ORTEC®

FoodGuard-2

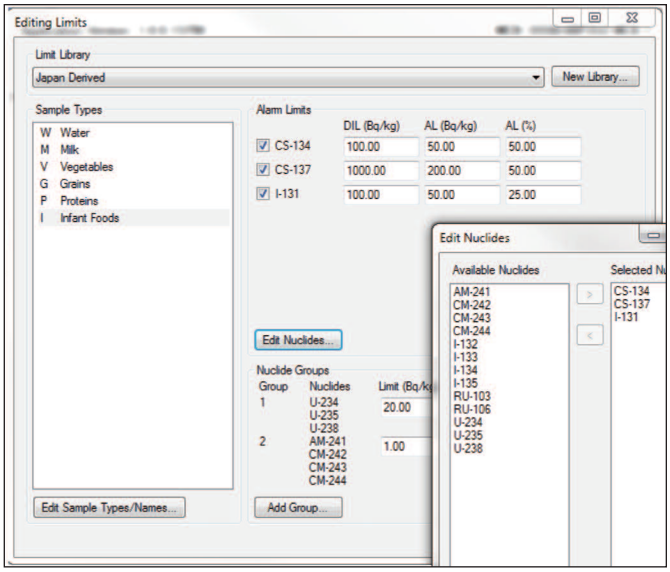
High Resolution Germanium Gamma Spectroscopy Workstation
for Quantitative Determination of Radionuclides in Food

"Complete, out-of-the-box solution designed specifically for measuring gamma ray emitting radioactive contaminants in food and water."

AMETEK®
ADVANCED MEASUREMENT TECHNOLOGY

FoodGuard-2

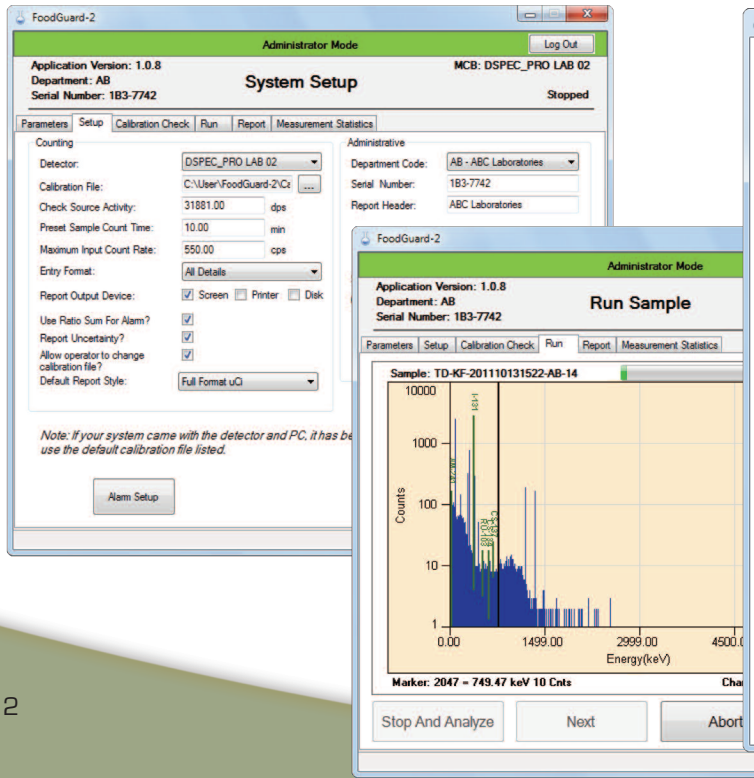
- **Complete, out-of-the-box solution designed specifically for measuring gamma ray emitting radioactive contaminants in food and water.**
- **Simple and interactive user interface to increase efficiency and decrease error.**
- **Editable activity limits tables derived from international standards for permissible radiation levels in food.**
- **Configurable alarms activated when activity level, percentage, or sum of activities is exceeded.**
- **Professional and customizable reports, in HTML and PDF format, for easy sharing and archiving of results.**
- **Supplied precalibrated with a ^{40}K check source and 2-liter Marinelli beakers.**
- **Operator selectable calibration files for supporting additional sample containers and geometries.**

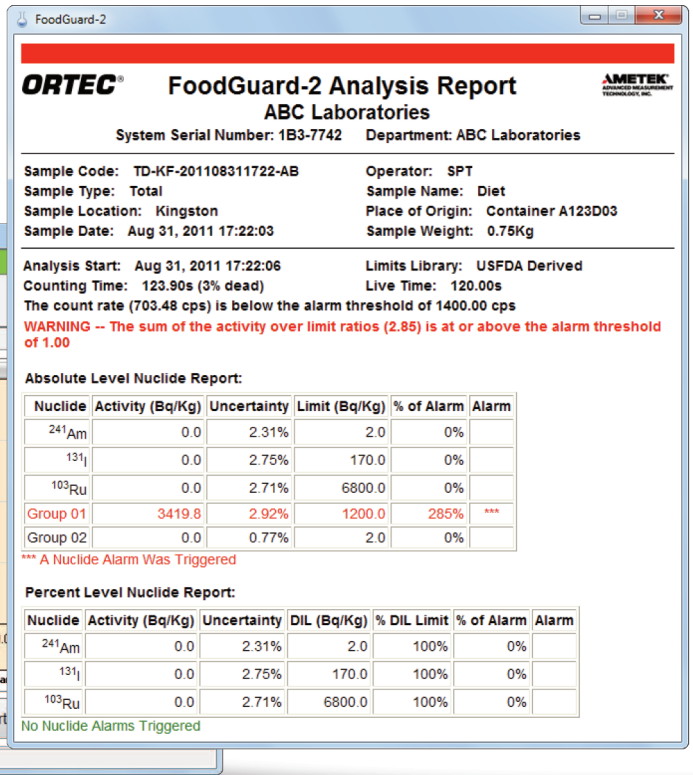


The ORTEC FoodGuard-2 workstation is a ready-to-use, full featured system for performing sophisticated analysis of food, water, and other agricultural samples containing any form of gamma ray emitting radioactive material which can be present following an accident or terrorist incident. By the use of a high-resolution, high-purity germanium (HPGe) detector, each and every gamma ray emmiting radionuclide in the sample is quantified in terms of specific activity in Bq/kg or Bq/liter.

The FoodGuard-2 workstation software includes example limits tables from international regulatory organizations, such as the USFDA and World Health Organization, for acceptable activities of radionuclides such as ^{137}Cs, ^{134}Cs, and ^{131}I. These tables can also be customized with additional nuclides and different limits to meet your specific needs.

When the system arrives, an administrator sets up the sample types, alarm limits, and report outputs in a few easy steps. An operator then enters a few key pieces of sample information using the interactive user interface, places a sample in one of the included Marinelli beakers, and starts counting. During the count, the software provides feedback such as a spectrum and alarm notifications before presenting a professionally formatted report that can be shared or archived. The operation is optimized for high efficiency and clear results.





Minimum Detectable Concentration

MDC is specified for a 20% detector and 2 liter Marinelli beakers of liquid which come standard with the system. MDCs for larger detectors and longer count times will be lower. Calibrations for additional sample densities and geometries can be created using the add-on software GammaVision. Once created, the operator can easily load different calibrations for different sample runs.

Measured ^{137}Cs MDC*	Count Time
0.75 Bq/L	10 Minutes
0.5 Bq/L	30 Minutes
*Calculated using ISO 11929 method.	

FoodGuard-2 System Configurations

The system is complete, pre-calibrated, and configured when ordered from ORTEC. You can choose from a range of detector efficiencies (20% to 60%) and cooling options when ordering.

Ordering Information

Complete FoodGuard-2 Systems Include:

ORTEC GEM HPGe detector in PopTop capsule (select efficiency from 20% to 60%).
CFG-PV4 vertical cryostat with DWR-30 30-liter LN_2 dewar or X-COOLER-III mechanical cooler (115 or 230 V).
HPLBS-1 High Performance Low Background Lead Shield.
DSPEC Pro Advanced Digital Gamma Ray Spectrometer.
FoodGuard-2 Food Monitoring software.
Personal Computer and Printer.
6 each 2-liter Marinelli beakers.
^{40}K (KCl) check source in 2-liter Marinelli.

Model	Description
FOODGD2-PC-20	Includes GEM20P4-70 detector with 20% relative efficiency and 70 mm endcap, CFG-PV4 cryostat and DWR-30 dewar.
FOODGD2-PC-40	Includes GEM40P4-76 detector with 40% relative efficiency and 76 mm endcap, CFG-PV4 cryostat and DWR-30 dewar.
FOODGD2-PC-60	Includes GEM60P4-83 detector with 60% relative efficiency and 83 mm endcap, CFG-PV4 cryostat and DWR-30 dewar.
FOODGD2-PC-XCOOL-115-20	Includes GEM20P4-70 detector with 20% relative efficiency and 70 mm endcap, and X-COOLER-III 115 V.
FOODGD2-PC-XCOOL-230-20	Includes GEM20P4-70 detector with 20% relative efficiency and 70 mm endcap, and X-COOLER-III 230 V.
FOODGD2-PC-XCOOL-115-40	Includes GEM40P4-76 detector with 40% relative efficiency and 76 mm endcap, and X-COOLER-III 115 V.
FOODGD2-PC-XCOOL-230-40	Includes GEM40P4-76 detector with 40% relative efficiency and 76 mm endcap, and X-COOLER-III 230 V.
FOODGD2-PC-XCOOL-115-60	Includes GEM60P4-83 detector with 60% relative efficiency and 83 mm endcap, and X-COOLER-III 115 V.
FOODGD2-PC-XCOOL-230-60	Includes GEM60P4-83 detector with 60% relative efficiency and 83 mm endcap, and X-COOLER-III 230 V.

FoodGuard-2

Expand Your Food Monitoring Application with these Options

GammaVision-32 Gamma Spectrum Analysis Software (option)
GammaVision-32 is a comprehensive package for the analysis of gamma-ray spectra acquired with HPGe detectors. Using GammaVision-32, you can dig deeper into the data and interact with spectrums. Additionally, you can perform more advanced analysis with additional settings and do your own custom calibration. You can view up to 8 live spectra and up to 8 stored spectra at the same time. A high degree of sample automation is possible using JOB or script files and an array of corrections is provided to deal with sample, nuclide and spectrum-related effects. The methods employed are compliant with recognized national and international standards such as ANSI/ISO/ASQ 9001:2000, ASME/NQA-1-1989, and ASME/NQA-2a-1990 and ISO/DIS 11929.

ANGLE-B32 Detector Calibration Efficiency Transfer Software (option)
Gamma spectrometry relies on a "traceable standard" source, that is a standard source of known activity and in the same shape and form as the sample to be counted ("geometry"), being available. ANGLE software can be used to translate the detector efficiency from one geometry to another geometry. This permits the analysis of samples of various geometries without having the different standards. Where a wide variety of sample shapes and forms are encountered, ANGLE can reduce the expense and avoid the issues relating to the storage of radioactive calibration standards.

Nuclide Navigator 3 Chart of the Nuclides Database (option)
Nuclide Navigator is an interactive program to view, search, and extract gamma-ray, alpha-ray, and beta-ray energies and yields, half-lives, parent/daughter relations, and neutron absorptions from databases.

More Information

The ORTEC website is packed with application and product information relating to gamma spectroscopy. Specific information relating to disaster monitoring and food monitoring may be found at

www.ortec-online.com/Solutions/Food-Water-Environmental-Monitoring.aspx

For further information on the products listed here go to the URLs listed below:

Germanium Detectors: www.ortec-online.com/Solutions/RadiationDetectors/index.aspx

HPLBS-1 Lead Shields: www.ortec-online.com/download/HPLBS-Series-High-Performance-Low-Background-Shields-Accessories-Ge-Detectors.pdf

Spectroscopy Electronics: www.ortec-online.com/Solutions/gamma-spectroscopy.aspx

Software: www.ortec-online.com/Solutions/applications-software.aspx

Specifications subject to change
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