



Louisville Metro Air Pollution Control District

Control Device Permit Application Form AP-300K

Adsorber

Deliver application to:

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www.louisvilleky.gov/apcd
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Plant Name:	Plant ID:
Date of construction, modification, installation, or operation:	Process equipment associated with this control equipment:

Equipment Description	Control ID #	
Manufacturer:	Model:	
Adsorption Medium:		
Airflow:	Pressure differential:	
Removal Efficiency:	%	
Describe how the removal efficiency was determined: <i>(if other than Manufacturer's specification, include documentation supporting the claimed efficiency)</i>		
Breakthrough capacity:	Expected active lifetime:	
Attach a copy of the manufacturer's spec sheets for the equipment with this application		
<i>List the contaminants in the waste stream that are removed by the adsorbent</i>		
Contaminant	CAS # (if applicable)	Gas stream concentration

Regeneration	
Describe the regeneration/replacement trigger:	
<input type="checkbox"/> Regeneration of the adsorbent medium is NOT performed.	
Describe method of disposal of depleted adsorption medium if not regenerated:	
<input type="checkbox"/> Regeneration of the adsorbent medium IS performed.	
Expected regeneration frequency:	Expected replacement frequency:
Describe the disposition of adsorbed material during regeneration:	
Method of regeneration	<input type="checkbox"/> Steam <input type="checkbox"/> Hot air <input type="checkbox"/> On-site regeneration <input type="checkbox"/> Electric <input type="checkbox"/> Other: <input type="checkbox"/> Off-site regeneration

Instructions for Adsorption Systems Form AP-300K

Adsorption is a control where gaseous pollutants are extracted from gas phase and concentrated at the surface of a solid or liquid.

General Information

Plant Name Enter the plant name.
Plant ID # This is the identification number assigned to the source by the District. If this application is for a new source for which an ID has not been assigned, leave this blank.

Equipment Description

Manufacturer Enter the name of the company that manufactures the adsorption equipment.
Model Enter the model number of the equipment to be installed.
Adsorption Medium Describe the active adsorption medium used in the system. If the material is not described in the manufacturer's spec sheet for the equipment, include separate manufacturer's data for the adsorption medium.
Airflow Enter the mean volumetric flow rate of the gas stream through the oxidizer in actual cubic feet per minute, measured at the chamber operating temperature.
Pressure Enter the nominal pressure drop across the fresh adsorption bed.
Removal efficiency Indicate the claimed removal efficiency of the gas stream contaminants. If this varies for various components of the gas stream, specify details in the contaminant list section.
Efficiency determination Indicate how the destruction efficiency was determined. (*e.g.* manufacturer's specification, calculation, stack test, *etc.*) Include appropriate documentation to support destruction efficiency claims.
Breakthrough capacity Enter the capacity of the bed at which contaminant vapors begin to be found in the exhaust stream (in amounts exceeding that expected based on the removal efficiency.)
Active lifetime Enter the expected service life of the adsorption medium before replacement is required.
Contaminant list List the materials that are removed from the airstream by the oxidizer. If a CAS registration number exists for the material, list that as well. Finally, list the typical concentration of the contaminant in the exhaust gas stream.

Regeneration

Trigger Describe the mechanism or monitoring parameter that will indicate that regeneration or replacement of the adsorption medium is required.
Disposal If the adsorption medium is NOT regenerated, check the appropriate box and describe how the medium is disposed of, including a description of how assurance that the adsorbed contaminants are not released into the atmosphere is achieved.
Regeneration frequency Enter how often it is expected that regeneration will be required, based on contaminant concentration in the exhaust stream and the breakthrough capacity of the medium.
Replacement frequency Enter how often it is expected that it will be necessary to replace the adsorption medium whether due to material breakdown, poisoning, or other causes.
Disposition Describe how the adsorbed contaminants are prevented from being re-emitted into the atmosphere after they are desorbed from the medium during regeneration.
Regeneration Method Check the box corresponding to the method of regeneration. If the method is "Other," describe the method.
Location Check whether the regeneration occurs at the permitted location or at an off-site regeneration facility.