



**RESTRICTION OF HAZARDOUS SUBSTANCES  
TRUSTED GLOBAL **ROHS SOLUTIONS****

# EU-RoHS DIRECTIVE

## LEGAL SUMMARY

The EU Directive 2002/95/EC Restriction of Hazardous Substances (RoHS) has been in effect since 1 July, 2006.

This directive restricts the use of six hazardous substances in EEE products that are "dependent on electric current or electromagnetic fields for at least one intended function". The new Directive 2011/65/EU, also known as "RoHS II" superseded 2002/95/EC on 2 January, 2013. On 4 June, 2015, four phthalates were added to 2011/65/EU by European Delegated Directive (EU) 2015/863.

## THE "HAZARDOUS" SUBSTANCES

RoHS is often referred to as the lead-free directive, but from 22 July 2019 it restricts the use of ten substances, including other heavy metals, two flame retardants and four phthalates as listed:

- Lead
- Mercury
- Cadmium
- Hexavalent chromium
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ether (PBDE)
- Bis(2-ethylhexyl) phthalate (DEHP)
- Butyl benzyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)

The maximum permitted concentrations are 0.1% or 1,000 ppm (except for cadmium which is limited to 0.01% or 100ppm) by weight of homogenous material. The limits do not apply to the weight of the finished product or even to a component, but to any single homogenous material. For example, the insulation in an electrical cable or the solder on the lead of a component.



## ROHS II

Directive 2002/95/EC was replaced by Directive 2011/65/EU, "RoHS II," as of January 2, 2013. Selected examples of major changes in the new directive are:

- RoHS is now a CE marking directive
- Expanded product scope including medical devices, monitoring and control equipment and other electrical and electronic equipment not covered by any of the other 10 categories
- Seven year maximum validity of exemptions with the possibility of extension
- New "obligations" for importers, manufacturers and distributors
- Manufacturers or their "authorised representative" must submit technical documentation to substantiate compliance upon request of a member state enforcement agency, and retain it for 10 years after a product is placed on the market
- Four phthalates were added to 2011/65/EU and now there are ten hazardous substances listed in ANNEX I of 2011/65/EU

# RoHS IN OTHER REGIONS

Since 2006, other countries have also adopted “RoHS-like” legislation. These include China, India, Japan, South Korea, Vietnam and the states of California and New Jersey in the U.S.

## USA

### CALIFORNIA

“Electronic Waste Recycling Act of 2003 (Senate Bill 20) substance restrictions (EWRA),” otherwise known as California RoHS came into effect on 1 January, 2007. This act prohibits the sale of electronic devices after 1 January, 2007 if the electronic device is prohibited from being sold or offered for sale in the European Union, due to the maximum concentration of heavy metals as defined in Directive 2002/95/EC and subsequent amendments. The scope of this law is much narrower than the EU RoHS. It includes LCDs, CRTs and other similar products and only restricts the same four heavy metals as RoHS: Lead (Pb), Cadmium (Hg), Mercury (Hg), and Hexavalent Chromium (CrVI). EWRA also has a restricted material disclosure requirement.

### NEW JERSEY

New Jersey’s “Electronic Waste Recycling Act” (Senate Bill 2144), came into effect on 1 January, 2011. Similar to that of California, this act prohibits the sale of electronic devices after 1 January, 2011, if the electronic device is prohibited from being sold or offered for sale in the European Union due to the maximum concentration of four heavy metals as defined in Directive 2002/95/EC and subsequent amendments. In addition, this legislation requires TV, computer, and computer monitor manufacturers to pay a fee and submit a plan to the Department of Environmental Protection (DEP) detailing how they will recycle their share of devices.

## CHINA

Following extensive review, the new China RoHS, “Administrative Measure on the Restriction of Hazardous Substances in Electrical and Electronic Products” was announced by China’s Ministry of Industry and Information Technology (MIIT) on 21 January, 2016. This administrative measure will apply from 1 July, 2016 and, at the same time, will supersede the current China RoHS edition of 2006, “Administrative Measure on the Control of Pollution Caused by Electronic Information Products”.

Compared to the current China RoHS, the key adjustment of this new edition is the expansion of the product scope. The current product scope of electronic information products (EIP), will expand to electrical and electronic products (EEP). The definition of EEP is similar to that used in the European RoHS. Therefore, EEP will include products not currently included in the ‘Classification comment on electronic information products’ published in March 2006.

The new China RoHS makes no change to the hazardous substances restricted by its predecessor. They remain:

- Lead and its compounds
- Mercury and its compounds
- Cadmium and its compounds
- Hexavalent chromium compounds
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ether (PBDE)



The restriction of these substances will continue to be implemented in a two-step approach. In step one, all regulated EEP will self-declare information on the restricted substances, according to related standards. In step two, EEP listed in the compliance management inventory must comply with the restriction limits for the substances in accordance with related standards. The inventory of regulated EEP is currently not populated, but will be released in the future.



## INDIA

"E-waste (Management and Handling) Rules 2016," otherwise known as India RoHS is now published and will come into force from the 1 October, 2016.

This rule aims to put into place an effective mechanism to regulate the generation, collection, storage, transportation, import, export, environmentally sound recycling, treatment and disposal of electronic waste (e-waste). Specifically, the legislation includes a chapter on the restriction of hazardous substance (RoHS) in the manufacturing of EEE.

The rule governs information technology and telecommunication equipment, as well as consumer electrical and electronics. However lead acid batteries and radioactive waste are excluded.

## JAPAN

"The Marking of Presence of the Specific Chemical Substances for Electrical and Electronic Equipment" (JIS-C-0950), also known as J-MOSS came into effect on 1 July, 2006 and directs that some electronic products exceeding a specified amount of the nominated toxic substances must carry a warning label. J-MOSS does not restrict or prohibit the use of RoHS hazardous materials, but the passing of this law has spurred Japanese manufacturers to move to a "lead-free" design in accordance with

EU RoHS.

## SOUTH KOREA

"The Act for Resource Recycling of Electrical/Electronic Products and Automobiles," also known as Korean RoHS, came into effect on 1 January, 2008, and has been revised in 2011 to coincide with EU RoHS revisions. It also covers aspects of WEEE and ELV. It is based on a self-declaration system, with no special mark requirements, wither for manufactured before 2008, or to research and development samples.

## VIETNAM

On 10 August, 2011, the Ministry of Trade of the Socialist Republic of Vietnam issued Circular 30/2011/TT-BCT to restrict the same six substances as the EU RoHS directive. The list of applicable products under each category is essentially the same as those under Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). From 1 December, 2012, information on the allowable limits of restricted substances in electrical and electronic products that are manufactured or imported must be disclosed through one of the following:

- Upload on the company's website
- Inclusion in the user guide/ instruction manual
- Information in electronic form (i.e. a CD)
- Printing on the product or packaging

## TO BE CONTINUED...

Every year more countries adopt similar EU RoHS requirements. Many have aligned their restrictions to the EU, such as Ukraine, Serbia and Turkey. There are still more countries and even US states to follow. In addition, electrical and electronics companies should continue monitoring additional chemical restrictions and recycling requirements such as REACH, WEEE, POHS, etc.

# ENVIRONMENTAL PRODUCT SERVICES

## WEEE SERVICES

- Product disassembly and calculation of the recyclability, reuse, and recovery according to the IEC/TR 62635 standard
- Identification of ecodesign recommendations to increase the recyclability and comply with the WEEE directive in the EU
- Creation of depollution/disassembly instructions for recyclers
- Identification of US WEEE producers' responsibilities

## RELATED CHEMICAL TESTING

SGS offers a comprehensive chemical testing package for products and materials covering other regulatory requirements, including REACH SVHCs, PAH, California Proposition 65, Food Contact tests, Toy Standards and EEE industry requirements such as Halogens, BFRs, Phthalates, Antimony, etc.

## REACH SVHC

Substances of Very High Concern (SVHC) are under the regulation of REACH and are planned to have new SVHCs added every 6 months. SGS offers cost-effective SVHC solutions in consulting, screening for identification and target quantification of identified substances.

## LIFECYCLE ASSESSMENT (LCA) & ECODESIGN

SGS conducts LCAs to support clients determine and understand the various impacts of their product (not just carbon footprint) across the whole product life and identify where the greatest impacts and areas for improvement lie. Building on LCA and other metrics, SGS employs the systematic process of Ecodesign to allow clients to incorporate the environmental aspects of a product, as well as stakeholder requirements, into product design and development for improved results.

## WHY SGS

SGS can conduct RoHS testing in over 36 laboratories in over 20 countries worldwide. All SGS labs are ISO17025 accredited.

## SGS ADVANTAGES

- With over 90 years of experience, we have a deep understanding of hazardous substances
- We operate 36 accredited RoHS testing centres worldwide, staffed by over 1,000 RoHS specialists
- Rapid turnaround times
- Value-based pricing
- Technical assistance and key account management solutions

## SGS E&E EXPERTS

- Support you build sustainable and cost effective RoHS compliance strategies
- Perform compliance gap assessments and support you implement industry best practices
- Provide third party verification services
- Support ensure consistent production processes
- Support educate your suppliers, staff and your customers on the risks posed by hazardous substances

## RoHS RELATED SERVICES

- Product Risk Assessments
- Process Gap Analysis and Consulting
- Full Product and Material Testing to IEC 62321 standards
- XRF Screening
- SGS RoHS Certificate of Conformity (CoC)
- Verification Services
- Training

SGS's RoHS solutions can be adapted to meet our customer's needs depending on their size, position in the supply chain, long term strategy and budget.

## CONTACT US

For further information, please contact your local SGS representative or email the global team at [cgnr.global@sgs.com](mailto:cgnr.global@sgs.com)

 Visit SGS's LinkedIn page today and follow us now!

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WHEN YOU NEED TO BE SURE

**SGS**