



Full papers

**SURVEY ON THE TREATMENT OF GASEOUS
STREAMS CONTAINING VOLATILE ORGANIC
COMPOUNDS**

Oana Penciu*, Maria Gavrilescu

¹Technical University of Iasi, Faculty of Industrial Chemistry, Department of Environmental Engineering, Bd. D. Mangeron 71A, 700050 Iasi, Romania

Abstract

Volatile Organic Compounds (VOCs) are among the most common air pollutants emitted from chemical, petrochemical, and allied industries. Growing environmental awareness has put up stringent regulations to control the VOCs emissions. In such circumstances, it becomes mandatory for each VOCs emitting industry or facility to opt for proper VOCs control measures. There are many techniques available to control VOCs emission (destruction based and recovery based) with many advantages and limitations. The paper is a review on pollution control techniques of gaseous streams containing volatile organic compounds (VOC), focused on active control: end-of-pipe add-on abatement equipment, control technologies (overview of operation, applicability, advantages and challenges/disadvantages, some key design parameters). Selection criteria as: desired control efficiency (costs, future permitting strategy/flexibility, emission reduction); contaminant properties ; stream properties (concentration, flow rate, corrosivity/materials of construction/cost, heat content, vapor pressure, temperature); safety issues (flammability, explosivity); availability of existing pollution controls; collateral waste disposal issues; value of recovered material, were discussed.

Deciding on a particular technique becomes a difficult task, so that the paper intend to offer an analysis in order to facilitate the choice on the appropriate strategy to control VOCs.

Keywords: volatile organic compound (VOC), gaseous streams, adsorption, absorption, oxidation, biofiltration.

* Author to whom all correspondence should be addressed: Department of Environmental Engineering, Bd. D. Mangeron 71A, 700050 Iasi, Romania, e-mail: openciu@yahoo.co.uk