# RoHS Directive Spectrometer



## Overview

Restriction on the use of certain hazardous substances in electrical. What Is The Aim of The Directive?

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## Key Takeaways

RoHS spectrometers, primarily X-ray fluorescence (XRF) analyzers, are used to screen electronic and electrical equipment for restricted hazardous substances to ensure compliance with EU RoHS regulations. Overview of RoHS DirectiveThe RoHS Directive restricts the use of ten hazardous substances in electrical and electronic equipment (EEE), including lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (CrVI), polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), and four phthalates: DEHP, BBP, DBP, and DIBP. The directive aims to protect human health and the environment by limiting toxic materials in electronics and promoting recyclability.

RoHS compliance is mandatory for all EEE sold in the EU, and similar regulations exist globally, including Chinese RoHS, Japanese JIS C 0950, and Korean RoHS. Types of Spectrometers for RoHS TestingX-ray Fluorescence (XRF) SpectrometersXRF analyzers are the most common instruments for RoHS compliance screening. They determine the elemental composition of materials quickly and non-destructively, making them ideal for testing metals, plastics, and electronic components.

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Key features include: Portable and benchtop options: Handheld devices like the Vanta or X-MET8000 allow on-site testing, while benchtop analyzers provide higher precision for laboratory use. Detection of heavy metals and bromine: XRF can screen for Pb, Cd, Hg, Cr, and Br according to IEC 62321 standards. Rapid results: Measurements can be completed in seconds to minutes, enabling fast compliance checks.

Automatic corrections: Advanced devices, such as the ElvaX RoHS analyzer, adjust for material thickness and chlorine content in plastics to improve accuracy.

### Mass Spectrometry

For substances not detectable by XRF, such as phthalates (DEHP, BBP, DBP, DIBP), thermal desorption mass spectrometry or other laboratory-based methods are used. These instruments provide molecular-level analysis and are essential for confirming compliance when XRF results are inconclusive.

### Compliance Workflow

Screening: Use XRF to quickly identify the presence of restricted elements. Classification: Samples are categorized as compliant, inconclusive, or non-compliant based on concentration thresholds (e.g.,

## Article Content

Restriction on the use of certain hazardous substances in electrical ...

What Is The Aim of The Directive?Key PointsFrom When Does The Directive Apply?BackgroundMain DocumentIt strengthens existing rules on the use of hazardous substances, such as lead, mercury and cadmium, in electrical and electronic equipment (EEE) to protect human health and the environment, in particular by enabling environmentally sound recovery and waste treatment of EEE.See more on eur-lex ropa SHIMADZU CORPORATION

EDX-LE - SHIMADZU CORPORATION

EDX-LE is an X-ray fluorescence spectrometer designed specifically for screening elements regulated by RoHS/ELV directives. The model uses a detector (Si-PIN semiconductor detector) that does not

RoHS compliance and halogen screening with handheld XRF analysis

Compliance with RoHS regulations (2011/61/EU) is achieved when every homogeneous part of a product contains less than 100 ppm Cd and less than 1000 ppm Pb, Hg, Cr (VI), PBB, and PBDE. X

RoHS WEEE Analysis | SPECTRO Analytical Instruments

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Discover SPECTRO''s advanced spectrometers tailored for precise elemental analysis in RoHS and WEEE applications, ensuring regulatory compliance and accuracy.

ElvaX RoHS

Mini laboratory for high-precision analysis in accordance with the RoHS directive The ElvaX RoHS analyzer is specifically designed to test consumer products for compliance with the RoHS directive.

Analyzers for hazardous substances RoHS screening simplified

Our range of analyzers for hazardous substance detection are designed to meet current directives such as RoHS, WEEE, ELV, EN71 and halogen-free, and have the flexibility to adapt to new directives as

RoHS Compliance X-ray Fluorescence (XRF) Spectrometer QSRoHS

In compliance with the European Union''s RoHS directive, QSRoHS series of X-ray fluorescence (XRF) spectrometers detects harmful substances in products to ensure RoHS conformity.

EDX1800B RoHS X-ray Fluorescence Spectrometer

EDX1800B RoHS X-ray Fluorescence Spectrometer EDX1800B X-Ray Fluorescence Spectrometer is specifically designed for RoHS analysis and quality control.

RoHS Testing Equipment

LISUN''s Energy Dispersive X-ray Fluorescence Spectroscopy (EDXRF) can do Restriction of Hazardous Substances (RoHS) 1.0 Directive Testing, Elements Analysis from 16-S to 92-U, Coating and Plating

EVDENT Vanta Handheld Energy Dispersive X-Ray Fluorescence

Overview The EVDENT Vanta Handheld ED-XRF Spectrometer is a field-deployable, laboratory-grade analytical instrument engineered for rapid, non-destructive elemental quantification in precious

EU comprehensive updates to lead exemptions under RoHS directive

The EU issues updated lead exemptions under the RoHS directive, refining conditions and timelines to ensure safer electronics and tighter compliance.

Spectrometer XRF EDX1800B

XRF spectrometer EDX1800B is X-ray fluorescence analyzer designed for analysis of compliance with the RoHS / WEEE directive. Measurements are fast and fully non-destructive, so the device is

RoHS Guide

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The compliance stack Modern compliance spans three interconnected layers: Product Layer - Covers RoHS, REACH, WEEE, Battery, and related directives that limit hazardous substances in finished

Evident (formerly Olympus) Vanta ROHS Handheld Energy Dispersive

Overview The Evident (formerly Olympus) Vanta ROHS Handheld Energy Dispersive X-Ray Fluorescence (ED-XRF) Spectrometer is an industrial-grade, field-deployable analytical instrument

Elite XAD Series Energy Dispersive X-Ray Fluorescence Spectrometer ...

It complies with ISO 3497 (metallic coatings – measurement of coating thickness – X-ray spectrometric methods), ASTM B568 (standard test method for measurement of coating thicknesses by X-ray

Restriction of the use of certain hazardous substances (RoHS)

The references published under Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment are found in in the Commission

RoHS Testing Using XRF Analyzers

RoHS Testing Methods Robust testing methods and clear output documents are critical to ensuring RoHS compliance. For manufacturers, importers, and distributors, testing verifies compliance, while

RoHS Testing with XRay Fluorescence (XRF) Analyzers

XRF analyzers provide a non-destructive approach to RoHS testing of electronics and other goods. Review Hitachi XRF and used analyzer options for RoHS testing.

Analyzers for hazardous substances RoHS screening simplified

HM1000A: Fast and Simple Screening of Phthalates for RoHS 2 Compliance This thermal desorption mass spectrometer helps you meet the latest RoHS directive for phthalates by giving you a first-pass

Related Video Reference

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