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# PUBLICLY AVAILABLE SPECIFICATION

## PRE-STANDARD

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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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# CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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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 |

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# 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)*