

of the Latest Evaluated Decay Data for the CTBT Relevant and Background Radionuclides for γ ray Spectrometry

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The CTBT-relevant radionuclides were selected using decay data from around 1998 to 2000. Now, about 22 years after the selection, we have available evaluated decay data that are even more reliable than they were at that time. The latest evaluated decay data (half-lives, decay modes, γ -ray energies, and their emission rates) for the CTBT relevant 96 radionuclides and background 49 radionuclides in γ -ray spectrometry such as particulate monitoring were compiled. For the data compilation, decay data evaluation project (DDEP) data, which contains the latest evaluated data for radionuclides with high applicability, and evaluated nuclear structure data file data for radionuclides without DDEP data available were used. The comparison of the compiled data set and the data used for the selection of the CTBT-relevant radionuclides showed relative differences of up to 36 % for the main γ ray emission rate, up to 10 % for the half-life, and up to 0.1 % for the main γ ray energy. In addition to CTBT-relevant and background radionuclides, a compilation of γ ray data for 18 radionuclides used for calibration and quality control measurements of γ ray spectrometer was also prepared.

Promotional text

The latest evaluated decay data of the CTBT-relevant and background radionuclides were compiled for gamma ray spectrometry.

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