Report to the Commission of the European Communities

DG XI (Environment)

REDUCTION OF VOLATILE ORGANIC COMPOUNDS FROM DRYCLEANING FACILITIES

M. Jourdan, O. Rentz

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EC-Contract No.: B 6611-90-005747.00
- procedures for introducing new or replacement machinery, substances or processes
- information on health, environmental and safety matters

5.2.3.6 Treating of Contact Water
Contact water has to be separated from cooling water and has not to be discharged into the sewer. Contact water treatment should take place for example, using a treatment process like activated carbon filter or stripping. By this equipment a solvent concentration of about 1 mg/1 water can be reached. More details are given in another EEC report (Contract No. 6612-41389) about technical and economic aspects of water pollution abatement measures for discharges from drycleaning firms /4/.

5.3 Solvent Substitution
At the present time there are several research projects on solvent substitution underway /22, 23, 24/. They are investigating the solvent R113, because of its contribution to the stratospheric ozone depletion, as well as PERC substitution, because of its potential cancerogenic risk. The only practical alternatives to R113 and PERC at the moment are petroleum fractions (aliphatic hydrocarbon mixtures), as used in Europe at the beginning of the century and as are still used in the USA and Japan. Petroleum fractions have one big disadvantage compared to R113 and PERC, as they are flammable and cannot be used within the existing drycleaning machines. In addition, substitution by petroleum will not reduce the amount of VOC emissions from the drycleaning sector, on the contrary, the use of petroleum may increase the effect on the formatic of tropospheric ozone. Another possibility for substituting the existing solvents in drycleaning could be the introduction of overcritical fluids, such as CO\(^\wedge\) at 300 bar, but the capital and operating costs are very high /25/.