 x 70 x 13 mm
    - FR 5 - system 5 detectors
    - FR 9 - system 9 detectors
    - as an alternative for β-measurements:
    - thin-layer, large-area plastic-scintillation
    - detectors 250 x 150 mm (in case of
    - plastic-scintillation detectors other inner dimensions
    - of measuring chamber and external balance)
- Electronics:
  - integrated PC-system (PC-104 type) Pentium-basis
    - operation via mouse pad and keyboard
- LCD screen:
  - integrated 12.1" LCD screen, colour
    - as an alternative external monitor
- Balance:
  - load cells integrated in bottom platform with serial interface RS 232,
    - integration in FMS software, automatic data transfer taking into
    - account tare of container type
- Software:
  - Windows operating system
    - easy to use application software
    - details see software description
- Printer:
  - label printer e.g. SEIKO SLP 430
    - for container labelling
    - label size e.g. 51 x 101 mm
    - ink jet printer for protocols