

What are VOCs and do printing related materials contain them?

By Debra Jacobson

VOCs are volatile organic compounds. They are defined as any organic compound which reacts in the presence of sunlight, with nitrogen oxides (NO_x) to form ozone. This lower level ozone combines with fine particles of dust and other material and contributes to smog formation. Although ozone is needed in the upper atmosphere, in the lower atmosphere (near the earth's surface) it acts as a lung irritant, causing health problems for all life, including animals and plants.

The Federal Clean Air Act Amendments were passed in 1990 to reduce the amount of common air pollutants and materials such as VOCs which contribute to ozone formation. Federal and state environmental protection agencies have been directed to develop and implement programs which will reduce emissions of these materials. As part of these programs facilities which emit or have the potential to emit VOCs, equal to or greater than the limits set by the U.S. EPA are required to reduce these emissions and may be required to obtain a permit from the U.S. EPA or the state in which the facility is located in.

VOCs may be found in the products used in pre-press departments. Items that may contain VOCs are chemicals used in film processing, color proofing, plate processing and cylinder preparation. Some of these materials may *contain* materials which are considered a VOC, but they do not readily evaporate (ex. plate developer). Therefore these materials are not considered an *emission* source. Other products, such as cleaning solvents, may contain VOCs that readily evaporate and *are* considered an emission source. You should consult your Material Safety Data Sheets (MSDS) or the Product Data Sheet (PDS) to verify whether the products currently used in the pre-press department contain VOCs.

In the pressroom, products that may contribute to VOC emissions include fountain solutions, press washes, inks and coatings; and floor cleaning products. Please keep in mind that although you are reducing your emissions by switching to alternative solvents, additives, and from petroleum or solvent based inks to vegetable based or water based inks these products still may contain VOCs. You should always refer to the MSDS or the PDS to verify the VOC content of these materials.

The law requires that your facility inventory the VOC emissions annually. The U.S. EPA developed the EPA Test Method 24 as a standard test to determine the amount of VOCs in inks, coatings, fountain solutions, and other products. The VOC information about each product is required to be listed on the MSDS or PDS. If you would like additional information about products that contain less VOCs or about the VOCs in the products you currently use, contact the manufacturer.

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