

ICS 31.020
CCS L 10



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

GB/T 39560.6-2020

**Determination of certain substances in electrical and electronic products - Part 6:
Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by
gas chromatography-mass spectrometry(GC-MS)**

Issued on: December 14, 2020

Implemented on: July 1, 2021

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

GB/T 39560 "Determination of Certain Substances in Electrical and Electronic Products" is currently divided into the following parts:

---Part 1: Introduction and overview;

---Part 2: Disassembly, disassembly and mechanical sample preparation;

---Part 3-1: Screening of lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry;

---Part 4: CV-AAS, CV-AFS, ICP-OES and ICP-MS determination of mercury in polymers, metals and electronic parts;

---Part 5: AAS, AFS, ICP-OES and ICP-MS determination of cadmium, lead and chromium in polymers and electronic parts and metals

Cadmium and lead;

---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 in colorless and colored anticorrosive coatings on metals by hexavalent chromium colorimetry [Cr(VI)];

---Part 7-2: Determination of hexavalent chromium in polymers and electronic parts by hexavalent chromium colorimetry [Cr(VI)];

---Part 8: Gas Chromatography-Mass Spectrometer (GC-MS) and Gas Chromatography-Mass Spectrometer (Py/T D-GC-

MS) Determination of phthalates in polymers:

This part is Part 6 of GB/T 39560:

This section was drafted in accordance with the rules given in GB/T 1:1-2009:

The translation method used in this part is equivalent to IEC 62321-6:2015 "Determination of Certain Substances in Electrical Products Part 6: Gas Color

Spectroscopy-mass spectrometer (GC-MS) determination of polybrominated biphenyls and polybrominated diphenyl ethers in polymers":

This section also made the following editorial changes:

---In order to be consistent with my country's existing standard series, the standard name is changed to "Determination of Certain Substances in Electronic and Electrical Products, Part 6

Sub: Gas chromatography-mass spectrometer (GC-MS) determination of polybrominated biphenyls and polybrominated diphenyl ethers in polymers:

This part is proposed and managed by the National Environmental Standardization Technical Committee of Electrical and Electronic Products and Systems (SAC/TC297):

Drafting organizations of this section: China Electronics Standardization Institute, Shenzhen Saixi Information Technology Co., Ltd., Lanzhou Beikewetuo Technology Co., Ltd:

Co., Ltd., Shanghai Huatest Pinbiao Testing Technology Co., Ltd., China Household Electrical Appliances Research Institute, Guangdong Institute of Electronics and Electrical Appliances, Shandong Province

Quality Inspection Research Institute, Hisense Video Technology Co., Ltd., Shenzhen Xinyuhuan Standard Technology Co., Ltd., Shimadzu Enterprise Management (Chinese China) Co., Ltd., Thermo Fisher Scientific (China) Co., Ltd., Zhejiang Qixing Electronics Co., Ltd., China Quality Certification Center South China

Laboratory, Ningbo Institute of Inspection and Quarantine Science and Technology, China

Academy of Information and Communications Technology, Guangzhou Customs Technology Center, Ministry of Industry and Information Technology

Five Research Institutes, ZTE Corporation, Belimo Automatic Control Equipment (Shanghai) Co., Ltd., Weikai Testing Technology Co., Ltd:

1 Scope

This part of GB/T 39560 specifies the determination of polybrominated biphenyls (PBB) and diphenyl ethers in polymers of electronic and electrical products

(PBDE) one technical specification and two informative appendices:

The gas chromatography-mass spectrometry (GC-MS) test method is suitable for the determination of monobromo to decabromodiphenyl (PBB) and monobromo to decabromodiphenyl ether

(PBDE):

Appendix A and Appendix C are respectively ion attachment mass spectrometry (IAMS)-direct injection probe (DIP) combined method and high performance liquid chromatography-

Photodiode array or ultraviolet detector (HPLC-PDA/UV) method: These techniques can be used as rapid qualitative or semi-quantitative tests, but will

Subject to interference or restrictions on the number and types of polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) compounds:

Ion Adhesion Mass Spectrometry (IAMS) technology is limited to the determination of decabromodiphenyl and decabromodiphenyl ether, octabromodiphenyl ether and pentabromodiphenyl ether resistance:

Industrial mixture of fuels: This method has not been evaluated for the determination of other polybrominated biphenyls or polybrominated diphenyl ethers:

High performance liquid chromatography technology is limited to the determination of decabromodiphenyl ether, octabromodiphenyl ether, decabromodiphenyl and octabromodiphenyl industrial flame retardant mixtures:

This method has not been evaluated for the determination of other polybrominated biphenyls or polybrominated diphenyl ethers:

In this section, the content of a single PBDE is 20 mg/kg~2000 mg/kg and the total PBDE content is

1300mg/kg~5000mg/kg blend of high impact polystyrene (PS-HI) and polycarbonate/acrylonitrile butadiene styrene

(PC/ABS) has been evaluated, as described in Appendix F: This method is suitable for other types of polymers, PBBs or other PBDE compounds or containing

No specific assessment has been made for the amount outside the above range:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this article

Pieces: For undated references, the latest version (including all amendments) applies to this document:

GB/T 26125-2011 Six restricted substances in electrical and electronic products (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers)

Determination (IEC 62321:20081), IDT)

1) IEC 62321:2008 was abolished on August 23, 2018:

GB/T 39560:1-2020 Determination of certain substances in electrical and electronic products Part 1: Introduction and overview (IEC 62321-1:

2013, IDT)

GB/T 39560:2-2020 Determination of Certain Substances in Electrical and Electronic Products Part 2: Disassembly, Disassembly and Mechanical Sample Preparation

(IEC 62321-2:2013, IDT)