



CPIMA

CANADIAN PRINTING INK MANUFACTURERS ASSOCIATION STATEMENT ON PRINTING INK AND THE ENVIRONMENT

The increased public awareness about environmental issues has led to the usage of the terms “environment friendly” and “eco-friendly”. These terms imply that a good or service will inflict minimal harm on the environment. Currently there is no existing international standard for these terms, and the International Organization for Standardization (I.S.O.) has deemed these terms too vague to be meaningful.

Several countries have developed federal guidelines to deter the use of misleading environmental claims. The Competition Bureau of Canada issued *CSA Standard Plus 14021 Environmental Claims: A Guide for Industry and Advertisers* in June 2009.

([http://www.competitionbureau.gc.ca/epic/site/cb-bc.nsf/vwapj/guide-for-industry-and-advertisers-en.pdf/\\$FILE/guide-for-industry-and-advertisers-en.pdf](http://www.competitionbureau.gc.ca/epic/site/cb-bc.nsf/vwapj/guide-for-industry-and-advertisers-en.pdf/$FILE/guide-for-industry-and-advertisers-en.pdf))

The U.S. Federal Trade Commission will issue an update to *16 C.F.R. Part 260: Guides for Use of Environmental Marketing Claims* in 2011.

(<http://www.ftc.gov/green>)

Environmental issues and printing inks

Renewable Resources: Vegetable oils and vegetable derived products have been used in the manufacture of lithographic printing inks for centuries. Water, also a renewable resource, is a major component of water-based flexographic inks. Solvent-based inks contain nitrocellulose, which is derived from cotton and similar cellulose materials.

Non-Renewable Resources: The Petrochemical industry provides pigments, resins, additives, petroleum distillates, solvents and other ingredients for manufacturing printing ink. Substituting renewable resources for these materials is limited by ink chemistry, printing method and customer end-use applications.

Volatile Organic Content (VOC): The VOC in an ink can range from almost zero to greater than 75% depending on the type of ink. Waterbase and Energy Curing (UV and EB) inks are at the low end of the range. Substitution of petroleum distillate by vegetable oils has shifted most Sheetfed Lithographic inks to below 15%. Heatset lithographic inks are in the 30 to 50% range while gravure inks are even higher. Reduction of VOC is limited by ink chemistry, printing method and customer end-use applications.

Biodegradability of Inks: Bulk, unused inks, whether water-based, vegetable-based, petroleum-based or solvent-based are not biodegradable and must be treated as liquid industrial waste (See CPIMA statement on Scrap Ink).



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Biodegradability of Printed Material: The biodegradability and recyclability of ink layers on a printed product depends primarily on the characteristics of the substrate not the ink. Printing ink layers are very thin (1 to 5 μm max.) and generally only partially cover the substrate.

Heavy Metal Content: The U.S. Toxics in Packaging Regulation (C.O.N.E.G.) and the European 94/62/EC Directive on Packaging and Packaging Waste have listed mercury, lead, cadmium and hexavalent chromium as contaminants with a potential for eco-toxicity. The total presence of these four metals is limited to below 100 ppm.

Sustainability: According to the CSA Plus 14021 Standard, “the concepts involved in sustainability are highly complex and are still under study. There are currently no definitive methods for measuring sustainability or confirming its accomplishment. Therefore, no claim of achieving sustainability shall be made.”

Carbon Footprint: Based on the best scientific data and calculations available to EuPIA, the European ink industry’s association, a rough estimate of CO₂ emissions per a *typical* ink is **100-200 grams** of CO₂ per kilogram of ink.

Which ink to use? The best practice for printers is to compare inks of equivalent runnability and end product characteristics. The ink that will create less environmental harm through reduced VOC emissions, reduced toxic contamination upon disposal, and reduced non-renewable resource content will be the more environmentally responsible choice.

The members of the C.P.I.M.A. are very interested in providing positive support for our customers’ efforts to lower their impact on the environment. Inks with lower VOC, higher renewable resource content and minimal heavy metal contamination are available. Please contact your supplier to discuss which inks will meet your environmental and product quality needs.