



केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE GOVT. OF INDIA

Speed Post

B-29016/1//01/IPC-I

October 31, 2017

To

The Chairman
All SPCBs / PCCs

Sub: Procedure for Measurement of Lead contents in Household and Decorative Paints- Reg.

Sir,

Ministry of Environment, Forest and Climate Change issued Notification no. G.S.R. 1030 (E) on 1st November, 2016 regarding Regulation of Lead contents in Household and Decorative Paints.

MoEF & CC has approved compliance and testing Procedure for Measurement of Lead content in household and decorative Paints. (Copy enclosed)

In view of the above all the paint industries in your state may be asked to take necessary action to comply the rules of the said notification with effect from November 01, 2017.

Copy enclosed: As above

Yours faithfully,

(Gurnam Singh)

Additional Director, I/c IPC-1

Copy to:

1. The Indian Paint Association
Secretariat Affiliated with CII
6, Netaji Subhas Road,
Kolkata 700 001

:To inform all paint industries for compliance please.

2. I/c IT Division

: For uploading on CPCB website
before November 01, 2017.

(Gurnam Singh)

m/f.

October, 2017

COMPLIANCE AND TESTING PROCEDURE FOR

**MEASUREMENT OF
'LEAD CONTENTS IN HOUSEHOLD AND DECORATIVE
PAINTS'**



CENTRAL POLLUTION CONTROL BOARD
(Ministry of Environment, Forest & Climate Change)
Parivesh Bhawan, East Arjun Nagar
Delhi-110032

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MEASUREMENT OF LEAD CONTENTS IN HOUSEHOLD AND DECORATIVE PAINTS OVERALL REQUIREMENTS

1. Scope:

This document lays down the applicability, requirements and Testing Procedure for notification vide G.S.R. 1030 (E), dated 1st November, 2016 on the Regulation of Lead Contents in Household and Decorative Paints, issued by the Ministry of Environment, Forest and Climate Change, Government of India.

Household and Decorative Paints means paint used as surface coating materials in interior and exterior of buildings, walls, civil structures, any consumer products meant for household purposes and shall include enamel, primer, interior, undercoating and finishing colouring materials as prescribed in the Indian Standards for Household and Decorative Paints by the Bureau of Indian Standards.

2. Prohibition of Use of Lead or Exemption of Lead in Certain Cases

Any manufacture, trade, import and export of Household and Decorative Paints as explained above containing lead or lead compounds (calculated as lead metal) in excess of 90 parts per million (ppm) (0.009 per cent) of the weight of the total non-volatile content of the weight of the dried paints film is hereby prohibited.

3. Self Certification

Household and Decorative Paints manufactured or imported on or from the date these rules come into force i.e. 1.11.2017 shall be labelled “lead content does not exceed 90 ppm” or “lead content does not exceed 90 mg/kg”. Such labelling shall be durable and legible and

- i. The label shall contain the name and address of the manufacturer or importer, as the case may be;
- ii. The label shall contain the date of manufacture (month and year) or import into the country, as the case may be;

4. Conformity Assessment of Existing and New Paints

a) Sampling Protocol

- Sampling shall be done at random from factory premises or company authorized warehouses by unit /third party.
- Sample shall be drawn only for the paints as per the list of the household or decorative paints submitted by the manufacturer / importer.

- Three to five samples shall be drawn depending on the quantity of a particular batch. Two samples shall be retained at manufacturer / importer end for dispute resolution in the event of non-conformity and shall be retained for period of 03 months from date of drawing the sample.
- Samples drawn shall be divided in two parts and kept in separate containers. One sample shall be retained at manufacture's premises for resolution in the event of non-conformity.

b) Sampling Frequency

Initial one time testing of all paints for conformity assessment shall be done. Thereafter, it shall be done at random annually for few samples.

c) Protocol for Testing Products having Multiple Bases and Shades

- For paints with multiple bases / multiple shades the composite sampling protocol shall be followed which shall be valid for complete range of product.
- It will not recommend for testing of tinted paints.
- Colorant samples shall be tested separately for lead. The samples of colorant shall be taken from the sealed container and not from the dispensing machine.

5. Compliance Monitoring

The compliance monitoring shall be as per the provision of Rule 9 of the Regulation of Lead Contents in Household and Decorative Paints Rules, 2016 which are as below:

- i. the stipulations relating to contents of lead in the Household and Decorative Paints as specified in rule 3 shall apply to products manufactured or imported on and from the date of coming into force of these rules;
- ii. every manufacturer or importer shall subject its product every year for testing of lead content as specified in rule 3 before bringing out its product in the market, from any one of the authorised agency mentioned in rule 6;
- iii. the testing agencies shall submit the test reports to the nodal agency for verification and action as may be required;
- iv. the nodal agency shall furnish a copy of the test reports to the concerned manufacturer or importer and the Ministry of Environment, Forest and Climate Change.

6. Dealing with Non-Conformity

If any sample is found to be non-compliant then matter will be further evaluated by CPCB. CPCB shall again re-test the sample from same batch by third party.

7. Time Period

The overall lead time from drawing of sample to submission of report to manufacturer shall not exceed one month.

8. Nodal Agency for Implementation of Procedure

- i. The Central Pollution Control Board shall be the nodal agency for implementation of these rules.
- ii. In case of any dispute or difficulty in implementation of these rules, the matter shall be referred to the nodal agency.
- iii. The nodal agency shall constitute a Committee to advise on all matters including the disputed matters, related to the implementation of these rules.

9. Authorised Agencies for Testing of Paints

The Central Power Research Institute, Bengaluru and its regional centres at Bhopal, Guwahati, Hyderabad, Kolkata, Nagpur, Nashik and Noida and other laboratories recognized by Ministry of Environment Forest and Climate Change/State Pollution Control Boards/Committees or any other accredited laboratory with National Accreditation Board for Testing and Calibration Laboratories (NABL) shall be authorised to carry out such tests as they deem necessary for determining whether a product contains lead not exceeding 90 parts per million as specified in rule 3.

10. Measurement Methods

The measurement of lead content of paint will be carried out by WDXRF (Wavelength Dispersive X-Ray Fluorescence). The detail procedure for analysis of Lead in paint by WDXRF is attached at **Annexure-I**. In case, WDXRF is used for the first time assessment and results are found to be non-compliant then the re-testing of the same sample will be done by AAS/ICP which are as follows:

- a. ASTM E1645- Sample preparation from dried paint film by microwave digestion
- b. ASTM E1613- Determination of lead by ICP /AAS

11. Transitory Provision

Household and Decorative Paints manufactured or imported before the date of commencement of these rules shall be permitted for sale for the next two years.

PROCEDURE FOR ANALYSIS OF LEAD IN PAINT BY WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE (WDXRF):

This is a technique where in no extraction of lead from paint sample is required. The technique is based on the fluorescent radiation emitted by the atoms of particular element due to impingement of x-ray. The wave length of emitted fluorescent radiation is an indication of presence of a particular element and the energy intensity of the fluorescent radiation is a measure of concentration.

The instrument is having both facility to measure the lead content either by standard less technique called OMNION method and also by calibrating the instrument using known concentration standard reference materials and use the calibration curve to analyse the lead content in the unknown sample. The standard less technique uses the data stored for the pure lead element in the software of the instrument.

The test by WDXRF does not require any sample preparation. The paint has to be coated on a substrate of size 39 mm dia and 2 or 3 mm thick. The coated sample has to be dried in air and then in oven if required. This sample will be directly analysed in the instrument. In case of solid sample, it shall be either in the form of a 39 mm dia disc or in fine powder form (200 mesh size).

Method:

- The paint sample will be coated on the surface of aluminum disc. Then it will be dried in air and in oven at suitable temperature.
- The dried sample will be kept in the sample holder and placed inside the WDXRF instrument.
- The sample will be analysed for lead content by the instrument – wave length dispersive x-ray fluorescent spectrometer.
- It is not required to dissolve paint in any solvent or extract lead from paint for analysis.
- During analysis, the X-ray is made to fall on the paint layer and the fluorescent radiation generated will be analysed for wavelength and counts.
- This is correlated for the standard counts for lead element and concentration will be calculated.
- The whole operation of detection of wavelength, measurement of wavelength and counts and calculation of concentration (in ppm or %) is done by the instrument software.