

FACT SHEET • Restriction of Hazardous Substances - RoHS

The RoHS, or the Restriction of Hazardous Substances directive, limits the use of six specific hazardous materials in the manufacture of various types of electronic equipment sold within the European Union (EU.) The major reason for developing the directive was to enable the easy recycling of discarded electronic equipment and components, thereby reducing the amounts of certain hazardous substances discarded as solid waste. The RoHS was adopted by the European Union in 2003, and was fully implemented by the member countries as of July 1, 2006.

Although the RoHS is often thought of as a directive designed by the EU to reduce or eliminate only lead from a growing solid waste stream, the RoHS actually limits the use of the following six substances during the manufacture and production of electronic equipment: Cadmium, Hexavalent Chromium, Lead, Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ether (PBDE.) The maximum allowable concentration of any of the restricted substances may not exceed 0.1% by weight in any single, homogeneous material contained in the electronic product, except for Cadmium, which may not exceed 0.01%.

Depending upon the type and end use of a particular material or product that has been submitted for analysis, additional testing for parameters such as Polychlorinated biphenyls (PCB,) or Ozone depleting substances may also be warranted. In any case, each individual component or material that comprises the finished product must be tested separately. Depending upon the particular product being assessed, separate samples representing, for instance, the cable insulation, metal fasteners, plastics, switch pieces and so forth may need to be tested. One exception to

the RoHS testing is batteries. Even though lead-acid, mercury and nickel-cadmium batteries routinely found in electronic devices contain at least several of the listed and restricted substances, batteries, of course, are permitted to be part of the finished product and are not required to be analyzed.

Examples of the types of electronic products subject to the RoHS directive includes: consumer electronics and entertainment gear, electric tools, lighting devices (including light bulbs,) medical devices, large and small household appliances, toys and sports equipment as well as telephones and telecommunications hardware.

In addition, manufacturers of electronic devices may require that the raw materials such as silica sand used in wafer production, or the plastic resins used in case manufacture, be tested by their suppliers to ensure compliance with the RoHS directive as a condition of purchase. It is the responsibility of the company that puts a product on the market to ensure it complies with the RoHS directive. For some time, there has been momentum within the United States to propose and adopt similar directives.



Specialists at RI Analytical are available to assist clients with the testing required to assess a product's or material's compliance with the Restriction of Hazardous Substances directive. In addition, RI Analytical routinely provides the measurement of a wide variety of environmental contaminants for clients located throughout the United States. We would be happy to discuss your RoHS testing, or any other analytical requirements you may have, at your convenience.