

Advantages and disadvantages of competing air pollution techniques

Control Technology	Advantages	Disadvantages
Biofiltration	<ul style="list-style-type: none"> <input type="checkbox"/> Low operating costs <input type="checkbox"/> Effective removal of low concentrations <input type="checkbox"/> Low pressure drop <input type="checkbox"/> No further waste streams produced 	<ul style="list-style-type: none"> <input type="checkbox"/> Large footprint requirement <input type="checkbox"/> Medium deterioration will occur (Compaction, acidification) <input type="checkbox"/> Less suitable for high concentrations <input type="checkbox"/> Moisture and pH difficult to control <input type="checkbox"/> Particulate matter may clog biofilter bed
Biotrickling Filters	<ul style="list-style-type: none"> <input type="checkbox"/> Medium operating and capital Costs <input type="checkbox"/> Effective removal <input type="checkbox"/> Treats acid producing Contaminants <input type="checkbox"/> Low pressure drop 	<ul style="list-style-type: none"> <input type="checkbox"/> Clogging by biomass <input type="checkbox"/> More complex to construct and operate <input type="checkbox"/> Further waste streams produced (liquid)
Wet Scrubbing	<ul style="list-style-type: none"> <input type="checkbox"/> Medium capital costs <input type="checkbox"/> Can operate with particulate in Gas stream <input type="checkbox"/> Relatively small footprint <input type="checkbox"/> Ability to handle variable loads <input type="checkbox"/> Well proven technology 	<ul style="list-style-type: none"> <input type="checkbox"/> High operating costs <input type="checkbox"/> Reduced performance by scale deposit <input type="checkbox"/> Need for complex chemical feed systems <input type="checkbox"/> Does not remove most VOCs <input type="checkbox"/> Requires dangerous chemicals
Carbon Adsorption	<ul style="list-style-type: none"> <input type="checkbox"/> Short retention time/ small unit <input type="checkbox"/> Consistent operation <input type="checkbox"/> Moderate capital costs 	<ul style="list-style-type: none"> <input type="checkbox"/> High to extremely high operating costs <input type="checkbox"/> Carbon life reduced by moist gas stream <input type="checkbox"/> Creates secondary waste streams (spent Carbon) <input type="checkbox"/> Medium pressure drop
Incineration	<ul style="list-style-type: none"> <input type="checkbox"/> Effective removal of compounds Irrespective of nature and Concentration <input type="checkbox"/> Suitable for very high loads Performance is uniform and Reliable <input type="checkbox"/> Small footprint 	<ul style="list-style-type: none"> <input type="checkbox"/> High operating and capital costs <input type="checkbox"/> High flow/low concentration not cost-Effective <input type="checkbox"/> Usually requires fuel (CNG) <input type="checkbox"/> Creates a secondary waste stream (Nox) <input type="checkbox"/> Scrutinized by the public
Misting/ Fogging	<ul style="list-style-type: none"> <input type="checkbox"/> Low capital costs if any <input type="checkbox"/> Small footprint 	<ul style="list-style-type: none"> <input type="checkbox"/> Low chemical hang time <input type="checkbox"/> Human/animal chemical skin contact <input type="checkbox"/> Ineffective in most situations
Vapor Plus	<ul style="list-style-type: none"> <input type="checkbox"/> Extremely effective (rapid Mass transfer) <input type="checkbox"/> Small footprint <input type="checkbox"/> Very low vapor drop <input type="checkbox"/> Low capital costs (e.g., in stack Injection), low operating costs <input type="checkbox"/> Treatment not affected by Fluctuations (feedback control) 	