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Gas-filled ionization chamber for X and gamma-ray

X、 γ 射线充气电离室

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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X-ray and gamma-ray gas-filled ionization chambers

1 Scope

This document specifies the technical requirements, inspection rules and packaging, transportation, storage and other aspects of X-ray and gamma-ray gas-filled ionization chambers (hereinafter referred to as "ionization chambers").

Storage, marking, etc., and describes the corresponding test methods.

This document applies to the design, manufacture and inspection of X-ray and gamma-ray gas-filled ionization chambers for radiation protection and radiation environment monitoring.

For reference use with a suitable ionization chamber.

2 Normative references

GB/T 191

GB/T 4208

GB/T 10257

GB/T 10263

GB/T 11684

GB/T 20138

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Using gas as the working medium, the applied electric field can effectively collect the ions and electrons generated by ionizing radiation in the gas onto the electrodes, but A hermetically sealed detector of ionizing radiation which is not sufficient to produce amplification effects from gases.

3.2

Gas-filled ionization chamber used to measure X-rays and gamma rays.

3.3 characteristic curvecharacteristiccurve

Under constant radiation conditions, other parameters remain unchanged, indicating the relationship between the current or count rate in the radiation field as a function of the applied voltage in the ionization chamber curve.

NOTE 1 This curve is a characteristic of all ionization chambers operating in current and pulse mode.

NOTE 2 For detectors operating in current mode, this characteristic curve is a saturation curve.

[Source. GB/T 4960.6-2008, 2.2.73, modified]

3.4 plateau(regions)

The interval in the ionization chamber characteristic curve in which the measured current or count rate is essentially independent of the applied voltage.

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