

**Research Project**  
**On**  
**Ageing Resistance test in Polypropylene feeding bottle**

**1. Title of the Project:** To study the performance requirement of ageing resistance test in PP feeding bottle.

**2. Background**

- a) Recently through studies, serious concerns have been raised about the polycarbonate type of plastic bottles because they contain Bisphenol A (BPA) which has serious health concerns even in very low dosages. It has been reported that BPA containing plastic feeding bottles leached high levels of Bisphenol A which is harmful for infants. Therefore, use of polycarbonate as a material for manufacturing infant feeding bottles which was earlier prescribed in IS 14625 Plastics Feeding bottles have been deleted in view of reports on Bisphenol A. Additionally, use of polypropylene (PP) as a material requirement for manufacturing infant plastics feeding bottle have been added in IS 14625.
- b) Further, ageing resistance test is one of the performance requirement for the plastics feeding bottle prescribed in IS 14625. An ageing resistance test is performed to evaluate the ability of materials to withstand the effects of ageing over time, including exposure to environmental conditions such as heat, light, humidity, and other factors. However, when there was changes made in material requirement from Polycarbonate to polypropylene (PP) in IS 14625 as cited in 2(a), the requirement for ageing resistance test earlier laid in IS 14625 for Polycarbonate has been retained for Polypropylene.
- c) However, no data or study of the ageing resistance test in case of PP feeding bottle is available with BIS. In this context, a need has been felt to ascertain the requirement of ageing resistance test in case of feeding bottle made up of Polypropylene.

**3. Objective**

To collect technical and scientific evidences with respect to requirement of ageing resistance test in case of feeding bottle made up of Polypropylene (PP).

**4. Scope**

- a) Identification of manufacturing base of PP feeding bottle in India along with categorization of large, medium, small and micro units.
- b) Identification of importers / exporters of PP feeding bottle in India. Collection of information on product quality and technical regulations / standards followed for export.

- c) Visit to the manufacturing unit of PP feeding bottle ensuring that minimum two units for each of Large, Medium, Small and Micro to gather information through questionnaire and structured interaction. Data on requirements laid down by user relevant to plastics feeding bottle, if any, to be collected during visit.
- d) Identification of minimum 5 NABL accredited laboratory for carrying out ageing resistance test. Collection of samples from minimum 25 different manufacturers of PP feeding bottle.

NOTE- Method to carry out test shall be as prescribed in Clause 5.3.5 of IS 14625. Minimum number of Sample for performing tests shall be as prescribed in IS 14625 for each manufacturer sample.

- e) Testing of collected samples from identified NABL accredited laboratory and submission of analytical report covering test reports and technical evidences with respect to requirement of ageing resistance test in case of feeding bottle made up of Polypropylene (PP) ,study tests reports and reasons behind.

## **5. Research Methodology**

- a) Identify manufacturing base of PP feeding bottle categorized into Large, medium, small and micro. Contact the manufacturers and collect information using structured questionnaire.
- b) Identify exporters/importers of PP feeding bottle. Contact the manufacturers and collect information using structured questionnaire.
- c) Undertake visit to identified manufacturing unit, considering criterial set in 4 (c).
- d) Identify minimum 5 NABL accredited laboratory for carrying out tests as prescribed in 4(d).
- e) Collect samples of from minimum 25 different manufacturers of PP feeding bottle.
- f) Undertake testing of samples collected from manufacturers and importers. The testing shall be conducted in identified NABL accredited laboratory.
- g) Based on the test reports and information collected through questionnaires, visits and discussion, prepare an analytical report covering all details as cited in 4 (e).

## **6. Expected Deliverable**

- a) Project report, in hard copy and digital format, covering all aspects mentioned in scope.
- b) Questionnaires, discussions, visit reports and test reports to be appended with final analytical report.

## **7. Timeline and Method of Progress Review**

- a) Timeline for the project is 2 months from the date of award of the project.
- b) Stages for Review:
  - Stage I:** At the end of 1<sup>st</sup> month, prepare a comprehensive plan identifying the following:
    - a) Identified manufacturers, exporters, importers;

- b) Information obtained through questionnaires from the above mentioned stakeholder and visits to be carried out;
- c) Laboratory where testing to be carried out; and
- d) Associated sampling volume and sampling plan.

Member Secretary will evaluate the plan and provide feedback, if any.

**Stage II:** At the end of 2<sup>nd</sup> month, final report shall be submitted.

**8. Support BIS will provide:**

- a) BIS will provide access to latest editions of Indian and International Standards.
- b) BIS will facilitate introduction to manufacturing industries, laboratories and user industries for carrying out the project.

**9. Nodal Officer**

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