



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

GB/T 39560.2-2024

**Determination of certain substances in electrical and electronic
products - Part 2: Disassembly, disjointment and mechanical
sample preparation
(English Translation)**

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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.

This document is part 2 of GB/T 39560 "Determination of certain substances in electrical and electronic products". GB/T 39560 has been published the following parts.

- Part 1: Introduction and overview;
- Part 2: Disassembly, and mechanical sample preparation;
- Part 3-1. Screening of lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry;
- Part 3-2. Screening of fluorine, chlorine and bromine in polymers and electronic components by combustion-ion chromatography (C-IC);
- Part 3-3. Screening of polybrominated oligomers in polymers by gas chromatography-mass spectrometry with pyrolysis/thermal desorption (Py/TD-GC-MS) benzene, polybrominated diphenyl ethers, and phthalates;
- Part 4: Determination of mercury in polymers, metals and electronic components by CV-AAS, CV-AFS, ICP-OES and ICP-MS;
- Part 5: Determination of cadmium, lead, chromium and metals in polymers and electronic components by AAS, AFS, ICP-OES and ICP-MS Cadmium and lead content;
- Part 6: Determination of polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography-mass spectrometry (GC-MS);
- Part 7-1. Determination of hexavalent chromium [Cr(VI)] in colorless and colored anti-corrosion coatings on metals by hexavalent chromium colorimetry;
- Part 7-2. Determination of hexavalent chromium [Cr(VI)] in polymers and electronic components by hexavalent chromium colorimetry;
- Part 8: Gas chromatography-mass spectrometry (GC-MS) and gas chromatography-mass spectrometry with pyrolysis/thermal desorption (Py/TD-GC-MS) MS determination of phthalates in polymers;
- Part 9: Determination of hexabromocyclododecane in polymers by gas chromatography-mass spectrometry (GC-MS);
- Part 10: Determination of polycyclic aromatic hydrocarbons (PAHs) in polymers and electronic components by gas chromatography-mass spectrometry (GC-MS);
- Part 12: Simultaneous determination of polybrominated biphenyls, polybrominated

diphenyl ethers and phthalates by gas chromatography-mass spectrometry (GC-MS).

This document replaces GB/T 39560.2-2020 "Determination of certain substances in electrical and electronic products - Part 2: Disassembly, and mechanical Compared with GB/T 39560.2-2020, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The general flow chart of the sampling strategy has been changed (see Figure 1, Figure 1 of the 2020 edition);
- b) Added four definitions of terms. disassembly, splitting, homogenized material and sample preparation (see 3.1.1 to 3.1.6, 3.1 of the 2020 edition);
- c) Added EEE, HBCDD, ICP-MS, ICP-OES, LED, LOT, OLED, PAE, PAH, PBB, PBDE, 15 abbreviations including PCBA, SCART, TCEP and XRF were removed, and 2 abbreviations including PAS and PWB were deleted (see 3.2, 2020 3.2 of the 2011 edition);
- d) Added content related to the description of complexity and challenges of electronic and electrical products (4.3 of the 2020 version).

This document is equivalent to IEC 62321-2:2021 "Determination of certain substances in electrotechnical products Part 2: Disassembly, and mechanical Sample Preparation.

The following minimal editorial changes were made to this document.

--- In order to be consistent with the existing standard series in my country, the name of the standard is changed to "Determination of Certain Substances in Electrical and Electronic Products Part 2 "Disassembly, splitting and mechanical sample preparation";

---Change "exemption" to "application exception".

Introduction

The widespread use of electronic and electrical products has made people more concerned about their impact on the environment. Therefore, many countries in the world have revised their Regulations regarding waste disposal, use of restricted substances and energy consumption related to gas products.

GB/T 39560 "Determination of Certain Substances in Electrical and Electronic Products" series provides the electrical and electronic industry with a global consistent the detection method for restricted substances in electronic and electrical products is a basic and universal standard for the control of hazardous substances in electronic and electrical products.

The GB/T 39560 series is intended to consist of 19 parts.

--- Part 1: Introduction and overview. The purpose is to standardize the general process and method of testing restricted substances in electronic and electrical products.

Technical framework, etc.

--- Part 2: Disassembly, and mechanical sample preparation. The purpose is to standardize the disassembly and disassembly of samples in the detection of restricted substances in electronic and electrical products.

The principles, methods and processes of mechanical sample preparation.

--- Part 3-1. Screening of lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry. The purpose is to standardize the X-ray fluorescence spectrometry Methods and procedures for screening and testing five substances, lead, mercury, cadmium, total chromium and total bromine, in electronic and electrical products.

--- Part 3-2. Combustion-ion chromatography (C-IC) screening of fluorine, chlorine and bromine in polymers and electronic components.

Methods and procedures for screening fluorine, chlorine and bromine in polymers and electronic components using C-IC.

--- Part 3-3. Screening of polybrominated oligomers in polymers by gas chromatography-mass spectrometry with pyrolysis/thermal desorption (Py/TD-GC-MS) the purpose is to standardize the use of Py/T D-GC-MS to screen for polybrominated diphenyl ethers and phthalates in polymers.

Methods and procedures for the determination of brominated biphenyls, polybrominated diphenyl ethers and phthalates.

--- Part 3-4. High performance liquid chromatography with ultraviolet detection (HPLC-UV), thin layer chromatography (TLC) and thermal desorption HPLC the purpose is to standardize the use of HPLC-UV, TLC and TD-MS to screen phthalates in polymers.

MS screening test methods and procedures for phthalates in polymers, etc.

--- Part 4: Determination of mercury in polymers, metals and electronic components by CV-AAS, CV-AFS, ICP-OES and ICP-MS. Purpose Aims to standardize the methods and procedures for determining the mercury content in electrical and electronic products.

--- Part 5: Determination of cadmium, lead, chromium and metals in polymers and electronic components by AAS, AFS, ICP-OES and ICP-MS Cadmium and lead content. The purpose is to standardize the methods and procedures for determining the content of cadmium, lead and chromium in electronic and electrical products.

--- Part 6: Determination of polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography-mass spectrometry (GC-MS).

Methods and procedures for the determination of polybrominated biphenyls and polybrominated diphenyl ethers in polymers of electrical and electronic products using GC-MS, etc.