

Ecomark Criteria for Packaging Material/ Package

Paper Boards & Plastics excluding Laminates

General Requirements:

- All the packaging material/package manufactured shall meet relevant standards of BIS (Bureau of Indian Standards) pertaining to safety, quality and performance wherever applicable.
- The manufacturer of packaging material/package must produce the consent clearance as per the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 along with the authorisation, if required, under the Environment (Protection) Act, 1986 and the rules made thereunder to BIS while applying for Ecomark. Additionally the manufacturer shall also comply with the provisions under prevention of Food Adulteration Act 1954 and rules made thereunder, wherever necessary.
- The packaging material/package may display in brief the criteria based on which the product has been labelled as Environment Friendly.
- The packaging material/package may be sold along with instruction for proper use and mode of safe disposal so as to maximise product performance and minimise wastage.
- It shall also be suitably mentioned that ECOMARK label is applicable only to the packaging material/package, if content is not separately covered under Ecomark. It may be stated that the Ecomark is applicable to the product or packaging material or both.

Product Specific Requirements:

Paper & Paper Boards

The paper and paper boards packaging materials/packages shall be manufactured from the following raw materials:-

a) 100% waste paper or agricultural/industrial wastes;

OR

b) A minimum of 60% by mass of pulp made from materials other than bamboo, hardwood, softwood and reed;

Note: The manufacturer shall provide documentary evidence by way of certificate or declaration to this effect to Bureau of Indian Standards while applying for Ecomark for requirements under (a) and (b) above

c) Paper and paper boards used for packaging of food materials shall be manufactured from virgin pulp and shall be free from dioxins. Printed surfaces of the paper shall not come into contact with the food and the maximum amounts of contaminants in paper intended to come into contact with food shall not exceed the limits given in the following table when tested as per the methods given in Appendix-I.

| Contaminant | X | Y | Z (in mg/kg of paper) |
|----------------------------------|------|------|-----------------------|
| Cadmium (Cd) | - | 0.5 | 0.5 |
| Chromium (Cr +6) | - | 0.1 | 0.1 |
| Lead (Pb) | - | 3.0 | 3.0 |
| Mercury (Hg) | - | 0.3 | 0.3 |
| Pentachlorophenol (PCP) | 0.05 | 0.05 | 0.05 |
| Polychlorinated biphenyls (PCBs) | 2.0 | 2.0 | 0.5 |

X: Paper intended to come into contact with dry food

Y: Paper intended to come into contact with wet food and food with fatty Surface

Z: Paper for filtration.

The paper and paper boards packaging materials/packages shall conform to the relevant Indian Standards. The paper and paper boards used for the manufacture of packaging materials/packages shall comply with the relevant Indian standards.

Plastics (Excluding Laminates)

The plastic packaging materials/packages used for packaging of food, pharmaceutical, cosmetics and drinking water shall comply with the relevant Indian standards and shall be manufactured from the plastics which shall comply with relevant Indian Standards.

The packaging material used for packaging of non-food, non-pharmaceutical, non-cosmetics and non-drinking water commodities shall be manufactured from recycled plastics which shall, apart from fillers and reinforcing agents, be a minimum of 30% by weight of compatible plastic wastes.

Note: The manufacturer shall provide documentary evidence by way of certificate or declaration to this effect to Bureau of Indian Standards while applying for Ecomark.

APPENDIX-I

Determination of Some Contaminants from Paper Intended to come into Contact with Food

LEAD (Pb)

The sample from paper will be leached with extraction fluid of pH 2.88 + 0.05 prepared by mixing 5.7 ml of acetic acid in one litre of double distilled water for 18 + 2 hrs. using shaker rotating/moving at 30 + 2 rpm.

The metal content of the extract will be determined by separating the extract from the paper matrix by filtration through glass fibre filter with 45 micron pore size. The liquid fraction will be acidified and digested prior to Pb analysis as per Standards. Methods for the Examination of Water and Waste water (APHA, AWWA, WPCF) 18 th edition 1992. The metal content of the extract will be determined using Atomic Absorption Spectrometric and Graphite Oven technique.

Cadmium

(Cd)

The sample from paper will be leached with extraction fluid of pH 2.88 + 0.05 prepared by mixing 5.7 ml of acetic acid in one litre of double distilled water for 18 + 2 hrs. using shaker rotating/moving at 30 + 2 rpm. The metal content of the extract will be determined by separating the extract from the paper matrix by filtration through glass fibre filter with 45 micron pore size. The liquid fraction will be acidified and digested prior to Cd analysis as per Standards. Methods for the Examination of Water and Waste water (APHA, AWWA, WPCF) 18th edition 1992. The metal content of the extract will be determined using Atomic Absorption Spectrometric and Graphite Oven technique.

Chromium (Cr +6) The sample from paper will be leached with extraction fluid of pH 2.88 + 0.05 prepared by mixing 5.7 ml of acetic acid in one litre of double distilled water for 18 + 2 hrs. using shaker rotating/moving at 30 + 2 rpm.

The metal content of the extract will be determined by separating the extract from the paper matrix by filtration through glass-fibre filter with 45 micron pore size. The Cr +3 and other interfering metals will be precipitated with aluminium sulphate. Cr +6 will be determined from the extract with diphenylcarbazide using spectrophotometry (550 nm).

Mercury (Hg)

The sample from paper will be leached with extraction fluid of pH 2.88 + 0.05 prepared by mixing 5.7 ml of acetic acid in one litre of double distilled water for 18 + 2 hrs. using shaker rotating/moving at 30 + 2 rpm.

The metal content of the extract will be determined by separating the extract from the paper matrix by filtration through glass-fibre filter with 45 micron pore size. The Hg content of the extract will be determined using cold vapour atomic absorption spectrometric method.

Note: For each metal, the metal content of the leaching fluid should be determined simultaneously and subtracted from the metal value of the extract.

Pentachlorophenol (PCP)

The sample from paper will be extracted with an organic solvent. The extract is concentrated and acetylated. The determination of PCP is done by gas chromatography.

Polychlorinated Biphenyls (PCBs)

The sample from paper is extracted with boiling ethanolic potassium hydroxide solution. An aliquot of the extract is mixed with water and subjected to extraction with hexane. The PCBs contained in the hexane phase are quantified by capillary gas chromatography using an EC detector. The pattern of the peaks is compared with the pattern of a suitable technical PCB.

Part - II: Laminates and products thereof

General Requirements:

Following requirements will be applicable depending upon their relevance to the specific product (to be decided by BIS).

- Laminates and products thereof consisting of two or more substrates mentioned below used for manufacture of packaging material/package shall meet the relevant Indian Standards of Bureau of Indian Standards (BIS)
 - a.) Aluminum
 - b.) Jute
 - c.) Paper
 - d.) Plastic
- The manufacturer of packaging material/package must produce the consent clearance as per the provisions of Water (Prevention & Control of Pollution) Act 1974, Water (Prevention & Control of Pollution) Cess Act 1977 and Air (Prevention & Control of Pollution) Act 1981 along with the authorisation, if required under Environment (Protection) Act 1986 and the rules made there under to BIS while applying for ECOMARK. Additionally the manufacturer shall also comply with the provisions under Prevention of Food Adulteration Act 1954 and rules made there under, wherever necessary.
- The packaging material/package may display in brief the criteria based on which it has been labelled as environment friendly.
- The packaging material/package may be sold along with instruction for proper storage, use and mode of safe disposal so as to maximise product performance and minimise wastage.

- It shall also be suitably mentioned that Eco label is applicable only to the packaging material/package, if content is not separately covered under Ecomark, wherever is applicable. It may be stated that the Ecomark is applicable to the product or packaging material/package or both.
- Packaging material/package as well as ink used for printing on it shall not contain heavy metals (as Pb) more than 10 ppm when tested as per method given in IS 4006 (Part - III) : 1978 and arsenic content shall not exceed 1.5 ppm when tested as per method given in IS 1060 (Part-II) : 1960.

The compatibility of the product, process and package including its substrates and adhesives must be ensured by the manufacturer of the end product so that the product (content) quality is maintained within the specified limits till the end of its declared shelf life wherever applicable. The manufacturer shall provide documentary evidence by way of certificate or declaration to this effect to BIS while applying for Ecomark.

Product Specific Requirements:

- Laminates and products thereof shall be recyclable or reusable for non-food purposes which shall be demonstrated to BIS with supporting document/certificate.

Note: The products made from recycled/reused laminates and products thereof shall not be used for packaging of food, pharmaceutical, cosmetics and drinking water.

- The laminates and products thereof used for packaging of food, pharmaceuticals, cosmetics and drinking water shall be manufactured from the raw material as specified in the relevant Indian Standard for this purpose.
- The laminates and products thereof shall not contain any residual volatile organic compounds when tested by gas liquid chromatography method.
- There shall not be any obnoxious odour in laminates and products thereof.

The Ecomark requirements, in the following BIS standards, are incorporated:

| Indian Standards | Year of Incorporation | Description |
|---|-----------------------|--|
| IS 1397:1990 Reaffirmed Year 2008 | 1997 | Kraft paper |
| IS 1776:1989 Reaffirmed Year 2008 | 1998 | Folding box board, uncoated |
| IS 2617 :2006 | 1991 | Millboard, Grevboard and strawboard |
| IS 2771(Pt.1):1990 Reaffirmed Year 2008 | 1998 | Fibreboard boxes: Part 1 Corrugated fibre board boxes |

| | | |
|---|------|---|
| IS 2771(Pt.2):1975 Reaffirmed Year 2008 | 1998 | Fibreboard boxes: Part 2 Solid fibre board boxes |
| IS 3263:1981 Reaffirmed Year 2009 | 1998 | Waxed paper for confectionery |
| IS 3962:1967 Reaffirmed Year 2009 | 1998 | Waxed paper for general packaging |
| IS 5012:1987 Reaffirmed Year 2008 | 1998 | Cellulose film |
| IS 6615:1972 Reaffirmed Year 2009 | 1998 | General purpose packing/wrapping paper |
| IS 6622:1972 Reaffirmed Year 2009 | 1998 | Grease proof paper |
| IS 7601:1983 Reaffirmed Year 2008 | 1998 | Fibreboard drum for general purpose |
| IS 9493:1980 Reaffirmed Year 2009 | 1997 | Cartons for non-soapy detergents |
| IS 9588:1990 Reaffirmed Year 2009 | 1998 | Kraft liner |
| IS 9988:1981 Reaffirmed Year 2009 | 1998 | Waxed paper for bread and biscuits |
| IS 10177:1982 Reaffirmed Year 2009 | 1998 | Ice cream cups and lids |
| IS 11324:1985 Reaffirmed Year 2008 | 1997 | Multi-ply paper sacks for carbon black |
| IS 11357:1985 Reaffirmed Year 2009 | 1998 | Composite containers for dry products |
| IS 11761:1997 Reaffirmed Year 2008 | 1992 | Multi-wall paper sacks for cement-valved-sewn- gusseted |
| IS 12490:1988 Reaffirmed Year 2009 | 1998 | Glassine paper |
| IS 12999:1990 Reaffirmed Year 2008 | 1998 | Folding box board, coated |
| IS 13228: 2006 Reaffirmed Year 2012 | 1991 | Corrugated fibre board boxes for packing and transportation |

The incorporation of the Ecomark requirements, in the following BIS standards are under process:

| Indian Standards | Year of Incorporation | Description |
|--|------------------------------|--|
| IS 1398:1982 Reaffirmed Year 2009 | - | Packing Paper, Water-proof, bitumen laminated |
| IS 5134:1977 Reaffirmed Year 2009 | - | Bitumen impregnated paper |
| IS 7161:1973 Reaffirmed Year 2009 | - | Vegetable parchment or grease proof paper: Aluminum foil laminate for wrapping butter |
| IS 8970:1991 Reaffirmed Year 2009 | - | Aluminum foil laminates for packaging |
| IS 10212 (Pt.1) 1986 Reaffirmed Year 2011 | - | General requirements for packages of explosives : Part 1 Commercial high explosives |

Source: http://www.cpcb.nic.in/EnvironmentalPlanning/Eco-abel/packaging_materials.pdf