

ICS 27.120.01

CCS F88



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 13182-2007

Replacing GB/T 13182-1991

**Thallium-activated sodium iodide scintillator and scintillation
detectors of sodium iodide(thallium)**

碘化钠（铊）闪烁体和碘化钠（铊）闪烁探测器

Issued on: July 13, 2007

Implemented on: March 1, 2008

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

Table of Contents

1 Scope	1
2 Normative references	1
3 Definitions and symbols	1
4 Product Category	3

Foreword

This standard replaces GB/T 13182-1991 "NaI (TI) scintillation detector" (hereinafter referred to as the original standard). This standard is based on the original standard text on the original summary implement standards, implementation experience, combined with a decade of nuclear radiation detection technology Progress and development of products and prepared. Since the GB 13181-1991 "NaI (TI) scintillator" has been revised to GB/T 13181-2002 "Methods for measuring performance scintillator" Discard about sodium iodide (TI) scintillator (hereinafter referred to simply scintillator) product content standards, and sodium iodide (TI) scintillation detector (hereinafter may be Referred scintillation detectors) by a scintillator and photomultiplier tubes, and the measurement of the scintillator also need to configure a photomultiplier tube, so scintillator and Sparkle Shuo detectors are closely related, and have many of the same technical requirements, such as.

--- Energy resolution, detection efficiency, the background level (counts) and other general performance characteristics;

--- For operating temperature, storage temperature and humidity constant adaptation, packaging, transportation, vibration and shock environments. In addition, they are also substantially in product classification, inspection rules, and product labeling, packaging, transportation, storage and accompanying documents The same, so this will be organically integrated standard scintillation detectors and scintillator together, integrated presentation of their contents, the name changed to "sodium iodide (TI) scintillator and sodium iodide (TI) scintillation detector. " To improve the standard of readability and operability, the present standards are technical requirements and test methods scintillator and scintillation detectors statements. This standard method of measuring performance characteristics of the main cited GB/T 13181-2002 "scintillator performance measurement methods" and GB 7270- 1987 "photomultiplier testing methods"; environmental conditions and test methods for products is taken from GB/T 10263-2006 "Radiation Detection Is Environmental conditions and testing procedures. " The other changes to the original standard criteria are.

--- Range part of the increase, "This standard does not apply to the special requirements and special applications of sodium iodide (TI) scintillator and sodium iodide (thallium) flash

Shuo detector; "

- On the model name and used code names and symbols "sample" form;
- Simplified "crystal defects" requirements, modify the corresponding test methods and inspection rules;
- Adjustment, standardized grading and energy resolution, improves the accuracy of the energy resolution, in order to achieve international standards;
- General proposed test, in particular proposals for test equipment and radioactive sources requirements to the test of several sources;
- Standardized list of test items;
- Additions accompanying documents. Appendix A of this standard is informative annex, Annex B and Annex C is normative appendix. This standard by the National Nuclear Instrument Standardization Technical Committee. This standard by the Institute of Nuclear Industry Standardization. This standard was drafted. Nuclear Industry Standardization Institute, Beijing Nuclear Instrument Factory, Tsinghua University. Drafters of this standard. Xiongzhen Long, Ma Chaogui, Liyuan Jing, Xiao Chen. This standard was first published in 1991. NaI (TI) scintillator and NaI (TI) scintillation detector

1 Scope

GB/T 13182-2007 is the Chinese national standard on thallium-activated sodium iodide scintillator and scintillation detectors of sodium iodide(thallium), in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 13 July 2007 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 March 2008. Classification: ICS 27.120.01, CCS F88. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the NaI (TI) scintillator and sodium iodide (TI) scintillation detector product classification, technical requirements, test methods, inspection Rules and signs, packaging, transportation, storage and accompanying documents. This standard applies to the measurement of X-rays and gamma sodium iodide (TI) scintillator and sodium iodide (TI) scintillation detector. This standard does not apply to special requirements or special applications (such as for CT) of sodium iodide (TI) scintillator and sodium iodide (TI) scintillation probe Detector.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 4960.6 nuclear science and technology terminology nuclear instrumentation

GB/T 7270-1987 Test Method for photomultiplier tube (neq IEC 60306. 1969)

GB/T 10257-2001 nuclear instruments and nuclear radiation detectors Quality inspection rule

GB/T 10263-2006 nuclear radiation detectors Environmental conditions and testing procedures

GB/T 13181-2002 scintillator Methods for measuring performance EJ/T 1059 nuclear equipment products packaging technology EJ/T 1061 nuclear radiation detector type designation

3 Definitions and symbols

3.1 Terms and Definitions GB/T 4960.6 and established the following terms and definitions apply to this standard.

3.1.1 In the ionizing radiation, the substance can emit light radiation and flashes.

3.1.2 By a number of scintillation material in some appropriate form consisting of ionizing radiation sensitive element. Organic and inorganic scintillators divided into two categories, there are forms of solids, liquids and gases. NOTE. In this standard, defined by the system flashes thallium-activated sodium iodide scintillator consisting of sodium iodide (TI) scintillator.

3.1.3 Scintillator radiation at a measured easily through the part.

3.1.4 Scintillator allows optical radiation revealing part.