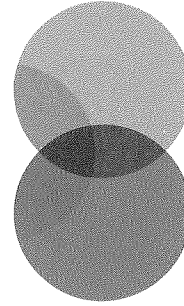


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Canadian Printing Ink Manufacturers' Association

Printing Inks And The City of Toronto Sewer Use Bylaw # 457-2000

The new Toronto sewer use bylaw establishes limits on the concentration of specified substances that can be discharged to the municipal sewers and requires that each industrial establishment prepare a pollution prevention plan that addresses the discharge of these 'Subject Pollutants' into their waste streams.

Members of the Canadian Printing Ink Manufacturers' Association make every effort to formulate environmentally responsible products using materials that pose minimal risk to health and the environment. The list of subject pollutants in the new bylaw does include some substances that are added to inks to impart specific properties, or are part of more complex chemical compounds that give inks a distinctive colour. These include;

Cobalt

- Cobalt is incorporated into the chemical structure of driers that can be added to sheet-fed inks. Elemental cobalt is present at levels of **0.0 – 0.1%** in finished inks.

Copper

- Copper is part of the chemical structure of cyan blue and green pigments. Elemental copper is present at levels of **0.0 – 1.8%** in colours based on green and blue inks.
- Copper is also a component of bronze powders that are used in metallic gold inks. Copper is present in a range of **25 – 40%** in metallic gold inks.

Molybdenum

- Molybdenum is part of the chemical structure of rhodamine, purple, violet and Victoria blue shade (072 Blue) pigments. Inks based on the red shade pigments would have **less than 3%** elemental molybdenum and inks based on the Victoria blue pigment would have **less than 6%**.

Zinc

- Zinc is a component of bronze powders that are used in metallic gold inks. Zinc is present in a range of **15 – 25%** in metallic gold inks.

Ethyl Benzene

- This reducer could be added to solvent based flexo inks in various amounts. Percentages used would be listed on the MSDS for the ink.

Xylene

- This reducer could be added to solvent based flexo or gravure inks in various amounts. Percentages used would be listed on the MSDS for the ink.

(continued ...)



Di-n-butyl phthalate

– This chemical is used as a plasticizer primarily in flexo inks at levels **less than 4 – 5%**.

Bis (2-ethylhexyl) phthalate

– This chemical is used as a plasticizer primarily in flexo inks at levels **less than 4 – 5%**.

Alkyl phenols

– Some oil based inks may contain an antioxidant that is classed as an alkylphenol. This chemical is also approved for use in small amounts in food packaging and in some foods. It could be added at levels of **0.0 – 0.2%** when is is used in inks.

If your ink supplier is not using any specific subject pollutant listed above, or is using subject pollutants that are not listed, in products supplied to your facility, you will be advised accordingly.

Subject pollutants may also be detected as trace contaminants in almost all the materials used in an industrial environment. Most of these materials are even detected in any water that is used. If any subject pollutants, that are not intentionally added, were present in printing inks they would be below any regulated minimums and would not contribute significant amounts in any sewer effluent.

In the litho process the amount of contact that inks may have with potential effluent is limited to the fountain solution used on press. The amount of contamination that may occur is difficult to determine because of the variables in the printing process and the fountain solution chemicals. Actual numerical data could only be obtained by testing the effluent. However, most fountain solutions already fall outside the parameters of material that can be discharged into the sewer under the new bylaw.

Printing inks are classified as liquid industrial wastes that should be disposed in accordance with current waste regulations (Ont, Reg. 558/00 and Reg. 347). When handled properly under current regulations there should be no direct discharge of any type of ink or press wash residue into sanitary or storm sewer effluent. Based on our knowledge of printing processes, members of the CPIMA would expect that the possibility of printing ink contamination in sanitary sewer effluent is extremely remote.

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Technical Committee
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