

Implementing RoHS in the U.K.



By Steven Andrews

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Discussions over exemptions continue, but RoHS will take effect July 1.

The Restriction on the Use of Hazardous Substances directive, adopted by the European Union in 2003, bans the sale of new electrical and electronic equipment in the EU by July 1, 2006, if those products contain more than the permitted levels of lead, cadmium, mercury, hexavalent chromium, or polybrominated biphenyl or polybrominated diphenyl ether flame-retardants. The legislation applies across the EU; however, each member state must enact its own national version of the law. The legal base of the RoHS directive is Article 95 of the EU Treaty, which means that the legislation introduced in each member state will have the same impact and effect.

In the U.K., the RoHS directive will be implemented through The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2005, introduced in Parliament last October. The regulations will be enforced by the National Weights and Measurements Laboratory. This article reviews some of the key issues discussed in development of this legislation, the U.K.'s approach on these issues, and our efforts to harmonize legislation among the member states.

The RoHS directive applies to EEE falling into eight of the 10 broad product categories listed in Annex 1A of the WEEE directive¹. These are: large household appliances; small household appliances; IT and telecommunication equipment; consumer equipment; lighting equipment; electrical and electronic tools (with the exception of large-scale industrial tools); toys, leisure and sports equipment; and automatic dispensers. It also covers electric light bulbs and household lighting equipment. The two categories currently excluded from the RoHS Directive product scope are medical devices and monitoring and control instruments, although there is provision for the Commission to include these categories at some future point.

A general, but important, point to note is that what falls within the scope of the WEEE directive (and, therefore, the RoHS directive) is a matter of interpretation and only the European Court of Justice can give an authoritative ruling. In the absence of a definitive legal ruling, member states must interpret the scope of provisions in order to implement the directive.

The U.K. has promoted discussions among member states to develop generic criteria to help stakeholders and national enforcement authorities determine specifically what products are covered with the aim of ensuring a harmonized approach across the EC. The outcome of these discussions is now reflected in both the European Commission's FAQ document² and the DTI's own guidance notes, published in November³. (See the online version of this article for further discussion of how to determine whether products are within the scope of RoHS.)

For the vast majority of products, the determination of whether they must meet the RoHS directive's substance restrictions is reasonably straightforward. However, for a significant minority of products (particularly in specialized or industrial sectors) there may be considerable uncertainty. **Figure 1** provides an example of a decision tree that can be used by producers to help determine whether their products come within the scope of the RoHS directive. It may be advisable to seek an independent legal opinion to help come to a final decision.

FIGURE 1: Product producer decision tree. ([Click here to open 68KB PDF.](#))

The following criteria can be used to help assess "gray area" products. The products discussed below are outside the scope of the directive and, therefore, also not covered by the U.K.'s regulations. These guidelines represent DTI's view and, as with all EC Directives, a definitive view may only be obtained through the courts. Producers must rely on their own legal advice on all questions of scope.

EEE intended to protect national security or to be used for military purposes. The WEEE directive states that equipment connected with national security or military purposes is excluded from the scope of the directive. The RoHS directive does not provide for a similar exemption, but the Department considers that the RoHS directive draws its coverage from the WEEE directive so the exemption will apply equally to products covered by RoHS. It should be noted, however, that this derogation does not apply to dual-purpose products that are used for both military and civilian purposes.

Products for which electricity is not the main power source. Many products contain electrical and electronics components, either for additional functionality or as peripheral parts (e.g., a combustion engine with an electronic ignition). The definition of EEE in the regulations extends only to those products that are dependent on electric currents or electromagnetic fields to work properly, such that when the electric current is switched off, the product cannot fulfill its primary function.

Products where the electrical or electronic components are not needed to fulfill the primary function. This category includes products that contain electrical or electronic elements that add functionality, but that can still fulfill their primary function without the electronic components. This would include, for example, musical greetings cards or soft toys that have electronics components.

Electrical and electronics equipment that is part of another type of equipment not within the scope of the directive. The WEEE directive excludes EEE that is part of another type of equipment that does not fall within the scope of the directive. Again, since EEE is defined in identical terms under RoHS, the Department and the Commission's Legal Services consider that this exclusion extends to EEE under the RoHS directive and, consequently, to the RoHS regulations. Examples of such equipment would be lighting or entertainment equipment for use in vehicles, trains or aircraft.

Batteries. The RoHS directive restricts the use of the named hazardous substances in new electrical and electronic equipment, but does not apply to batteries. This includes batteries that are permanently fixed into the product, and disposable batteries.

Several Exemptions

There are several exemptions listed in the annex of the RoHS directive⁴, and additional exemptions were approved in October. Exemptions include:

Large-scale stationary industrial tools consisting of a combination of equipment, systems, products, and/or components, each of which is designed, manufactured and intended to be used only in fixed industrial applications.

Spare parts for the repair of EEE placed on the market before July 1, 2006. Following discussions in the Technical Adaptation Committee, the European Commission and member states have broadened this exemption to include parts that expand the capacity of and upgrade EEE placed on the market before that date, provided the EEE concerned is not put on the market as a new product.

The reuse of EEE placed on the EU market before July 1, 2006.

Specific applications of lead, mercury, cadmium, hexavalent chromium, PBB and PBDE as set out in Schedule 2 of the Regulations.

The original exemptions outlined in the annex to RoHS were amended by two Commission decisions published in October. Additional exemptions include, among other things, Deca BDE in polymeric applications and lead in PbBr bearing shells and bushes. The U.K. RoHS regulations will be amended to reflect these changes shortly.

Other exemption requests are still under consideration by the EC and are likely to be put before member states for votes, again, in the near future. The EC has published a fourth stakeholder consultation regarding several proposed amendments to the RoHS Directive annex⁵. The consultation period ends Feb. 10.

The RoHS directive states that member states must ensure that new EEE put on the market after July 1, 2006, does not contain the six restricted substances. Although the directive does not define "put on the market," the EC has told member states to interpret it in the same way as the term "placing on the market," is defined in the Commission's *Guide to the Implementation of Directives Based on the New Approach and the Global Approach* (commonly referred to as the "Blue Book"). This document says that "placing on the market" is the initial action of making a product (including imports) available for the first time on the Community market, with a view to distribution or use in the Community. Therefore, noncompliant inventories that are in the EU and are available for distribution or use prior to July 1, 2006, will be allowed to be sold after that date.

It should be emphasized that the concept of placing on the market refers to each individual product, not to a type of product, and whether it was manufactured as an individual unit or in a series. The transfer takes place either from the manufacturer or the manufacturer's authorized representative in the Community to an importer, a distributor or even the final consumer or user in the Community market.

The product is considered to be transferred either when the physical handover or the transfer of ownership has taken place. This transfer can be for payment or free of charge, and it can be based on any type of legal instrument. Thus, a transfer of a product is considered to have taken place in the circumstances of sale, loan, hire, leasing and gift.

Maximum Concentration Values

For the purposes of the RoHS regulations a maximum concentration value (MCV) of up to 0.1% by weight in homogeneous materials for lead, mercury, hexavalent chromium, PBB and PBDE and of up to 0.01% by weight in homogenous materials for cadmium will continue to be permitted in the manufacture of new EEE. These values were established through the adoption of a Commission Decision on Aug. 18, 2005.

"Homogeneous material" is material "of uniform composition throughout," meaning it cannot be mechanically disjointed into different materials. Examples include individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins, and coatings. The term "mechanically disjointed" means that the materials can, in principle, be separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.

Using these interpretations, a plastic cover would be a homogeneous material if it consisted exclusively of one type of plastic that was not coated with or had attached to it (or inside it) any other kinds of materials. In this case, the MCV of RoHS would apply to the plastic. On the other hand, an electric cable consisting of metal wires surrounded by nonmetallic insulation materials is not homogeneous material because mechanical processes can separate the different materials. In this case, the maximum concentration values of the RoHS regulations would apply to each of the separated materials individually.

No Prescribed Compliance

Producers must demonstrate compliance with the regulations by providing the enforcement authority (on request) with relevant technical documentation of information. The UK intends to accept self-declaration as the basis of the compliance regime. The enforcement authority will carry out market surveillance to detect noncompliant products and may conduct tests for this purpose.

There is no prescribed method to demonstrate compliance, and both materials declarations and component or material analysis are likely to play important roles.

Materials declarations. Producers of EEE should obtain assurances from their suppliers that any materials, components, assemblies or equipment provided do not contain more than the permitted level of any of the six restricted substances. In the U.K., producers are required to keep records for up to four years after a particular EEE product is placed on the market. A variety of materials declarations for suppliers are being developed by industry, and some product manufacturers have already started to publish such data on their Websites.

Materials declaration is an area where standardization will benefit producers and the enforcement authorities. The industry finalized the EIA-JGPSSI Joint Industry Guide to Material Declarations in 2005. That guide provides the list of relevant substances that warrant supply chain disclosure. IPC-1752, *Materials Declaration Management* was, when this article went to press, expected to be released in early 2006. IPC-1752 is a uniform data format for supply chain material content disclosure. As a consensus standard, it is likely to play a key role in the industry's overall strategy for standardization of materials content declarations across the entire supply chain. A uniform data format for exchanging materials composition data may help reduce the cost and complexity of RoHS compliance, while increasing data quality and decreasing response times.

Producer analysis. Producers of EEE to be placed on the U.K. market may wish to undertake (or ask a third party to undertake) their own analysis of the components or materials used in their products. This action may be undertaken either to verify supplier declarations or to

determine the presence of any restricted substances in cases where no declaration is available. It may also be undertaken if there are doubts over the reliability of declarations.

Producers or third parties may employ any suitable analytical technique in order to establish that their products comply with the MCVs of the six restricted substances. The criteria for analysis will depend on the quantity of product put onto the market (less for small producers than for large producers), the relationship with suppliers, the risk of a banned substance being present, and the potential impact of that substance on the environment. Producers must ensure that they understand and take into account any limitations of the analytical technique they use.

Figure 2 is a flow chart that clarifies the compliance process and is intended to help producers determine when analysis of components might be advisable.

FIGURE 2: This flow chart of the compliance process is intended to help producers determine when analysis of components might be advisable. ([Click here to open 48KB PDF.](#))

Enforcement. RoHS compliance in the U.K. will be enforced in a variety of ways, including making test purchases; requesting compliance documentation, inspecting processes and performing analytical tests; and issuing compliance notices requiring certain actions be taken.

In Europe, the U.K. has been very active in attempting to secure the adoption of a common approach. It is hoped that a network of member state enforcement bodies will be established and that common guiding principles will be agreed and adopted in advance of the July 1 deadline.

The EC's RoHS directive has been a reality in Europe since January 2003, and regulations in most EU member states are now final. Discussion on key issues, such as the exemptions, will continue for some time, but the RoHS legislation will come into effect on July 1, both within the U.K. and across the EU.

References

1. WEEE Directive, Jan. 27. 2003, europa.eu.int/comm/environment/waste/weee_index.htm.
2. European Commission, Frequently Asked Questions on the RoHS and WEEE directives, May 2005, europa.eu.int/comm/environment/waste/pdf/faq_weee.pdf.
3. U.K. Department of Trade and Industry, RoHS Regulations Government Guidance Notes, November 2005, dti.gov.uk/sustainability/weee/RoHS_Guidance_November05_Final.pdf.
4. RoHS Directive, europa.eu.int/comm/environment/waste/weee_index.htm.
5. The fourth EC stakeholder consultation on adaptation to scientific and technical progress under Directive 2002/95/EC of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment for the purpose of a possible amendment of the annex; europa.eu.int/comm/environment/waste/rohs_4_consult.htm.

Resources

Transposition of the WEEE and RoHS Directives in other EU Member States, a report undertaken by Perchards for the UK DTI, latest version published November 2005, as part of the Government's response to recommendations in the Better Regulation Task Force Report, "Environmental Regulation: Getting the message across"; dti.gov.uk/sustainability/weee/Perchardsreport_November05.pdf.

U.K. Regulations: *The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2005*; opsi.gov.uk/si/si2005/uksi_20052748_en.pdf.

U.K. Department of Trade and Industry, Sustainable Development and Environment, dti.gov.uk/sustainability/weee/index.htm.

National Weights and Measurements Laboratory's RoHS Website, rohs.gov.uk/Default.aspx.

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