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EU RoHS Exemptions Revision

*A Foresite White Paper Summarizing the Revisions to the EU
RoHS Directive's Impact on Industry*

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INTRODUCTION

Environmental laws in the late 20th and early 21th century have evolved into a global requirement for market access. This new environmental movement has been marked by the emergence of regulations designed to force the producers and sellers of goods to identify the substances contained within their products. The driving force behind this proliferation of *Substance Control Directives* has been a growing governmental and public awareness concern over the impacts companies and the products they place on international markets have on human health and the environment. The concurrent globalization of the market has placed increased costs and responsibilities on producing/importing companies, as local legislatures have adopted diverse compliance standards.

One of the most onerous international environmental laws has been European Union Directive 2002/95/EC, Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment¹ (EU RoHS). Under EU RoHS, producers of electrical and electronic equipment must ensure that their products are in compliance with the legislative requirements that restrict the use of certain substances within the product (i.e. lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls, and polybrominated diphenyl ethers).

The core elements to compliance with EU RoHS are: (i) the ability to evaluate the precise concentrations, or document the absence, of the six RoHS restricted substances of concern within products and (ii) the ability to cite applicable exemptions for the required uses of these substances. This necessitates an understanding of the applicable exemptions included in the Annex to the Directive as well as business strategies and systems to secure the best commercial advantages from this knowledge.

THE EU ROHS LEGISLATION

A. Regulatory Background

EU RoHS requires Member States to ensure that new electrical and electronic equipment placed on the European Union Market from 1 July 2006, does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) above 0.1% (0.01% for cadmium) by weight in homogenous materials² (referred to in this document as RoHS thresholds), unless the application was exempted in the Annex to the Directive. The regulations implementing this legislation at Member State level requires producers to retain data demonstrating compliance with this requirement. Products not in compliance may not be placed on the European Union Market.

Article 5(1)(b) of EU RoHS allows materials and components to be exempted where alternatives pose a greater negative health or environmental impact or where it is technically impractical to substitute the substances. Pursuant to the regulation, the exemptions must be reviewed at least every four years and may be deleted from the Annex if suitable alternatives become available following public consultation.

Exemptions may be added to the Annex in instances where the requirements of Article 5(1)(b) applies. In practice, the European Commission receives requests for exemptions from producers which are then evaluated by independent consultants as part of a technical

¹ http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm

² EUR. COMM'N DEC. 2005/618/EC (established the maximum concentration values for these substances amending Directive 2002/95/EC).

assistance contract. This includes a public consultation and summary report. The report specifies the proposed wording for an exemption, if an exemption is deemed appropriate, and may also include a recommended expiry date. An expiry date (“sunset date”) is the date when it is determined that suitable alternatives are available, which render the exemption for a given use unnecessary. Legally, the exemptions become effective on the date they are published in the *Official Journal of the European Union* and are ineffective as of the date of expiry or deletion from the Annex.

B. Adapting Exemptions to Scientific and Technical Progress

EU RoHS as published in the *Official Journal of the European Union* on 13 February 2003 listed nine exemptions.³ The legislation was always intended to promote a progressive elimination of the identified RoHS restricted substances from the European market. However, the drafters of the legislation took into account the complexity of the requirements related to the absence of the technology required to adequately substitute the use of the identified substances in many cases. Accordingly, to adequately manage the change process without precluding valuable commodities from accessing the European Community, the drafters implemented a change process whereby exemptions would be amended based upon scientific and technical progress.

Since the implementation of the legislation, there have been many changes to this list of exemptions. The latest Annex has exemption numbers up to 39. Many exemptions have also expired, in accordance with expiry dates set by the legislation; see for example exemptions 22⁴ and 35⁵ which expired on 31 December 2009 and 28⁶ which expired on 1 July 2007. Additionally, exemptions may be annulled following legal rulings that the exemption was unnecessary or unjustified given the availability of substitutes; for example, exemption 9a. “decaBDE in polymeric applications” was annulled following legal challenge.⁷

The present RoHS Recast and exemption revision will continue this profound movement toward complete market preclusion for the identified hazardous substances covered by the RoHS directive. Once the RoHS Recast is implemented, the scope of RoHS will be expanded to include *all electrical and electronic equipment*,⁸ and the introduction of medical devices⁹ and monitoring and control equipment.¹⁰

C. An Effective Exemption Management System

Any business selling products or components for products falling within the scope of RoHS will want to have a system in place to monitor changes to RoHS exemptions and ensure that their existing product line and future product developments address compliance issues. This necessitates the combination of a regulatory intelligence function and data storage and reporting mechanisms together with successful compliance strategies and processes.

³ Exemptions were numbered 1 – 9 although exemption 2 and 7 included multiple elements.

⁴ Exemption 22. Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communication systems until 31 December 2009.

⁵ Exemption 35. Cadmium in photoresistors for optocouplers applied in professional audio equipment until 31 December 2009.

⁶ Exemption 28. Hexavalent chromium in corrosion preventive coatings of unpainted metal sheetings and fasteners used for corrosion protection and Electromagnetic Interference Shielding in equipment falling under category three of Directive 2002/96/EC (IT and telecommunications equipment). Exemption was granted until 1 July 2007.

⁷ *EUR. PARL. Et.al. v. EUR. COMM’N*, 2008 E.C.J. C 116/2, available at (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:116:0002:0003:EN:PDF>).

⁸ Proposed Category 11 of RoHS.

⁹ Category 8 of RoHS.

¹⁰ Category 9 of RoHS.

An effective exemption management system will gather data on applicable components from several sources, provide a precise documented audit trail, and identify the existence of any exceeded RoHS thresholds. If thresholds are exceeded, then an exemption management system must be able to document which exemptions have been claimed and link the necessary documents, relied upon in making the determination of compliance, to the parts of concern. Appropriate reviews and audits must be made to ensure that the claimed exemptions are current. The practical implication of outsourced production; contract manufacturing; and the sheer number of products, components, and alternative suppliers (multi-sourced components) often require a web-based software application that can facilitate data collection and document storage.



A RoHS system of record must also be capable of alerting suppliers of changes to the legislation, requesting updated declarations of compliance and be capable of producing *ad hoc* reports that will identify data gaps or non-compliant components and suppliers. The business must also have a process in place to address these issues through additional data collection efforts, sourcing alternatives and/or applying for exemptions. Systems of this nature will, at a minimum, be capable of automating initial audits of the received documents and alert system administrators of errors as they arise using a structured data flow management process.

CORPORATE STRATEGIES FOR COMPLYING WITH ROHS

Corporate Strategies

A. Responding to Material Disclosure Requests

Companies selling internationally or to international companies will likely have encountered material declaration requests from customers. These forms come in variable formats and must be completed and returned within specified timeframes. As a result of the new obligations under the RoHS Recast, the number of these substance level declarations will inevitably increase.

B. Claiming Exemptions

A fundamental aspect of the revisions to the RoHS regulation is setting a timetable to sunset (phase out) exemptions. To comply with this regulatory objective, companies must be capable of cross referencing their respective databases of declarations and identifying exemptions that have previously been claimed. The complexity of this task expands as companies must then be capable of setting and monitoring expiration dates for the exemptions. Furthermore, a successful regulatory compliance program must ensure that products distributed to the European Union or to customers selling to the European Union do not claim an exemption that is no longer valid.

| 0 -- None |
|---|
| 1 1 - Mercury compact fluorescent lamps not exceeding 5 mg per lan |
| 2 2a - Mercury halophosphate straight fluorescent lamps for general |
| 3 2b - Mercury triphosphate straight fluorescent lamps normal lifetim |
| 4 2c - Mercury triphosphate straight fluorescent lamps long lifetime E |
| 5 3 - Mercury straight fluorescent lamps for special purposes |
| 6 4 - Mercury Other Lamp types |
| 7 5 - Lead glass of cathode ray tubes, electronic components and flu |
| 8 6a - Lead Alloying Element in Steel up to 0.35% |
| 9 6b - Lead Alloying Element in Aluminium up to 0.4% |
| 10 6c - Lead Alloying Element in Copper up to 4% |
| 11 7a - Lead high melting temperature type solders (i.e. lead-based a |
| 12 7b - Lead solders for servers, storage and storage array systems, |
| 14 7c - Lead in electronic ceramic parts (e.g. piezoelectronic devices) |

Pre-Revision RoHS Exemptions

C. Risk Management

There are three principal obligations that are emerging from the RoHS Exemption Revision. Those obligations include:

- (1) A need to monitor and plan for exemption expiry (sunset) dates.
- (2) The requirement to identify high risk suppliers for RoHS non-compliance and take appropriate action.
- (3) The need to discontinue distribution of non-compliant products to the EU.

Modern supply chains are complex, often involving systematic outsourcing and staged product manufacturing. In this context, environmental compliance can prove challenging, as lengthy, open supply chain communication channels must be leveraged and remain open to ensure compliance programs can be effectively implemented. Additionally, RoHS legislation may have jurisdictional variations that place the burden of compliance on different parties within the supply chain. Accordingly, adopting a structured, well defined process and audit trail, are essential elements underpinning regulatory compliance.

| | |
|--------------------------|--|
| <input type="checkbox"/> | 1(a) Mercury in single capped (compact) fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 1(b) Mercury in single capped (compact) fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 1(c) Mercury in single capped (compact) fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 1(d) Mercury in single capped (compact) fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 1(e) Mercury in single capped (compact) fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 1(f) Mercury in single capped (compact) fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 2(a)(1) Mercury in double-capped linear fluorescent lamps for |
| <input type="checkbox"/> | 2(a)(2) Mercury in double-capped linear fluorescent lamps for |
| <input type="checkbox"/> | 2(a)(3) Mercury in double-capped linear fluorescent lamps for |
| <input type="checkbox"/> | 2(a)(4) Mercury in double-capped linear fluorescent lamps for |
| <input type="checkbox"/> | 2(a)(5) Mercury in double-capped linear fluorescent lamps for |
| <input type="checkbox"/> | 2(b)(1) Mercury in other fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 2(b)(2) Mercury in other fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 2(b)(3) Mercury in other fluorescent lamps not exceeding (per |
| <input type="checkbox"/> | 2(b)(4) Mercury in other fluorescent lamps not exceeding (per |

Revised RoHS Exemptions

D. The Importance of a Flexible Information Management System

The centralization of auditable substance control compliance data in a flexible information management system provides the greatest opportunity to construct an easily accessible compliance and quality platform that can provide your organization with a cost-savings tool and a competitive advantage related to the onerous legal requirements of RoHS. The ability to track, monitor and plan for expiring exemptions will be vital to continued compliance and market access to the European market. If you would like to have access to a more detailed analysis of the individual exemptions, Foresite has prepared an analytical guide entitled: *THE EU ROHS EXEMPTION REVISION GUIDE* that itemizes each individual exemption, provides context related to the state of the exemptions, and predicts future impacts of pending revisions to RoHS. For more information, please contact Foresite's Manager of Environmental Compliance Services at travis.miller@foresitesystems.com.

ABOUT FORESITE

Foresite Systems, Ltd. has been designing systems to support global environmental management for nearly two decades. The resulting wealth of experience, innovative spirit, and international presence has provided Foresite with the ability to remain a best-in-class provider of environmental compliance engines for over 100 of the best and most recognizable blue chip companies in the world. The flexibility of the Global Environmental Management Systems (GEMS) and Foresite's pragmatic approach to compliance has made our RoHS module the premiere tool for our clients' implementation of effective and sustainable RoHS compliance strategies.

About the Authors

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