



IEC/PAS 62596

Edition 1.0 2009-01

PUBLICLY AVAILABLE SPECIFICATION

PRE-STANDARD

**Electrotechnical products – Determination of restricted substances – Sampling
procedure – Guidelines**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE **XA**

ICS13.020, 43.040.10

ISBN 2-8318-1019-4

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and abbreviations	6
3.1 Terms and definitions	6
3.2 Abbreviations	8
4 Introduction to sampling	9
4.1 Introductory remark	9
4.2 Requirements and concerns for restricted substances	9
4.3 Complexity of electrotechnical products and related challenges	10
4.4 Strategies for sampling	11
5 Sampling	13
5.1 Introductory remark	13
5.2 Partial disassembly	13
5.2.1 Example 1: Cell phone type A – Disassembly without tools	14
5.2.2 Example 2: Cell phone type B – Partial disassembly	15
5.3 Complete disassembly.....	16
5.4 Partial disjointment.....	18
5.4.1 Introductory remark	18
5.5 Complete disjointment.....	20
5.5.1 Introductory remark	20
5.5.2 Typical examples of disjointment at the component level	20
5.5.3 Examples of disjointment at the base materials level – Disjointment of integrated circuit (IC) chips	22
5.6 Considerations of sampling and disjointment	25
5.6.1 Introductory remark	25
5.6.2 Sample size required	25
5.6.3 Sample size v. detection limit	26
5.6.4 Composite testing of disjointable samples	27
5.6.5 Non-uniform “homogeneous materials”	28
5.6.6 Determination of sampling position of homogeneous materials	29
6 Conclusions and recommendations	29
Annex A (informative) Examples of procedures for sampling and disjointment	30
Annex B (informative) Probability of presence of restricted substances	40
Annex C (informative) Composite testing and sampling.....	42
Annex D (informative) Tools used in sampling	44
Annex E (informative) Use of XRF screening techniques in sampling	45
Bibliography.....	54
Figure 1 – Generic iterative procedure for sampling	11
Figure 2 – Cell phone with battery charger and camera lens cap.....	14
Figure 3 – Cell Phone with battery and back cover removed	15
Figure 4 – Partial disassembly of a cell phone (type B) into its major components	16

Figure 5 – Complete disassembly of the key pad	17
Figure 6 – Complete disassembly of the bottom housing.....	17
Figure 7 – Complete disassembly of the other housing/frame	18
Figure 8 – Components of the TFT display of the cell phone after partial disjointment.....	19
Figure 9 – Components of the main PWB of the cell phone after partial disjointment	19
Figure 10 – Disjointment of lead frame component.....	22
Figure 11 – BGA package prior to disjointment	23
Figure 12 – BGA package disjointed by the hand removal procedure	23
Figure 13 – Solder ball material collected from BGA using a hand removal procedure	24
Figure 14 – BGA solder ball removal using the ball shear procedure.....	24
Figure 15 – Cross-section of a 900 µm wide lead oxide-based resistor (SMD)	28
Figure A.1 – Example of methodology for sampling and disjointment	31
Figure A.2 – Methodology for sampling and disjointment.....	32
Figure A.3 – Sampling of DVD player	33
Figure A.4 – Sampling of CRT	34
Figure A.5 – Sampling of LCD TV	35
Figure A.6 – Sampling of PDA/phone	36
Figure A.7 – Sampling of desk fan	37
Figure A.8 – Components – Example 1 – thick film resistor	38
Figure D.1 – Hot gas gun for removing the electronic components	44
Figure D.2 – Vacuum pin to remove the target electronic devices	44
Figure E.1 – AC power cord, X-ray spectra of sampled sections	47
Figure E.2 – RS232 cable and its X-ray spectra	48
Figure E.3 – Cell phone charger shown partially disassembled.	48
Figure E.4 – PWB and cable of cell phone charger	49
Figure E.5 – Spots from 1,27 mm and 0,3 mm collimators.....	50
Figure E.6 – Examples of substance mapping on PWBs	52
Figure E.7 – SEM-EDX image of Pb free solder with small intrusions of Pb (size = 30 µm).....	53
Table 1 – Possible restricted or screening substances from a cell phone	15
Table 2 – Possible restricted substances in major components of the cell phone	16
Table 3 – Examples of disjointment for typical small electronic components	21
Table 4 – Minimum number of lead frame samples required for analytical testing	26
Table 5 – Levels of a restricted substance in a composite sample	27
Table B.1 – Probability of presence of restricted substances in materials and components used in electrotechnical products	40
Table C.1 – Calculated maximum concentration for a composite sample based on detection limit	43
Table C.2 – Required detection limit for a composite sample based on the maximum allowable concentration	43
Table E.1 – Selection of samples for analysis of AC power cord	46
Table E.2 – Selection of samples (testing locations) for analysis after visual inspection – Cell phone charger.....	49
Table E.3 – Results of XRF analysis at spots 1 and 2 as shown in Figure E.6.....	52

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROTECHNICAL PRODUCTS – DETERMINATION OF RESTRICTED SUBSTANCES – SAMPLING PROCEDURE – GUIDELINES

FOREWORD

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IEC-PAS 62596 has been processed by IEC technical committee 111: Environmental standardization for electrotechnical products and systems.

The text of this PAS is based on the following document:

This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document

Draft PAS	Report on voting
111/112/PAS	111/126/RVD

Following publication of this PAS, which is a pre-standard publication, the technical committee or subcommittee concerned may transform it into an International Standard.

This PAS shall remain valid for an initial maximum period of 3 years starting from the publication date. The validity may be extended for a single 3-year period, following which it shall be revised to become another type of normative document, or shall be withdrawn.

INTRODUCTION

In the electrotechnical industry, much emphasis has been placed on minimizing the environmental burden of its products. Waste handling, recycling, chemicals and energy consumption are covered by regulations. Specifically, the use of materials containing lead (Pb), mercury (Hg), cadmium (Cd) and hexavalent chromium (Cr VI), as well as two types of brominated flame retardants (polybrominated biphenyls, PBBs, and polybrominated diphenyl ethers, PBDEs) in electrotechnical equipment is restricted in current and proposed regional legislation.

To demonstrate compliance with these requirements, it may be necessary to analyse electrotechnical products for a variety of reasons:

- to supplement supply chain material declarations (companies may choose to test products directly to determine compliance);
- companies may require their suppliers to perform analysis to support material declarations;
- companies may perform "spot checks" of their suppliers to assess compliance
- enforcement authorities may perform testing as part of their market surveillance activities.

IEC 62321 already provides test methods for the determination of six regulated substances in electrotechnical products. However, the preparatory steps before the analysis are critically important in obtaining accurate, reproducible results. Prior to this PAS, there was virtually no guidance or consensus as to how electrotechnical products should be sampled.

The purpose of this PAS is primarily to complement IEC 62321 by providing agreed guidelines on how electrotechnical products, assemblies and components should be sampled to determine the levels of restricted substances present.

Please note sampling and analytical testing is not the only way to obtain relevant information on the levels of substances in an electrotechnical product or component. Experience and knowledge of the materials used could remove the need for sampling and testing; for example, flame retardants are never used in metals. Furthermore, analytical test reports and material declarations received can be used to demonstrate that the levels of restricted substances are below the required limits.

ELECTROTECHNICAL PRODUCTS – DETERMINATION OF RESTRICTED SUBSTANCES – SAMPLING PROCEDURE – GUIDELINES

1 Scope

This PAS provides general sampling guidelines and strategies of sampling for electrotechnical products, electronic assemblies, electronic components. In order to obtain samples that can be used for analytical testing to determine the levels of restricted substances as described in the test methods of IEC 62321. Restrictions for substances will vary between geographic regions and from time to time. This PAS describes a generic process for the sampling of any substance which could be restricted.

This PAS does not provide:

- Full guidance on each and every product that could be classified as electrotechnical equipment. Since there is a huge variety of electrotechnical components, with various structures and processes, along with the continuous innovations in the industry, it is unrealistic to attempt to provide procedures for the disjointment of every type of component.
- Analysis procedures to measure the levels of restricted substances. This is covered by other standards (for example the future IEC 62321), which are referred to as the "test standard" in this PAS.
- Guidelines for assessment of compliance.
- Guidance regarding other routes to gather additional information on restricted substances in a product, although the information collected has relevance to the sampling strategies in this PAS.
- Sampling procedures for packaging and packaging materials.
- Safe disassembly and mechanical disjointment instructions related to electrotechnical products (e.g. Hg containing switches) and the recycling industry (e.g. how to handle CRTs or the safe removal of batteries).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62321, *Electrotechnical products – Determination of levels of six restricted substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)*