

**TWO DAYS TRAINING AND AWARENESS PROGRAMME**  
**on**  
**RESTRICTION OF HAZARDOUS SUBSTANCES (RoHS)**  
**(January 6 & 7, 2020)**



**Programme Coordinator**

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**RoHS Testing Laboratory**

**CENTRE FOR MATERIALS FOR ELECTRONICS TECHNOLOGY  
(C-MET)**

**(R & D Laboratory, Ministry of Electronics and IT (MeitY), Govt. of India)**

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## **TWO DAYS TRAINING AND AWARENESS PROGRAMME ON RESTRICTION OF HAZARDOUS SUBSTANCES (RoHS) (January 6 & 7, 2020)**

### **Background**

Recognizing the toxicity of all hazardous substances and to safeguard the environment, the European Union (EU) has formulated RoHS Directive (2002/95/EC) in the year 2003, which imposes a ban on the use of certain hazardous substances in electronic and electrical equipment. The EU implemented its directive from July 2006. In recent years, many countries have introduced RoHS regulations to minimize human exposure to toxic substances from Waste Electronic and Electrical Equipment (WEEE). China, Japan, South Korea and the California State in the United States have introduced similar regulations. Other economies, notably Australia and Taiwan, are also implementing their own RoHS-like laws. In this context, it is worthwhile to mention that the Ministry of Environment, Forest & Climate Change (MoEF&CC), Govt of India has recently notified E-Waste (Management), rules 2016. From October 01, 2016 onwards, the Central Pollution Control Board (CPCB) and State Pollution Control Board (SPCB) would randomly check the electronic products in the market. In case of RoHS non-compliance the producer is bound to recall all such products which will result huge losses to the Producer/Stockiest. In addition to this, huge penalties will be levied on such manufacturers including imprisonment.

***If you are an exporter, or part of the E&E supply chain, your products will have to comply with RoHS regulations. Otherwise the firm will be eligible for penalty as per E-Waste, rule 2016, chapter-VI (21-2). Hence, it is very essential to analyze various materials/ products/ gadgets/ systems and certify as per the requirements of RoHS Directive.***

### **Market Overview**

Many of the EEE, mainly computers, television, telecommunication equipment etc. are very important for the social and economic development of any community and country. EEE plays key role in running and development of the modern business, administrative and in education field. But due to the social and economic disparity in the developing countries like India compared with their counter parts in developed countries many people lacks the use of the new EEE. The considerable price difference between the new and used EEE makes the consumer to go for the purchase of the second hand EEE in developing countries like India, which may be one of the factor for the growth of E-waste recycling market in India. E-waste recycling is a market-driven and growing industry in India. The low initial investment required for starting a collection, dismantling, sorting, or a recovery activity makes the business very attractive for small entrepreneurs. Rather than creating environmental or social awareness the financial profit is the main incentive for the facility owners in India. Also, as most of the laborer working in this sector is poor literate and un-educated, they are little or completely not aware of the harmful effects of E-waste recycling on their health and environment. As collection, dismantling, sorting-segregation and recovery of E-waste are mostly done manually, in India this business has significant employment potential in several cities. An Empa's pilot study for Delhi estimates the number of unskilled workers involved in recycling and recovering operations, to be at least 10,000 people in Delhi itself. In the developing countries like India recovering reusable machines, components and materials from discarded WEEE is a source of income for poor people. Thus, the E-waste recycling sector opens the job opportunities and source of income,

which also needs to be understood and addressed while framing the E-waste management system for India.

### **Impact of RoHS regulation on Electronics products:**

The electronics and electrical manufactures are becoming more environmentally conscious after implementation of the RoHS directive in the EU. The effect of the directive has already become visible. Electronic products entering in EU market have reduced hazardous substances. A study in the EU has shown a sharp reduction of certain hazardous substances from the electronic products entering the EU market.

### **ROHS Regulation in India:**

Ministry of Environment, Forest & Climate Change (MoEF & CC), Government of India is the nodal agency to address the issue related to RoHS and Electronic waste in India. MoEF has notified (S.O. 1035) the electronic wastes (Management and Handling) Rules, 2010 on 12th May 2011 to address the safe and environmentally friendly handling, transporting, storing, recycling of electronic waste and also to reduce the use of hazardous substances during manufacturing of electrical and electronic equipment. These are the first ever-exclusive rules on electronic waste in India. The chapter V of the rules has covered the reduction in the use of hazardous substances (RoHS) in the manufacture of the electrical and electronic equipment. These rules have been enacted from 1st May 2012 and rules relating to RoHS will come into effect from 1st May 2014. The electronic waste (Management and Handling) Rules, 2010 which was modified recently as E-waste (Management) Rule – 2016, addresses the reduction in the use of hazardous substances in the manufacture of electrical and electronic equipment. Following are the directives:

- ❖ Every producer of electrical and electronic equipment shall ensure that, new electrical and electronic equipment do not contain lead, mercury, cadmium, hexavalent chromium, polybrominated diphenyls or ethers: Provided that a maximum concentration value of 0.1% by weight in homogeneous materials for lead, mercury, hexavalent chromium, by 0.01 % weight in homogenous materials for cadmium shall be permitted. The list of applications exempted from provisions of the rule is provided in Schedule-II.
- ✚ The components of electrical and electronic equipment manufactured or placed on the market six years before the date of commencement of these rules are also exempted.
- ✚ In the event of a reduction in the hazardous materials used in the electrical and electronic equipment, the detailed information on the constituents of the equipment, need to be provided in the product information booklet.
- ✚ Imports or placement in the market for new electrical and electronic equipment, which are compliant to rule, shall only be permitted.
- ✚ Manufacture and supply of electrical and electric equipment used for defence and other similar strategic applications shall be excluded from the rule.
- ✚ Such reduction in use of hazardous substances in manufactured or imported electrical and electrical equipment shall be achieved within a period of two years from the date of commencement of these rules.

## Focus & Objective

Centre for Materials for Electronics Technology (C-MET), Hyderabad is a premier Scientific Society, under Ministry of Electronics and Information Technology (MeitY), Govt. of India. A world class RoHS testing facility had been established with MeitY, funding in two phases since September 2008. As an outcome of this, a world class RoHS characterization centre with state of the art characterization equipment as per IEC62321 norms-EDXRF for pre-screening of the elements of Pb, Cd, Hg and Br; ICP-OES for the quantification of Pb, Cd and Hg; GC-MS for the analysis of Brominated Flame Retardants (BFRs) known as Poly Brominated Biphenyls (PBDE) and Polybrominated Diphenyl Ethers (PBDEs); IC and UV-Vis Spectrometer for the speciation analysis of  $\text{Cr}^{6+}$  were procured and commissioned. The standard operating procedures (SoPs) were developed for both operation and maintenance of all the characterization equipment. NABL accreditation in the field of chemical analysis was obtained which is valid until June 26<sup>th</sup>, 2018 and 8 Industry awareness programs have been conducted at various parts of India to familiarize RoHS norms among EEE manufactures. Moreover, the B. Tech and M.Sc level students were trained on ISO 17025:2005, Internal Laboratory Audit and Quality management system as per NABL guide lines.

The main objectives of the proposed Training Programme is to provide an overviewed about the Restriction of the use of Hazardous Substances (RoHS) Directive as a part of E-waste (Management) Rules – 2016, which covers mainly the awareness, compliance, testing and certification of Electrical Electronics Equipment (EEE).

Also the Training Programme is aimed to understand and address Restriction of the use of Hazardous Substances (RoHS) Directive:

- ❖ What is Restriction of the use of Hazardous Substance (RoHS) Directive?
- ❖ List of Hazardous Substances and their limits.
- ❖ The applications of six hazardous substances
- ❖ The toxicity and health issues out of six hazardous substances.
- ❖ Addressing opportunities and risks of Pb-free solder alloy alternatives-high complexity, thermally challenging electronic assemblies.
- ❖ Environmentally preferred electronic products for the global market.
- ❖ List of products comes under RoHS Directive.
- ❖ To whom RoHS Directive is applicable.
- ❖ The main differences between RoHS1 and RoHS2.
- ❖ The differences between RoHS2 and REACH.
- ❖ What is RoHS Compliance
- ❖ The implementation of materials data exchange standards.
- ❖ The evolving direction for environmental programs in the electronics Industry.
- ❖ Testing procedure of hazardous substances as per IEC 62321 norms

- ❖ Demonstration of sampling procedures especially for plastic and Cr<sup>6+</sup> coated samples for Hexavalent chromium and PBB and PBDE analysis.
- ❖ Measurement of uncertainty from the obtained results

## **METHODOLOGY:**

The programme will be organized on training programme model to create awareness and to encourage people's participation through interactive sessions. It will also help participants to understand about RoHS compliance management strategies and its testing.

**Duration:** Two days (**Dates 06 & 07 of January 2020**) from 10.00 am to 5.00 pm.

- ❖ **Target Group:** Electronic Electrical Equipment (EEE) Industrial Representatives, Local body Representatives, Recycling Industries Executives, NGO Representatives, R&D cells, Universities/Educational Institutions Representatives, Quality Assurance Professionals, Municipal Authorities including Supervisors and Stake Holders.
- ❖ **Faculty:** All the topics will be covered by Conversant in RoHS norms of C-MET Scientists

## **Fees:**

- ❖ **Rs. 3,000/- (Rupees three thousand only)** fee per participant.

Fee includes, stationary items lunch, tea and snacks during the training programme.

The payment of fee, in the form of DD/cheque in favour of "**C-MET, Hyderabad**" payable at **Hyderabad**.

**Programme Coverage:** Widely used standardized best topics highlighting the MoEF & CC, E-waste Management rules including RoHS Directive of global and Indian scenario. To achieve greater participation of all individuals a common platform would be provided for better interaction and clarify their individual doubts about the strict implementation of RoHS regulation in India by restricting the hazardous substances in the future generated E-waste to safe guard the environment and human health.

## **OUT COME OF THE PROGRAMME:**

The programme is aimed to create awareness among the Electrical Electronic Equipment (EEE) manufacturers and Importers, Exporters to European Union Countries, Stockiest, Distributors, Responsible Stake Holders, Quality Managers and Analysts of Testing Laboratories.



- ✚ Better understanding about RoHS Regulation in India and Abroad.
- ✚ EEE manufacturers will look for the alternatives of RoHS substances.
- ✚ Understand about the sample conditions for RoHS testing.
- ✚ Understands about the implications of hazardous substances both in environmental destruction and human health.
- ✚ Better understand about the importance of RoHS compliance to with stand in the market and better prospectus.
- ✚ Understand about the analytical equipment required for testing RoHS compliance.
- ✚ Understanding of best management practices for promoting RoHS compliant products in India.

**Further any Enquiries may be addressed to:**

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**For registration please contact:**

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## NOMINATION FORM

We confirm the following nomination (s) for the Training program:

| S.No | Participating Executive | Designation |
|------|-------------------------|-------------|
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Organization : \_\_\_\_\_

Address : \_\_\_\_\_

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Phone : \_\_\_\_\_

Fax : \_\_\_\_\_

E-mail : \_\_\_\_\_

We enclose a Demand Draft (DD) for Rs. \_\_\_\_\_

Drawn on \_\_\_\_\_ No.: \_\_\_\_\_ in favour of “C-MET,  
Hyderabad” payable at Hyderabad, India.

**For further details please contact**



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