EcoLogo[CM] Program
Certification Criteria Document

CCD-080
Envelopes

Introduction

The EcoLogo[CM] Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption and by minimizing the impacts of pollution generated by the production, use and disposal of goods and services.

The primary environmental impacts associated with envelopes come from producing the paper used as the main raw material in business forms, the printing processes and the chemical components of inks, adhesives (hot melts, latex) and other materials used in the manufacture process. Other environmental concerns include the effects of some of these components on the down-stream recyclability, and effluent discharges from the manufacturing processes.

Based on a review of available, up-to-date life cycle information, product category requirements will produce an environmental benefit through: reduction in harmful air emissions; reduction in harmful water emissions; reduction of waste going for disposal; efficient use of fiber; and reduction in energy use.

Life cycle review is an ongoing process. As information and technology change, the product category requirements will be reviewed and possibly amended.

Notice

Any reference to a standard means to the latest edition of that standard.

The EcoLogo[CM] Program reserves the right to accept equivalent test data for the test methods specified in this document.

Interpretation

1. In this criteria document:

   "adhesive" means a substance capable of holding or bonding materials together by surface attachment with sufficient strength for the objects to behave as one object. Adhesives may or may not be soluble in water. Non-soluble adhesives include pressure-sensitive and hot-melt glues;

   "alcohol" means organic compounds containing one or more hydroxyl groups attached to carbon atoms, when used as a fountain solution additive for offset lithographic printing (e.g. ethanol, n-propanol, isopropanol);

"aromatic solvent" means any organic solvent that has a benzene ring in its molecular structure;

"biochemical oxygen demand" or **"BOD_5"** means the amount of dissolved oxygen required for the biodegradation of the organic matter in water, when tested in accordance with the 5 day test set out in the "Standard Methods for the Examination of Water and Waste Water", latest edition, Sub-part 5210, jointly published by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation;

"catalogue envelope" means an envelope that holds large documents that are not meant to be folded. These envelopes have an open end and centre seam construction. They are available in many materials including woven bond, kraft paper, etc. Main sizes are 9"x 12" and 10" x 13";

"commercial envelope" means an envelope that usually has gummed flaps and is available with or without windows. Most common size is a No. 10 envelope, which is 4" x 9 ½" in size;

"continuous envelope" means an envelope available in several types including conventional carrier mounted envelopes, special carrier mounted, shingle, and cross-web glued;

"envelope/form combination" means an envelope in which carbons or carbonless paper can be used to transfer information from other parts to the envelope;

"envelope" means a paper product that is used for filing or mailing purposes. It includes commercial, catalogue, continuous, expansion, extended flap, and outbound/return envelopes, and envelope/form combinations;

"EPA" means the United States Environmental Protection Agency;

"expansion envelope" means an envelope with available open-sized, open-end and accordion-pleated construction. These envelopes can hold items of various sizes and bulk for mailing and storing;

"extended flap envelope" means an envelope with perforated flaps that is used for advertising, facilitating payment from customers and for order forms and coupons;

"fountain solution" means a mixture of water, volatile and non-volatile chemicals, and additives that maintains the quality of the printing plate and reduces the surface tension of the water so that it spreads easily across the printing plate surface. The fountain solution wets the non-image area so that the ink is maintained within the image areas. Non-volatile additives include mineral salts and hydrophilic gums. Alcohol and alcohol substitutes (including isopropyl alcohol, glycol ethers and ethylene glycol) are the most common additives used to reduce the surface tension of the fountain solution;

"halogenated solvent" means any organic solvent containing halogens including fluorine, chlorine, bromine and iodine;

"Kjeldahl nitrogen" means the sum of organic and ammonia nitrogen, when tested in accordance with the test set out in the "Standard Methods for the Examination of Water and Waste Water", latest edition, Sub-part 4500 jointly published by the American Public Health Association, the American Water Works Association and the Water Pollution Control;

"outbound/return envelopes" means an envelope with an extended flap that is pulled from the inside of the envelope and folded over the face;

"phosphorus" means the amount of phosphate when tested in accordance with the test set out in "Standard Methods for the Examination of Water and Waste Water", latest edition, Sub-part 4500 jointly published by the American Public Health Association, the American Water Works Association and Water Pollution Control;

"recyclable" describes a product, package or element thereof, if it can be diverted from the waste stream and, through existing commercial processes, be processed and returned to use in the form of raw materials or products;

"recycling" means a process through which post-use materials are separated from the waste stream, collected and processed for transformation into new products;

"sulfate" means the amount of sulfate when tested in accordance with the test set out in "Standard Methods for the Examination of Water and Waste Water", latest edition, Sub-part 4500 jointly published by the American Public Health Association, the American Water Works Association and Water Pollution Control;

"treatment" means removing harmful substances from the raw waste to the extent that the treated waste meets or exceeds local government regulations for the safe disposal of liquid and solid waste;

"volatile organic compound" or **"VOC"** means any organic compound that participates in atmospheric photochemical reactions. It excludes those organic compounds that the EcoLogo[CM] Program designates as having negligible photochemical reactivity (see Appendix 1); and

"wet-strength resins" means additives in paper products that add strength when the paper product is wet. Wet strength resins increase the difficulty of the recycling process because an insoluble bond forms between the paper fibers and the resin. Examples of wet strength resins are urea formaldehyde and epichlorohydrin resins.

Category Definition

2. This category includes, but is not limited to envelopes as further defined in the following subcategories:

   (a) commercial envelopes;
   (b) catalogue envelopes;

(c) continuous envelopes;
(d) expansion envelopes;
(e) extended envelopes;
(f) outbound/return envelopes; and
(g) envelope/form combinations.

General Requirements

3. To be authorized to carry the EcoLogo[CM], the envelopes must:

(a) meet or exceed all applicable governmental and industrial safety and performance standards; and

(b) be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations.

Product Specific Requirements

4. To be authorized to carry the EcoLogo[CM], the envelopes must:

Paper

(a) be manufactured from paper that is certified by the EcoLogo[CM] Program under the criteria document CCD-077 (Printing and Writing Paper);

Printing Processes

(b) be manufactured using printing processes, whether performed on- or off-site, that meet <u>one</u> of the following:

(i) is certified by the EcoLogo[CM] Program under the criteria document CCD-041 (Lithographic Printing Services), <u>or</u>

(ii) meets the following:

- does not use products formulated or manufactured with benzene,
- does not use products formulated or manufactured with halogenated solvents,
- uses blanket washes having a VOC content (as used) less than or equal to 30% by weight, as tested in accordance with EPA Test Method 24 or 24A or

as calculated from records of the amount of constituents used to make the product, and

- uses a fountain solution that does not contain alcohol and that either has a VOC content at or below 5.0% by weight of the formulation (as used) as calculated from records of the amounts of constituents used to make the product OR that has a VOC content at or below 8.5% by weight of formulation (as used) as calculated from records of the amounts of constituents used to make the product, and refrigerates the fountain solution to 60^{O}F or less;

Inks

(c) be manufactured with inks that meet one of the following:

(i) is certified by the EcoLogo[CM] Program under the criteria document CCD-040 (Printing Inks), or

(ii) meets the following:

- have a VOC content (as used) less than or equal to 10%, by weight, as tested in accordance with EPA Test Method 24, or as calculated from records of the amounts of constituents used to make the product, and

- are not manufactured or formulated with a total concentration greater than 100 ppm of lead, cadmium, and mercury or their compounds, and hexavalent chromium;

Adhesives

(d) be manufactured only using water soluble adhesives that:

(i) are not formulated or manufactured with aromatic solvents, halogenated solvents, borax, or formaldehyde, and

(ii) do not contain volatile organic compounds in excess of 5% by weight as measured by one of the following methods:
- EPA Method 24-24A, 40 C.F.R., Part 60, Appendix A (1991),
- Method 18,48 Federal Register 48, no. 202, October 18, 1983,
- Method 1400 NIOSH Manual of Analytical Methods, Volume 1, February 1984,
- US EPA Agency Method 8240 GC/MS Method for Volatile Organics, September 1986, or

- as demonstrated through calculation from records of the amounts of constituents used to make the product;

Recyclability of the Envelope

(e) not be manufactured with wet strength resins;

(f) be manufactured in a manner that will render the final product recyclable; and

Facility Discharges

(g) must be manufactured at a facility that operates in a manner such that liquid chemical effluent is in compliance with applicable local sewer use by-laws or, in the absence of such by-laws, the following minimum criteria (noting that sampling of the effluent is to be taken at the closest sewer access to the printing establishment):

(*i*) biochemical oxygen demand ≤ 300 mg\L,
(*ii*) total Kjeldahl Nitrogen ≤ 100 mg\L,
(*iii*) sulphate ≤ of 1500 mg\L, and
(*iv*) total phosphorus ≤ of 10 mg\L.

Discharge agreements may be accepted in lieu of criterion 4(g).

Verification

5. To verify a claim that a product meets the criteria listed in the document, the EcoLogo[CM] Program will require access, as is its normal practice, to relevant quality control and production records and the right of access to production facilities on an announced basis.

6. Compliance with section 3(b) shall be attested to by a signed statement of the Chief Executive Officer or the equivalent officer of the manufacturer. The EcoLogo[CM] Program shall be advised in writing immediately by the licensee of any non-compliance which may occur during the term of the license. On the occurrence of any non-compliance, the license may be suspended or terminated as stipulated in the license agreement.

Conditions for EcoLogo[CM] Use

7. The EcoLogo[CM] may appear on wholesale or retail packaging, or on the product itself, provided that the product meets the requirements in this document.

8. It is recommended that a criteria statement appear with the EcoLogo[CM] whenever the EcoLogo[CM] is used in association with the envelope. The intent of this statement is to provide clarification as to why the product was certified and to indicate constraints to which the certification is limited. This is to ensure no ambiguity over, or misrepresentation of, the reason(s) for certification.

   The suggested criteria statement wording for this product type is "*Envelopes*". The licensee may propose other wording for the criteria statement, but any such proposed wording must be approved by the EcoLogo[CM] Program.

9. All licensees and authorized users must comply with the Program's *Guide to Proper Use of the EcoLogo[CM]* regarding the format and usage of the EcoLogo[CM].

10. Any accompanying advertising must conform with the relevant requirements stipulated in this document, the license agreement and the Program's *Guide to Proper Use of the EcoLogo[CM]*.

For additional copies of this criteria document or for more information about the
EcoLogo[CM] Program, please contact:
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Appendix 1: Volatile Organic Compounds with Negligible Photochemical Reactivity

The list of volatile organic compounds (VOCs) designated by the EcoLogo[CM] Program as having negligible photochemical reactivity has been taken from the following two documents:

1. State of California Air Resources Board, Regulation for Reducing Volatile Organic Compound Emissions from Consumer Products, Appendix.
2. U.S. EPA VOC Definition, Federal Register, Volume 57, No. 22, 3 February 1992, Rules and Regulations, pg. 3945, sec.51.100.

This EcoLogo[CM] designated list includes the following compounds:

(a) acetone
(b) ammonium carbonate
(c) carbon monoxide
(d) carbonic acid
(e) ethane
(f) metallic carbides or carbonates
(g) methane
(h) methylene chloride (dichloromethane)
(i) cyclic, branched, or linear completely methylated siloxanes
(j) parachlorobenzotrifluoride (PCBTF)
(k) perchloroethylene (tetrachloroethylene)
(l) 1,1,1-trichloroethane
(m) trichlorofluoromethane (CFC-11)
(n) dichlorodifluoromethane (CFC-12)
(o) trichlorotrifluoroethane (CFC-113)
(p) dichlorotetrafluoroethane (CFC-114)
(q) chloropentafluoroethane (CFC-115)
(r) chlorodifluoromethane (HCFC-22)
(s) dichlorotrifluoroethane (HCFC-123)
(t) dichlorofluoroethane (HCFC-141b)
(u) chlorodifluoroethane (HCFC-142b)
(v) 2-chloro-1,1,1,2-tertrafluoroethane (HCFC-124)
(w) trifluoromethane (HFC-23)
(x) 1,1,1,2,3,4.4,5,5,5-decafluoropentane (HFC-43-10mee)
(y) pentafluoroethane (HFC-125)
(z) 1,1,2,2-tetrafluoroethane (HFC-134)
(aa) tetrafluoroethane (HFC-134a)
(bb) 1,1,1-trifluoroethane (HFC-143a)
(cc) 1,1-difluoroethane HFC-152a)
(dd) 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)
(ee) 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)
(ff) perfluorocarbons (classes of):
  (A) cyclic, branched, or linear, completely fluorinated alkanes
  (B) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations
  (C) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations
  (D) sulfur-containing perfluorocarbons with no unsaturations with the sulfur bonds only to carbon and fluorine

EcoLogo^{CM} Program Interpretation Document

VOC and Petroleum Distillate Content Printing Inks

Interpretation:

The EcoLogo^{CM} certification criteria documents for Printing Inks (CCD-040) currently states that, for heatset web offset inks, the total VOC content must not exceed 25% by weight and the ink must not be formulated or manufactured with a combined total of more than 25% by weight of petroleum distillates.

Until the next full review of CCD-040, the EcoLogo^{CM} Program will accept heatset web offset inks with a maximum total VOC content of 40% by weight and a maximum combined total petroleum distillate content of 40% by weight.

Basis for Interpretation:

The current standard for Printing Inks (CCD-040) cannot be met by any heatset web offset inks currently on the market because the requirements for VOC content and petroleum distillate content are too restrictive. After consultation with experts from the printing ink industry and an environmental assistance center for printers, it was concluded that the VOC and petroleum distillate limits for heatset web offset inks should be changed to:

- maximum total VOC content: 40% by weight
- maximum combined total petroleum distillate content: 40% by weight

Affected EcoLogo^{CM} Criteria Documents:

CCD-040 "Printing Inks"
CCD-079 "Business Forms"
CCD-080 "Envelopes"
CCD-156 "Business Directories"

Additional Notes:

A copy of the above certification criteria documents can be found at www.ecologo.org

Direct inquiries or comments to TerraChoice Environmental Marketing Inc.
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