# ENVIRONMENTAL ASSESSMENT OF SHOP TOWEL USAGE IN THE AUTOMOTIVE AND PRINTING INDUSTRIES

by

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1996 the printing industry will use an insignificant quantity of chlorinated cleaners; therefore, chlorinated solvent usage is not analyzed. Potential substitutes for chlorinated solvents include 2-butoxy ethanol, N-methyl pyrrolidone, terpenes, low vapor pressure mixtures of aliphatic and aromatic petroleum distillates, and aqueous cleaners with surfactants (EPA, 1994). Table 3-4 is a list of chemicals in the printing industry that may be found on used shop towels. It is assumed that the VOC:semi-VOC ratio of contaminants in the printer shop towels will be 3:1.

TABLE 3-4. PRIMARY SHOP CONTAMINANTS FROM THE PRINTING INDUSTRY

| Press Cleaners | Ink/Varnish |
|---|---|
| Petroleum Distillates | Pigments– |
| Terpenes | Lead |
| Hexane | Chromium |
| Heptane | Cadmium |
| Toluene | Barium |
| Xylene | Copper |
| Ethanol | Petroleum Distillates |
| Methanol | Petroleum Naphtha |
| Isopropanol | Vm&P Naphtha |
| 2-Butoxy Ethanol | Lactol Spirits |
| Acetone | Xylene |
| Methyl Ethyl Ketone | Tri-Decanol |
| Glycol Ethers | Soybean & Vegetable Oils |
| Ammonia | Methyl Ethyl Ketone |
| Amines | Methyl Isobutyl Ketone |
| Fatty Acids | Acetone |
| Surfactants | Benzixothiasolin |
| Acetates | Ethylenediamine |
| | Ammonium Hydroxide |
| | Acrylate Monomers |
| | Isocyanates |
| | Acrylic |
| | Vinyl |
| | Acetates |
| | Esters |
| | Resins |
| | Rosin |

Source: Printing Industry and Use Cluster Profile, EPA 744-R-94-003, June 1994.

Automated press cleaners, which allow shortened down time and reduce solvent use, are replacing traditional manual press cleaning. Many newspaper companies now use dry-type (solvent-