

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

**GA/T 841-2009**

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**General technical requirements for trace narcotics/explosives  
detectors based on ion mobility spectrometry**

基于离子迁移谱技术的痕量毒品/炸药检测仪通用技术条件

**(English Translation)**

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## Foreword

This document is drafted in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents":

This document replaces GA/T 841-2009 "General technical requirements for trace drug/explosive detectors based on ion mobility spectrometry", and Compared with GA/T 841-2009, in addition to structural adjustment and editorial changes, the main technical changes are as follows:

- a) Modified terms, added detection limit, blank test, self-cleaning time, characteristic database (see 3.5, 3:7, 3:9, 3:11), deleted Ion mobility spectrometer, trace drug/explosive detector, inhalation sampling, cold start (see 3.2, 3:3, 3:4, 3:6 of the:2009 edition), revised Changed the swab sampling and detection rate (see 3.2, 3:3, 3:5 and 3:9 of the:2009 edition);
- b) Modified the appearance requirements [see 5.1, 5:1a), b) of the:2009 edition];
- c) Added identification requirements (see 5.2);
- d) Added quality requirements (see 5.3);
- e) Modified the software function (see 5.4, 5:2:3 of the:2009 edition);
- f) Added self-test requirements (see 5.5, 5:2:4 of the:2009 edition);
- g) revised storage capacity requirements [see 5.6, 5:2:3d) of the:2009 edition];
- h) revised data interface requirements (see 5.7, 5:2:4 of the:2009 edition);

- i) Modified the alarm prompt requirements (see 5.8, 5:2:5 of the:2009 edition);
- j) Added school hours requirements (see 5.9);
- k) delete the sampling method requirement (5:2:2 of the:2009 edition);
- l) Modify the requirements for the types of detectable substances (see 5.11:2, 5:3:2 of the:2009 edition);
- m) Modified the detection limit requirements (see 5.11:3, 5:3:4 of the:2009 edition);
- n) Added self-cleaning time requirement (see 5.11:5);
- o) Modify the overload recovery time requirements (see 5.11:6, 5:3:6 of the:2009 edition);
- p) revised power requirements (see 5.12, 5:2:1 of the:2009 edition);
- q) Modified the electrical safety requirements (see 5.13, 5:6:2 of the:2009 edition);
- r) Modified radiation safety requirements (see 5.14, 5:6:1 and 5:5:2 of the:2009 edition);
- s) Modified electromagnetic compatibility requirements (see 5.15, 5:5 of the:2009 edition);
- t) Modified the requirements for environmental adaptability (see 5.16, 5:4 of the:2009 edition);
- u) Modified the test environment requirements (see 6.1:1, 6:1 of the:2009 edition);
- v) The configuration method of the detection solution was deleted (see 6.2:3 of the:2009 edition);
- w) Revised the sample requirements for drugs and explosives (see 6.1:2, 6:2:1 of the:2009 edition); added the requirements for detector samples (see 6.1:3);
- x) Modified the basic detection performance verification test method (see 6.2, 6:2:6 of the:2009 edition); test methods for the types of detectable substances (See 6.13:4, 6:5:2 of the:2009 edition); Test methods for environmental suitability (see 6.18, 6:6 of the:2009 edition);

Please note that some content of this document may involve patents: The issuing agency of this document assumes no responsibility for identifying patents:

## 1 Scope

This document specifies the requirements for trace drug detectors, trace explosive detectors, trace drugs and explosive detectors based on ion mobility spectrometry:

Requirements for classification, technical requirements, marking, packaging, transportation and storage, describe test methods, and establish inspection rules:

This document applies to trace drug detectors, trace explosives detectors, trace drugs and

explosives based on ion mobility spectrometry with swab sampling:

Design, manufacture and inspection of drug detectors:

## 2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document:

GB/T 191 Graphical signs of packaging, storage and transportation GB/T 2423.1-2008 Environmental Testing of Electrical and Electronic Products Part 2: Test Methods Test A: Low Temperature GB/T 15211-2013 Environmental adaptability requirements and test methods for safety precaution and alarm equipment GB 16796-2009 Safety requirements and test methods for safety precaution and alarm equipment GB/T 17626.2-2018 Electromagnetic Compatibility Test and Measurement Technology Electrostatic Discharge Immunity Test GB/T 17626.3-2016 Electromagnetic compatibility test and measurement technology Radio frequency electromagnetic field radiation immunity test GB/T 17626.4-2018 Electromagnetic Compatibility Test and Measurement Technology Electrical Fast Transient Burst Immunity Test GB/T 17626.5-2019 Electromagnetic Compatibility Test and Measurement Technology Surge (Shock) Immunity Test

## 3 Terms and Definitions

The following terms and definitions apply to this document:

ion mobility spectrometry Using the difference in the mobility of gas-phase ions formed by the ionization reaction of substances in an electric field to achieve trace analysis for the identification of the tested sample Technology:

wipe sampling wipesamplecollection the method of wiping the surface of the test object with the sampling carrier to collect the sample for analysis:

Detection rate probabilityof detection the probability that the detector can correctly alarm when detecting explosives/drugs: