



National Aeronautics and
Space Administration

Principal Center for Regulatory Risk Analysis and Communication

REGULATORY ALERT

European Union–Proposed Rules Changes Waste Electrical and Electric Equipment (WEEE) and Restrictions on Hazardous Substances (RoHS)

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Introduction

On 3 December 2008, the European Union (EU) issued proposals on its [website](#) to revise the Restriction of Hazardous Substances Directive and Waste Electrical and Electronic Equipment Directive.

Background

The RoHS Directive (2002/95/EC) bans certain new electrical and electronic products containing more than the designated maximum allowable levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) from being placed on the EU market. RoHS became effective on 1 July 2006. Manufacturers are required to demonstrate that their products, parts, and components comply with RoHS in order to be distributed and sold in the EU. The maximum concentration values are 0.1 percent by weight in “homogeneous materials” for lead, mercury, hexavalent chromium, PBBs, and BPDEs, and 0.01 percent by weight for cadmium. These limits apply to components within the equipment, unless otherwise exempt.

RoHS is linked closely to the WEEE regulation (2002/96/EC), which sets collection, recycling and recovery targets for electrical goods and is part of a legislative initiative to minimize the disposal of hazardous constituents in electrical waste (e-waste). WEEE applies to a variety of electrical and electronic equipment. Affected categories of electronics include, but are not limited to, information technology (IT) and telecommunications equipment, lighting, electrical and electric tools (excluding industrial tools), monitoring and control instruments, and automatic dispensers.

Summary of the Proposed Amendments

Amendments to RoHS

Proposed changes to RoHS include updating the definitions section, clarifying specific items regulated by the directive, revising the scope and expanding it to add medical devices and

monitoring instruments, and establishing a mechanism for identifying and restricting the use of additional hazardous substances.

Under the proposal, the list of banned substances under RoHS was not changed. Deca-bromodiphenylether was retained on the list, as a PBDE, because the exemption for it (2005/717/EC) was annulled by the European Court of Justice effective 1 July 2008. The following four substances were identified for priority assessment for potential future inclusion in the list of banned substances:

- Hexabromocyclododecane (HBCDD)
- Bis(2-ethylhexyl)phthalate (BEHP)
- Butyl benzyl phthalate (BBP)
- Dibutyl phthalate (DBP)

Amendments to WEEE

Proposed changes to WEEE include clarifying the registration and reporting process for manufacturers of electrical and electronic equipment, transferring specific sections (annexes) of the scope of the Directive to RoHS, clarifying the financial responsibilities for manufacturers, and updating the list of appliances exempt from the Directive.

Despite implementing goals for the collection and recycling of e-waste, only one third of electrical and electronic waste in the EU is reported as appropriately treated and recycled, with the remaining two thirds disposed in landfills. In the proposal, the Commission would set mandatory collection targets equal to 65 percent of the average weight of electrical and electronic equipment placed on the market over the 2 previous years. Targets also would be set for the recovery of medical devices. More ambitious targets are proposed under the new directive for Member States, with higher consumption rates for electrical and electronic equipment.

Potential Impact to NASA Programs

Although RoHS and WEEE directly affect products marketed in EU member states, the restrictions indirectly affect NASA through its supply chain. This fact first became evident with the emergence of lead-free electronics using solders and finishes with a high percentage of tin, which can cause failures of electronic components in space vehicles and other systems. Another risk recognized as related to the EU directives was the obsolescence of most PBDEs, used as flame retardant additives in many types of materials. NASA should note that deca-BDE is no longer exempt from the requirements of the RoHS directive, and this may cause some materials to be reformulated. Because such additives are often present in small quantities and may be incorporated at the sub-tier vendor level, the reformulation may not be apparent to or communicated by suppliers.

It is also important to proactively investigate the potential risk associated with the phaseout of HBCDD, DEHP, BBP, and DBP in electronics and electrical equipment. Should the four substances be included in the RoHS list of banned substances, future impacts to the supply change may be expected.