Materials and Radioactive Waste Characterization

Description

Radioactive Waste Management Department (DMDR) owns the **DMDR-Lab** laboratory equipped with the latest equipment, the Quality Management System implemented and notified CNCAN, according to SR EN ISO / IEC 17025: 2005**.**

Application Domains:

- Characterization of radioactive waste and environmental samples in terms of radionuclides, physicochemical, structural and mechanical;
- Analysis of environmental samples (soil, sediment, vegetation, water) by gamma spectrometry;
- Expertise of sealed gamma radioactive sources;
- Measuring unfixed contamination (gamma emitting radionuclides);
- Determination of gamma emitting radionuclides activity from packages;
- Measuring the tritium activity of the water by liquid scintillation counter methods (LSC);
- Measurement of global alpha and beta activity in low background;
- Expertise of sources using gamma spectrometry at the beneficiary location;
- Determination of the heavy metals concentration in liquid and solid samples;
- Determination of the concentration of ions (phosphates, nitrates, nitrites, sulfates, cyanide, chlorine, ammonia, etc.) of aqueous liquid samples;
- Determination of chemical oxygen consumption (CCO-Cr) and total organic carbon (TOC) of liquid and solid samples;
- Determination of pH, conductivity, salinity, total dissolved solids (TDS), dissolved oxygen density, total materials in suspension (MTS), etc
- Fixed residue determination at 105°C;
- Qualitative and quantitative determination of a large range of chemical species with ppm and ppb detection scale limits, depending on sample and testing;
- Mechanical tests: compression, bending, permeability;
- Structural analysis by X-ray diffraction in inorganic cement powder (XRD)
- Determining the concentration of major and minor elements in solid samples by X-ray fluorescence spectrometry (XRF).

Main Advantages:

- Making determinations, analysis and tests with modern equipment that guarantees the accuracy of the results;
- Efficiency, treating customers equally and delivery of services at minimum cost

Potential Customers or Commercial Applications

Companies operating in the industry, agriculture, medical institutions, research institutes which are using radioactive materials in their work

Keywords

IFIN, nipne, management, waste, radioactive, low active, active environment, radioactive sources, storage, processing, characterization, final storage, transport, Class 7 radioactive materials, DMDR, STDR, LILW-SL, short-lived radioactive waste, gamma emitting radionuclides, X-ray fluorescence spectrometry, X-ray diffraction,

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