



VOC

Clearing the Air for Today and the Future:

Catalytic Solutions to Control Volatile Organic Compounds and Hazardous Air Pollutants

Typical VOC and HAPs Emissions From the Chemical and Process Industries

PROCESS	PROCESS TYPE	EMISSION TYPE
Surface Coating	• Wire Enameling	Cellosolve Acetate
	• Automobile Coating/Finishing	Ketones, Xylene, Toluene, Phenols
	• Acetate Finish Coating	Silicate Solution
	• Paper Coating/Packaging & Wood Products (e.g. furniture)	High-Boiling Organics, Latexes
	• Fiberglass Coating	Teflon Emulsion, Fiberglass, Synthetics, Styrene
	• Can Coating	Ketones, Alcohols, Aromatic Hydrocarbons, Ethers
	• Plastics Coating	
	• Textile Coating	
	• Film Coating	
	• Sheet Metal Coating (Metal Decorating)	Alcohols, Cellosolve Acetate, Phthalates, Solvesso
Printing & Converting	• Coil Coating	Phosphates, Solvesso, Cyclohexanol, Alcohols, Carbitols, Hydrocarbons
	• Flexographic Printing	Flexographic Ink Derivatives, Alcohols, Glycols
	• Lithographic Print/Paint	Butyl Cellosolve, Diacetone Alcohol, Solvesso, Cellosolve Acetate, Xylene, MIBK
	• Screen-Printing	
Solvents in Manufacturing	• Rotogravure	
	• Electronic Components (e.g. Semiconductor)	Butyl Acetate, Xylene, MEK, Cellosolve
	• Pharmaceuticals Manufacture	Isoproponol, Toluene, Hydrocarbons
	• Dry Cleaning	Perchlroethylene
	• Adhesives Manufacture	



Typical VOC and HAPs Emissions From the Chemical and Process Industries (cont.)

PROCESS	PROCESS TYPE	EMISSION TYPE
Chemical & Petrochemical	<ul style="list-style-type: none"> Formaldehyde (CH₂O) Purified Terephthalic Acid (PTA) Vinyl Chloride Monomer (VCM) Resin Manufacturing Petroleum Plant/Oil Cleaning Paints/Inks Manufacturing Alcohol Synthesis Maleic Anhydride (MA) Phthalic Anhydride (PA) 	Formaldehyde, Methanol, CO Methyl Bromide, Benzene, CO EDC, VCM Formaldehyde, Phenols, Phthalic Anhydride C ₁ , C ₂ , C ₃ , C ₆ Hydrocarbons Organic Acids
Soil Remediation & Hazardous Waste Sites	<ul style="list-style-type: none"> Soil Vapor Extraction (SVE) Air Stripping (Sparging) Low Temperature Thermal Desorption (LTTD) 	HVOC, Non-HVOC HVOC, Non-HVOC HVOC, Non-HVOC
Commercial & Industrial Processes	<ul style="list-style-type: none"> Coffee Roasting Bakeries Cooking (e.g. wood stoves, charbroilers, commercial ovens) Tobacco/Snuff Manufacture Hospital Sterilization Ovens Carbon Fiber Manufacturer Commercial Greenhouses (CHP) Misc. Food Processing (e.g. roasting, meat/fish smoking, meat rendering, transportation & storage of perishables) 	Heavy Oils from Coffee Beans Ethanol, Acetaldehyde Oils, VOC, Smoke, Odor VOC, Odor, Smoke Ethylene Oxide Ethylene, Methane Heavy Oils from Cocoa Beans, Peanuts, Smoke, Odor, Ethylene (Storage)

