



RESEARCH AND PRODUCTION ENTERPRISE "AKP"

- Design, manufacturing and installation of γ and β spectrometers of ionizing radiation
- Methods of samples preparation
- Application software
- Warranty and post-warranty service
- Trainings and consulting

SCINTILLATION BETA-GAMMA-SPECTROMETERS SE-BG-01-"AKP"



FOOD INDUSTRIES:
produce, storage, markets



MEDICINE:
hospitals, veterinary service



CERTIFICATION
goods, materials, wastes



EXPERT AND EXPRESS PROFESSIONAL RADIATION CONTROL OF FOODSTUFF, WATER, BUILDING MATERIALS AND OTHER GOODS ACCORDING TO THE ANY NATIONAL REGULATION IN NATIVE SAMPLES

**^{137}Cs , ^{134}Cs , ^{131}I , ^{90}Sr , ^{226}Ra ,
 ^{232}Th , ^{40}K , ^{222}Rn and others**

EXPRESS CONTROL

A few minutes **express control** for not exceeding of permissible levels in native sample. **Ideal choice for perishable** foods:

meat (200 Bq|kg) - 1,5 min
fish (150 Bq|kg) - 2 min

UNIQUE TECHNOLOGY

Allow simultaneous determine of the specific activity of ^{90}Sr , ^{137}Cs and ^{40}K in the native samples without using the radiochemical or physical concentration techniques

EXPERT MEASURING

Professional **device for expert measurements:** Separate definition of ^{90}Sr and ^{90}Y is possible.
Measurement of count samples immediately after radiochemical separation of ^{90}Sr

TECHNICAL SPECIFICATION

The joint beta-gamma-spectrometers SE-BG-01-“AKP” are designed for determination of qualitative and quantitative composition of radionuclides in samples and used for measure of specific activity of the wide set of beta and gamma emitted radionuclides.

Composition

- Scintillation beta and gamma intelligent detection units
- Passive low-background shields for detection units
- Set of measuring vessels
- Software “AKWin”

Gamma-ray spectrometer

Description	SEG-001- “AKP-S”-150	SEG-001- “AKP-S”-63	SEG-001- “AKP-S”-40
Energy range of gamma-rays, MeV	0.1-3.5	0.1-3.5	0.1-3.5
Energy resolution by 0.661 MeV (¹³⁷ Cs), %	<9	<9	<9
Integral nonlinearity, %	<1.5	<1	<1
MDA by external background 15 mR/h by 1 hour exposure for ¹³⁷ Cs, Bq	0.9 (1 l vessel)	1.2 (1 l Marinelli)	10 (0.5 l)
Number of analyzer channels	1024; 2048	1024; 2048	1024; 2048
Power supply	220V, 50Hz (110V, 50Hz)	220V, 50Hz (110V, 50Hz)	220V, 50Hz (110V, 50Hz)
Weight, kg	800	200	52
Power consumption	250wt	250wt	250Wt



Beta-ray spectrometer



Range of activity measurement, Bq				0.1÷10 ⁵
Energy range of registered beta-emission, MeV				0.1÷3.5
Integral nonlinearity, %				<1.5
MDA by 2 hours exposure for CP=0.95, Bq/sample:				
Sample	V=160 ml ρ=1g/ml	V=160 ml ρ=0.6 g/ml	V=10 ml ρ=1g/ml	V=10 ml ρ=0.6 g/ml
Isotope				
⁹⁰ Sr	0.8	0.4	0.25	0.2
¹³⁷ Cs	0.9	0.7	0.5	0.45
Background intensity in energy range 200 keV-1200 keV, pulse/s.				<1.4
Operating condition determination time, min				30
Continued operation time, hours				24
Power supply				220V, 50Hz
Power consumption				250 Wt

SOFTWARE “AKWIN”

«AKWin» software is designed for control of measurements and automatic spectra processing.

«AKWin» software lets minimum skilled operators make routine measurements and at the same time is a universal means for professionals who conduct nuclear researches.

- Measurement control
- Spectrums treatment
- Documentation of proceeding results
- Possibility to transfer report to standard editor
- Providing of spectrometer calibration
- Possibility of work with radionuclides library
- Providing of measurement quality
- Possibility to data transfer to database
- Possibility to provide automatic analysis of not exceeding permissible level of radionuclides

PROFESSIONAL SOLUTIONS FOR RADIATION CONTROL AND MONITORING

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