

SEE INSTRUCTIONS ON REVERSE SIDE

Section A

1. Facility name:	2. Facility identification number:
3. Stack identification number:	4. Unit identification number:
5. Control device number:	
6. Manufacturer and model number:	
7. Date of installation:	
8. Describe the adsorber to be used. Attach a diagram of the system. <span style="float:right">Attached?</span>	

9. List the pollutants to be controlled by this equipment and the expected control efficiency for each pollutant on the table below.

Documentation is attached

Pollutant	Inlet pollutant concentration		Hood capture efficiency (%)	Outlet pollutant concentration		Efficiency (%)
	gr/acf	ppmv		gr/acf	ppmv	

10. Gas flow rate (ACFM):	11. Gas temperature at the inlet (°F):
12. Bed operating temperature (°F):	

13. Discuss how the collected material will be handled for reuse or disposal.

14. Prepare a malfunction prevention and abatement plan (if required under s. NR 439.11) for this pollution control system. Please include the following:
- a. Identification of the individuals(s), by title, responsible for inspecting, maintaining and repairing this device.
  - b. Operation variables such as temperature that will be monitored in order to detect a malfunction or breakthrough, the correct operating range of these variables, and a detailed description of monitoring or surveillance procedures that will be used to show compliance.
  - c. What type of monitoring equipment will be provided (temperature sensors, pressure sensors, CEMs).
  - d. An inspection schedule and items or conditions that will be inspected.
  - e. A listing of materials and spare parts that will be maintained in inventory.
  - f. Is this plan available for review?

Section B

The following questions must be answered by sources installing new equipment or existing Units which cannot document control efficiency of this device by other means.

15. Describe gas pretreatment methods:	
16. Breakthrough capacity in lb. vapor/lb. adsorbent:	17. Partial pressure(s) of all pollutants in the inlet gas:
18. Describe the adsorption medium:	
19. Bed void space (ft <sup>3</sup> ):	20. Dimensions of the adsorption bed (ft.):
21. Porosity (%):	22. Maximum gas velocity through the device (ft./min):
23. Indicate if the bed material is disposable. Discuss method of disposal or regeneration method. Provide a schedule of bed replacement or regeneration.	

**CONTROL EQUIPMENT - ADSORBERS -- Form 4530-112**  
**AIR POLLUTION CONTROL PERMIT APPLICATION INSTRUCTIONS**

NOTE: Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis. Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this application form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

Complete one form for each control device used to reduce air pollution emissions from the air pollution sources to be covered by the permit.

- Item 1 Provide the name of the facility.
- Item 2 Provide facility identification (FID) number that appears on the annual emissions inventory reports.
- Item 3 Provide the identification number of the stack exhausting this device. Use the same number used on Form 4530-103.
- Item 4 Provide the identification number from the appropriate source Form 4530-104, -105, -106, -107, -108, or -109 completed for the emissions unit(s) that will have its emissions reduced by this control equipment.
- Item 5 Assign an identification number to this control equipment such as C01. Use this number when referring to this device throughout the rest of your application.
- Item 6 Indicate the equipment manufacturer and its model number.
- Item 7 Provide the installation date of this device. If this is a new device, indicate that it is new.
- Item 8 Describe the device in detail indicating whether it uses a fixed, moving or fluidized bed, if it involves multiple beds, if solvent is recycled (for fluidized beds), and any other relevant information. Also include calculations and design parameters used to determine adsorber type and size. Attach a blueprint or diagram of the device which clearly shows all equipment parts necessary for successful operation. Manufacturer's literature may be used. (Attach extra sheets if needed; Form 4530-135 may be used for this purpose.)
- Item 9 For each pollutant controlled, enter the inlet pollutant concentration, hood capture efficiency, outlet pollutant concentration, and the overall efficiency of the control device for each pollutant emitted. Data entered in this table **MUST BE DOCUMENTED**, either by stack test or manufacturer supplied guarantees or by other means approved by the Department. Please indicate (by checking the box) that this information is attached to this form. If you cannot complete this table or fail to provide sufficient documentation, you will have to fill out section B of this form or your permit application will be considered incomplete.
- Item 10 Indicate the volumetric gas flow rate in actual cubic feet per minute.
- Item 11 Give the gas temperature at the inlet in degrees fahrenheit.
- Item 12 Give the operating temperature range of the bed in degrees fahrenheit.
- Item 13 Discuss the fate of the collected material how it will be contained, transported, and its ultimate destination for disposal. Examples of ultimate disposal include the local wastewater treatment plant or landfill. Describe any waste recycling or reuse.
- Item 14 Prepare a malfunction prevention and abatement plan according to sec. NR 439.11, Wis. Adm. Code. Please be as detailed as possible, keeping in mind that the rule contains more detail than appears at Item 14 of this form. While it is not necessary to submit this plan with the permit application, the Department may at any time request a copy of this plan from the facility.

Section B - This section must be completed by sources installing new equipment or by existing sources which cannot otherwise document the control efficiency of this device (such as with current stack test results). **IF YOU HAVE ALREADY SUBSTANTIATED THE CONTROL EFFICIENCY OF THE DEVICE AT ITEM 9 ABOVE, YOU DO NOT NEED TO COMPLETE SECTION B.**

- Item 15 Describe any gas pretreatment methods, such as heating, cooling, or passing gas through a dust collection device prior to adsorption.
- Item 16 Give the breakthrough capacity in pounds of vapor per pound of adsorbent. This is the capacity of the bed at which unreacted vapors begin to be exhausted.
- Item 17 Describe the composition of the inlet gas stream. Give the partial pressures of each component.
- Item 18 Describe the chemical composition of the bed material. Include manufacturer's literature if available.
- Item 19 Give the void volume of the bed in cubic feet. This is the empty space between the bed particles.
- Item 20 Give the dimensions of the adsorber bed, either length, width, and height, or bed depth and radius, in feet. If only the bed volume is available, the bed depth must also be indicated. This is the dimension parallel to the gas flow.
- Item 21 Give the porosity of the bed particles. This is the percent of the total particle volume that is pore space.
- Item 22 Indicate the maximum gas velocity through the device in feet per minute.
- Item 23 Indicate your plan for disposal of spent bed material and/or your method and schedule of bed regeneration.