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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 23463-2025

Replacing GB/T 23463-2009

Protective clothing - Protective clothing against microwave radiation

防护服装 微波辐射防护服

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 23463-2009 "Protective Clothing - Microwave Radiation Protective Clothing". Compared with GB/T 23463-2009, except for the following. Aside from structural adjustments and editorial changes, the main technical changes are as follows:

---The scope has been changed (see Chapter 1, Chapter 1 of the.2009 edition);

---Added terms and definitions for "microwave," "dynamic range," and "human model" (see 3.1~3.3);

---The terms and definitions of "occupational exposure" and "exposure limits" have been removed (see

3.2 in the.2009 edition);

---The protection levels have been changed (see Table 1, Table 2 in the.2009 edition);

---The testing method for shielding effectiveness has been changed (see 5.1,

5.13 in the.2009 version);

---The requirements for marking have been changed (see Chapter 6, Chapter 6 of the.2009 edition);

---Rename Appendix A to "Shielding Effectiveness Test Methods" (see Appendix A,

Appendix A of the.2009 edition);

---A normative appendix, "General Requirements for Human Models," has been added (see Appendix B). Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the Ministry of Emergency Management of the People's Republic of China. The release history of this document and the document it replaces is as follows:

---First published in.2009 as GB/T 23463-2009;

---This is the first revision. Microwave radiation protective clothing

1 Scope

GB 23463-2025 is the Chinese national standard on protective clothing - protective clothing against microwave radiation, in the field of environment and health protection, safety. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 29 August 2025 by the Ministry of Emergency Management, and has been in force since 1 September 2026. Classification: ICS 13.340.10, CCS C73. 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 document specifies the technical requirements, labeling, and manufacturing requirements for microwave radiation protective clothing applicable to the frequency range of 300MHz~40GHz. The information provided by the vendor describes the testing method. This document applies to reflective microwave radiation protective clothing produced using methods such as metal fiber blending and fabric metallization. It also applies to... Microwave-absorbing protective clothing that uses microwave-absorbing materials to attenuate microwave radiation.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 3917.3 Textiles - Tear Properties of Fabrics - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 12903 and the following terms and definitions apply to this document.

3.1 microwave Electromagnetic waves with frequencies in the range of 300MHz to 300GHz.

Note. Microwaves include pulsed microwaves and continuous microwaves.

3.2 dynamic range The amplitude range of the receiving system operating in the linear region is equal to the difference between the maximum and minimum signal values.

3.3 human model phantommanmodel Made of low-loss, low-dielectric-constant electromagnetic wave-transparent material, this complete plastic dummy includes a head, torso, and limbs.

3.4 Under the same electromagnetic field environment and detection location, the electric field strength E0 at a certain point on the human model when not wearing microwave radiation protective clothing is different from that when wearing it. The electric field strength E1 after wearing microwave radiation protective clothing is compared and expressed logarithmically. SE=20lg E0 E1 (1) In the formula. SE

--- Shielding effectiveness, measured in decibels (dB); E0

--- Electric field strength when not wearing microwave radiation protective clothing, measured in volts per meter (V/m); E1

--- Electric field strength when wearing microwave radiation protective clothing, measured in volts per meter (V/m).

4.1 General Requirements

4.1.1 Microwave radiation protective clothing shall be sized according to the provisions of GB.20097.If the size is outside the range, the size shall be adjusted according to the difference.

4.1.2 Microwave radiation protective clothing should not have exposed metal parts, such as metal buttons, zippers, metal signs, etc.

Note. This is to prevent metal parts from induced high potential differences under strong electric fields, which could lead to discharge.

4.1.3 Microwave radiation protective clothing should be individually sealed and contain antioxidants.

Note. To prevent the metal layer of metallic textiles from oxidizing during storage and transportation.

4.2 Structure and Appearance

4.2.1 Microwave radiation protective clothing should be simple and practical in style, and the following styles should be adopted according to specific usage requirements.

a) Full-body shielding protective suit; Note

1.Full-body shielding protective suits can be equipped with head coverings, visual goggles, gloves, and shoes and socks.

b) Split-type shielding protective suit; Note

2.The split shielding protection includes the top and pants.

c) Partial shielding protective clothing. Note

3.Partial shielding protective clothing generally includes styles such as gowns, vests, and aprons.

4.2.2 Full-body protective suits and two-piece protective suits should minimize openings, seams, and gaps/holes. Two-piece protective suits The overlap between the hem of the top and the waistband of the trousers should be greater than 20cm.

4.3 Technical Requirements

4.3.1 The protective performance of microwave radiation protective clothing is divided into 5 levels according to shielding effectiveness, and should meet the requirements of Table 1. Table

1.Protection performance levels of microwave radiation protective clothing Protection rating and shielding effectiveness (SE/dB) I 6<=SE< 10 II. 10<=SE< 20 III 20<=SE< 30 IV 30<=SE< 40 V SE>=40

4.3.2 The shielding effectiveness of the fabric of microwave radiation protective clothing should not be lower than that of the finished garment.

4.3.3 In full-body shielding protective suits, the electromagnetic shielding materials used in the headgear, gloves, shoes, and socks should have a shielding effectiveness of no less than [a certain level]. For the main functional materials of the clothing; the transparent part of the goggles should have a shielding effectiveness of not less than 30dB.

4.3.4 The physical and chemical properties of microwave radiation protective clothing shall meet the requirements specified in Table 2.