TERMS OF REFERENCE FOR R&D PROJECT

[Printing Inks, Stationery & Allied Products Sectional Committee, CHD 14]

Title of the Project : Study of Properties for Environment-Friendly Printing Inks for Food Packaging

1. Background

BIS has identified the subject of Eco-friendly Printing Inks for food packaging as a subject of national importance. In order to take holistic view on the subject and to formulate an indigenous Indian Standard, a detailed study of already available standards such as ASTM, ISO, EN and other locally and globally available standards and available technology related to production and testing of the product in the country is required to be conducted.

This will assist the manufacturers of printing inks to produce inks, which are intended for use on food packages, and which may support the packaging manufacturers to design sustainable packaging. Concepts like Non-Intentionally Added Substances (NIAS) may be incorporated.

2. Objective

Considering the importance of the subject, it is proposed to carry out a study of the properties of Eco-friendly Printing Inks for food packaging by collecting data and evidence from primary and secondary sources on the various products available.

3. Scope

3.1 To undertake a comprehensive study of existing literature which includes standards, technical regulations, research papers, any SoPs/Guidance/Instructions issued by the concerned Ministries/Regulators and any other relevant study

3.2 Study of the current usage of eco-friendly printing inks for various applications.

3.3 To collect data on manufacturing and consumer base, suppliers and vendors involved through government sources (website, reports) and/or industry associations

3.4 Gather the import and export data for eco-friendly printing inks. Collate and study the information pertaining to standards/technical regulations applied in major countries.

3.5 A comprehensive study on availability of test facilities in the country.

3.6 To visit 2 industries each of large, medium, small scale and 2 testing labs [preferably 1 govt and 1 private lab (NABL accredited or BIS recognized lab)] unless the manufacturing database indicates otherwise to collect data on the following:

3.6.1 Types of raw materials
3.6.2 Varieties manufactured
3.6.3 Manufacturing processes
3.6.4 In process quality control checks
3.6.5 Manufacturing facilities
3.6.6 Safety and quality parameters
3.6.7 In-house test facilities
3.6.8 Performance and Safety Parameters tested
3.6.9 Packaging, Marking and Labelling
3.6.10 Finished materials quality parameters
3.6.11 Sustainability practices [energy consumption, renewable energy sources, sustainable practices, 3Rs (Reuse, Reduce and Recycle), waste management and disposal mechanisms, carbon footprints]

3.6.12 To collect user feedback
3.6.13 Collection of samples and generation of test data for important requirements of the material for the various characteristics and against the parameters being reported
3.6.14 Prepare an analytical project report covering the entire scope of the Project

4. Research Methodology

4.1 To extensively review the literature in respect of the scope

4.2 Contact the relevant manufacturers, laboratories and R&D bodies of the product in the country for collecting information in respect of the scope

4.3 Collection of feedback through questionnaire

4.4 Observation of facilities and processes

4.5 Discussion with stakeholders - focused group discussion through a structured format

4.6 Collection and testing of samples

4.7 Report the results in a comprehensive and analytical manner.

5. Sampling Plan

5.1 Visit to 2 industries each of large, medium, small scale (unless the manufacturing database indicates otherwise) to understand and collect data from the manufacturers and organizations involved in manufacturing of eco-friendly printing inks to witness the manufacturing process and testing facility so as to have firsthand information.

5.2 Visit to 2 users of the product.

5.3 Visit to 1 govt and 1 private lab (preferably NABL accredited or BIS recognized lab) to have information on characteristics tested and methods of tests used.

6. Deliverables

A comprehensive and analytical project report of the study covering all aspects of the scope consisting of details of surveys, questionnaires, manufacturing database collected, lab reports, information gathered out of discussions during factory and lab visits should be appended to the report (in digital and hard copy form).

7. Delivery Milestones and Review Process

(Project Timeline: 3 Months from the award of the project)

7.1 Interim Report/primary analysis report covering the review of the literatures, manufacturing and user industries, transporter database, collated feedback forms, structured questionnaire responses and existing stipulations, sampling plan thereof – within 1 month from the date of award of the project

7.2 Draft Report of site visits and specific requirement as mentioned in deliverable and methodologies etc. – within 2 months from the date of award of the project.

7.3 Final Report covering all the aspects of the ToR – within 3 months from the date of award of the project.

Note: The proposer may forward the draft report to BIS without waiting for test report if it is a long duration test.

8. Support BIS will provide:

8.1 BIS will provide access to latest editions of national & international standards as per the requirements identified by the proposer.

8.2 Licensees details relating to manufacturing similar products

8.3 List of BIS approved labs

8.4 Facilitation in the form of introducing the proposer to the ministries/manufacturers.

9. Nodal Point

Shri Sagar Singh, Scientist D and Member Secretary, CHD 14 may be contacted for more clarification on the R&D project (chd14@bis.org.in)