

**CONSTRUCTION PERMIT  
OFFICE OF AIR MANAGEMENT**

**Aker Plastics Co., Inc.  
1400 Pidco Drive  
Plymouth, Indiana 46563**

is hereby authorized to construct  
the equipment listed in Page 2 of this permit.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP 099-9728-00035	
Issued by:  Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

- (a) One (1) gelcoat/barrier coat booth, equipped with one (1) barrier coat gun, known as EU-1, and one (1) gelcoat gun, known as EU-2, equipped with dry filters for PM overspray control, capacity: increasing from forty-eight (48) fiberglass tubs and sixteen (16) fiberglass showers per eight (8) hour shift to ninety-six (96) fiberglass tubs and thirty-two (32) fiberglass showers per eight (8) hour shift.
- (b) One (1) chop line, equipped with three (3) chop guns, known EU-3, EU-4 and EU-5, equipped with dry filters for PM overspray control, capacity: increasing from forty-eight (48) fiberglass tubs and sixteen (16) fiberglass showers per eight (8) hour shift to ninety-six (96) fiberglass tubs and thirty-two (32) fiberglass showers per eight (8) hour shift.
- (c) Two (2) natural gas-fired air make-up units, known as EU-6 and EU-7, rated at 5.04 and 2.31 million British thermal units per hour, respectively.
- (d) Seventeen (17) natural gas-fired radiant heaters, known as EU-26 through EU-42, rated at 0.100 million British thermal units per hour each.
- (e) Two (2) natural gas-fired radiant heaters, known as EU-43 and EU-44, rated at 0.125 and 0.240 million British thermal units per hour, respectively.
- (f) Cutting and grinding operations consisting of four (4) floor (skirt) saws, four (4) grinders, two (2) air saws, one (1) table saw, and two (2) drills, known as EU-12 through EU-24, respectively, equipped with a cyclone dust collector for PM control, known as EU-25, capacity: ninety-six (96) fiberglass tubs and thirty-two (32) fiberglass showers per eight (8) hour shift.

### **Construction Conditions**

#### General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

#### Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

#### First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
  - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
  - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
  - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
  - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
  - (e) The Permittee has submitted their Part 70 (T 099-6007) application on May 31, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

### **Operation Conditions**

#### General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

#### Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
  - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
  - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

#### Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
- (a) In the event that ownership of these fiberglass tub and shower manufacturing facilities are changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
  - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
  - (c) The OAM shall reserve the right to issue a new permit.

#### Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
- (a) Violation of any conditions of this permit.

- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

Malfunction Condition

7. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):
- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
  - (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
  - (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2 (a)(1) through (6).
  - (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Annual Emission Reporting

8. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:

Indiana Department of Environmental Management  
Technical Support and Modeling Section, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

9. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
- (a) visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings.
  - (b) visible emissions shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

10. Particulate Matter (PM) Limitation

That pursuant to 326 IAC 6-3 (Process Operations), the cyclone dust collector shall be in operation at all times when cutting and grinding are in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 5.09 pounds per hour. This limitation will also make 326 IAC 2-2 or 2-3 not applicable.

Dust Collector Operating Condition

11. That the dust collector shall be operated at all times when cutting and grinding are in operation.
- (a) An inspection shall be performed each calendar quarter of the dust collector. Defective dust collectors shall be replaced. A record shall be kept of the results of the inspection and the number of dust collectors replaced.
  - (b) In the event that a dust collector's failure has been observed:
    - (i) The affected compartments will be shut down immediately until the failed units have been replaced.
    - (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

12. That visible emission notations of all exhaust to the atmosphere from the cyclone dust collector and the fiberglass booths shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
- (a) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start up or shut down time.

- (b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
- (c) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
- (d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Fugitive Dust Emissions

13. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

14. That pursuant to 326 IAC 6-3 (Process Operations):

- (a) The dry filters for particulate matter overspray control shall be in operation at all times when the fiberglass spraying operations are being performed.
- (b) The fiberglass spraying operations shall comply with 326 IAC 6-3-2(c) using the following equation:  
  
(use this equation if P is equal to or less than 60,000 pounds per hour (30 tons per hour):  
  
$$E = 4.10P^{0.67}$$
 where: E = rate of emission in pounds per hour,  
P = process weight in tons per hour.
- (c) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the filters.
- (d) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

BACT Condition and Minor PSD Source Limit

15. (a) Pursuant to 326 IAC 8-1-6, the following emission limit, equipment specifications and work practices shall be used at all times during the fiberglass operations performed in the gelcoat/barrier coat booth and chop line. BACT for these facilities shall be satisfied by the requirements specified in part (b) of this condition which shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.
- (b) Pursuant to 326 IAC 8-1-6, the best achievable control technology (BACT) for the gelcoat/barrier coat booth and chop line shall be the following:
- (1) Use of resins, gel coats, clean-up solvents and other materials containing volatile organic compounds (VOC) shall be limited such that the potential to emit (PTE)

VOC from the entire source, shall be less than 250 tons per twelve (12) consecutive months. Compliance with this limit shall be determined based upon the following criteria:

- (i) Monthly usage by weight, monomer content, method of application, and other emission reduction techniques for each gel coat and resin shall be recorded. Volatile organic compounds emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content, method of application, and other emission reduction techniques for each gel coat and resin, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.
  - (ii) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA-approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries", Composites Fabricators Association, February 28, 1998, or its updates and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.
- (2) Resins and gel coats used, including filled resins and tooling resins and gel coats, shall be limited to maximum monomer contents of 35 percent (35%) by weight for resins, 37 percent (37%) by weight for gel coats or their equivalent on an emissions mass basis. Monomer contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these monomer content limits shall be demonstrated on a monthly basis.

The use of resins with monomer contents lower than 35%, gel coats with monomer contents lower than 37%, and/or additional emission reduction techniques approved by IDEM, OAM, may be used to offset the use of resins with monomer contents higher than 35%, and/or gel coats with monomer contents higher than 37%. Examples of other techniques include, but are not limited to, lower monomer content resins and gel coats, closed molding, vapor suppression, vacuum bagging, controlled spraying, or installing a control device with an overall reduction efficiency of 95%. This is allowed to meet the monomer content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

(Emissions from >35% resin or >37% gel coat) - (Emissions from 35% resin or 37% gel coat) # (Emissions from 35% resin or 37% gel coat) - (Emissions from <35% resin, <37% gel coat, and/or other emission reduction techniques).

Where: Emissions, lb or ton = M (mass of resin or gel coat used, lb or ton)  
\* EF (Monomer emission factor for resin or gel coat used, %);

EF, Monomer emission factor = emission factor, expressed as % styrene emitted per weight of resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.

- (3) Flow coaters, a type of non-spray application technology of a design and specifications to be approved by IDEM, OAM, shall be used to apply 100% of all neat resins by January 1, 2000.

If after January 1, 2000, it is not possible to apply a portion of neat resins with flow coaters, equivalent emissions reductions must be obtained via use of other techniques, elsewhere in the process.

- (4) Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.

HVLP spray is the technology used to apply material to substrate by means of application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

- (5) The listed work practices shall be followed:
- (i) To the extent possible, a non-VOC, non-HAP solvent shall be used for cleanup.
  - (ii) Cleanup solvent containers used to transport solvent from drums to work stations shall be closed containers having soft gasketed spring-loaded closures.
  - (iii) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
  - (iv) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.
  - (v) All solvent sprayed during cleanup or resin changes shall be directed into containers. Such containers shall be closed as soon as solvent spraying is complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.
  - (vi) Storage containers used to store VOC- and/or HAP- containing materials shall be kept covered when not in use.

Volatile Organic Compounds (VOC)

16. Compliance with the monomer content and usage limitations contained in Operation Condition 15 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the manufacturer. However, IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Record Keeping and Reporting Requirements

17. (a) A log of information necessary to document compliance with operation permit Condition No. 15 shall be maintained. These records shall be taken monthly and shall include the following:
- (1) The usage by weight and monomer content of each resin and gel coat. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used;
  - (2) Coating, thinner, clean up solvent, and all other VOC emitting materials usage, and material safety data sheets (MSDS);
  - (3) A log of dates of use;
  - (4) Total VOC usage for each month;
  - (5) Method of application and other emission reduction techniques for each resin and gel coat used; and
  - (6) The calculated total VOC emissions from resin and gel coat use for each month.

Records shall be kept for at least the past 36-month period and made available upon request to the Office of Air Management (OAM).

- (b) A quarterly summary shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within 30 days after the end of the quarter being reported in the format attached. These reports shall include the volatile organic compounds (VOC) emissions from Gelcoat/Barrier Coat Booth and Chop Line Fiberglass Operations.

- (c) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
- (1) Delivered by U.S. mail and postmarked on or before the date it is due; or
  - (2) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.

- (d) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (e) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.
- (f) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Open Burning

18. That the Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

Emergency Reduction Plans

19. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within 180 calendar days from the issuance date of this permit.

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

**MALFUNCTION REPORT**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6  
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ?\_\_\_\_, 100 LBS/HR VOC ?\_\_\_\_, 100 LBS/HR SULFUR DIOXIDE ?\_\_\_\_ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ?\_\_\_\_ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION \_\_\_\_\_.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC \_\_\_\_\_ OR, PERMIT CONDITION # \_\_\_\_\_ AND/OR PERMIT LIMIT OF \_\_\_\_\_

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ?    Y        N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ?    Y        N

COMPANY: \_\_\_\_\_ Aker Plastics Co., Inc. \_\_\_\_\_ PHONE NO. \_\_\_\_\_ 219 - 936 - 3838 \_\_\_\_\_

LOCATION: (CITY AND COUNTY) \_\_\_\_\_ Plymouth / Marshall \_\_\_\_\_

PERMIT NO. \_\_\_\_\_ 099-9728 \_\_\_\_\_ AFS PLANT ID: \_\_\_\_\_ 099-00035 \_\_\_\_\_ AFS POINT ID: \_\_\_\_\_ INSP: \_\_\_\_\_

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: \_\_\_\_\_

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/ 19\_\_\_\_ \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE \_\_\_\_/\_\_\_\_/ 19\_\_\_\_ \_\_\_\_\_ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: \_\_\_\_\_

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_

INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

**Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

**326 IAC 1-6-1 Applicability of rule**

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO<sub>2</sub>, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

**326 IAC 1-2-39 "Malfunction" definition**

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2373)

**\*Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**Quarterly Report**

Source Name: Aker Plastics Co., Inc.  
Source Address: 1400 Pidco Drive, Plymouth, Indiana 46563  
Mailing Address: P.O. Box 484, Plymouth, Indiana 46563  
Permit No.: CP 099-9728-00035  
Facility: Gelcoat/Barrier Coat Booth and Chop Line Fiberglass Operations  
Parameter: Volatile Organic Compounds Emissions  
Limit: Two Hundred and Forty-nine (249) Tons Per Consecutive Twelve (12) Month Period.

YEAR: \_\_\_\_\_

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.

Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Indiana Department of Environmental Management  
Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

**Source Background and Description**

**Source Name:** Aker Plastic Co., Inc.  
**Source Location:** 1400 Pidco Drive, Plymouth, Indiana 46563  
**County:** Marshall  
**Construction Permit No.:** CP 099-9728-00035  
**SIC Code:** 3088  
**Permit Reviewer:** Mark L. Kramer

The Office of Air Management (OAM) has reviewed an application from Aker Plastics Co., Inc. relating to the construction and operation of fiberglass tub and shower manufacturing facilities, consisting of the following equipment:

- (a) One (1) gelcoat/barrier coat booth, equipped with one (1) barrier coat gun, known as EU-1, and one (1) gelcoat gun, known as EU-2, equipped with dry filters for PM overspray control, capacity: increasing from forty-eight (48) fiberglass tubs and sixteen (16) fiberglass showers per eight (8) hour shift to ninety-six (96) fiberglass tubs and thirty-two (32) fiberglass showers per eight (8) hour shift.
- (b) One (1) chop line, equipped with three (3) chop guns, known EU-3, EU-4 and EU-5, equipped with dry filters for PM overspray control, capacity: increasing from forty-eight (48) fiberglass tubs and sixteen (16) fiberglass showers per eight (8) hour shift to ninety-six (96) fiberglass tubs and thirty-two (32) fiberglass showers per eight (8) hour shift.
- (c) Two (2) natural gas-fired air make-up units, known as EU-6 and EU-7, rated at 5.04 and 2.31 million British thermal units per hour, respectively.
- (d) Seventeen (17) natural gas-fired radiant heaters, known as EU-26 through EU-42, rated at 0.100 million British thermal units per hour each.
- (e) Two (2) natural gas-fired radiant heaters, known as EU-43 and EU-44, rated at 0.125 and 0.240 million British thermal units per hour, respectively.
- (f) Cutting and grinding operations consisting of four (4) floor (skirt) saws, four (4) grinders, two (2) air saws, one (1) table saw, and two (2) drills, known as EU-12 through EU-24, respectively, equipped with a cyclone dust collector for PM control, known as EU-25, capacity: ninety-six (96) fiberglass tubs and thirty-two (32) fiberglass showers per eight (8) hour shift.

This modification to an existing registered source will remove the limit of twenty-four (24) tons per year for VOC emissions and utilize the presumptive fiberglass BACT to satisfy the requirements of 326 IAC 8-1-6 (New facilities: general reduction requirements) with a VOC emission limit of 249 tons per year.

**Stack Summary**

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
ST-1	barrier/gelcoat	28	3.0	15,000	80
ST-2,3	chop line	27	2.8	20,000	80
ST-4,5,6,7	storage tanks	18	0.25	-	80
ST-8	sawing	20	0.42	883	80
ST-9,23	radiant heaters	18	0.42	-	100

**Enforcement Issue**

IDEM is aware that the cutting and grinding operations has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules. Therefore, OAM is forwarding an enforcement referral to the Office of Enforcement (OE) regarding this issue.

Even prior to the proposed installation of these operations, the source has been determined to be subject to Part 70 Permit Program, but the source has submitted the appropriate application.

**Recommendation**

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 28, 1998, with additional information received on August 13, October 5 and October 7, 1998

**Emissions Calculations**

See pages 1 through 4 of 4 of Appendix A (Emissions Calculation Spreadsheets) for detailed calculations from fiberglass and natural gas combustion.

**Grinding**

The potential particulate matter emissions from grinding after controls are detailed as follows:

$$\frac{1,589 \text{ ft}^3}{\text{min}} \times \frac{0.0142 \text{ gr}}{\text{ft}^3} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{1 \text{ lb}}{7,000 \text{ gr}} \times \frac{8,760 \text{ hr}}{\text{yr}} \times \frac{\text{ton}}{2,000 \text{ lb}} = 0.847 \text{ tons/yr PM}$$

Cyclone efficiency: 99.89%

Grain loading: 0.0142 gr/ft<sup>3</sup>

Air flow rate: 1,589 acfm

The potential particulate matter emissions before controls are  $0.847/(1-.9989)$  or 770 tons per year.

**Total Potential and Allowable Emissions**

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

<b>Pollutant</b>	<b>Allowable Emissions (tons/yr)</b>	<b>Potential Emissions (tons/yr)</b>
Particulate Matter (PM)	865	1,616
Particulate Matter (PM <sub>10</sub> )	1,616	1,616
Sulfur Dioxide (SO <sub>2</sub> )	0.024	0.024
Volatile Organic Compounds (VOC)	308	308
Carbon Monoxide (CO)	1.04	1.04
Nitrogen Oxides (NO <sub>x</sub> )	4.07	4.07
Single Hazardous Air Pollutant (HAP)	308	308
Combination of HAPS	308	308

- (a) Allowable particulate matter emissions are determined from the applicability of rule 326 IAC 6-3. See attached spreadsheets for detailed calculations and calculation of allowable PM from grinding in the discussion on state rules.
- (b) The allowable emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of volatile organic compounds and PM<sub>10</sub> are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.
- (d) Allowable emissions (as defined in the Indiana Rule) of a single hazardous air pollutant (HAP) are greater than 10 tons per year and the allowable emissions of any combination of the HAPS are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is required.

**County Attainment Status**

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Marshall County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Marshall County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD applicability.

**Source Status**

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	0.00
PM <sub>10</sub>	0.00
SO <sub>2</sub>	0.00
VOC	24.0
CO	0.00
NO <sub>x</sub>	0.00

(a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

(b) These emissions were based on Registered Construction and Operation Status issued June 2, 1987 which limited VOC emissions to twenty-four (24) tons per year.

**Proposed Modification**

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	SO <sub>2</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO <sub>x</sub> (tons/yr)
Proposed Modification	6.75	6.75	0.024	249.2	1.04	4.07
PSD Threshold Level	250	250	250	250	250	250

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

### **Part 70 Permit Determination**

#### 326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T 099-6007-00035) application on May 31, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

### **Federal Rule Applicability**

There are no New Source Performance Standards (326 IAC 12) 40 CFR Part 60 and NESHAPS 40 CFR Part 63 applicable to this facility.

### **State Rule Applicability**

#### 326 IAC 2-1-3.4 (New source toxics control)

This rule does not apply to modifications of existing facilities such as the proposed increase in capacity.

#### 326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source potentially emits more than 100 tons per year of VOC in Marshall County. Pursuant to this rule, the owner/ operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

#### 326 IAC 5-1-2 (Visible Emission Limitations)

This source is subject to 326 IAC 5-1-2 except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings and shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

#### 326 IAC 6-3-2 (Particulate Emission Limitations)

- (a) The fiberglass spray operations shall comply with 326 IAC 6-3-2(c). The 326 IAC 6-3-2 equations are as follows:  $E = 4.10 P^{0.67}$ , where P equals process weight in tons per hour for process weights up to and including sixty thousand (60,000) pounds per hour and E equals the allowable emission rate in pounds per hour. For process weights in excess of sixty thousand (60,000) pounds per hour,  $E = 55.0 P^{0.11} - 40$ .
- (b) The grinding operations shall comply with 326 IAC 6-3-2(c). The 326 IAC 6-3-2 equation governing grinding is  $E = 4.10 P^{0.67}$ , where P equals process weight in tons per hour for process weights up to and including sixty thousand (60,000) pounds per hour and E equals

the allowable emission rate in pounds per hour. The raw material weight for grinding is 1.38 tons per hour which equates to an allowable PM emission rate of 5.09 pounds per hour (22.3 tons per year). Thus, the potential PM emissions after the cyclone of 0.847 tons per year comply with this rule.

326 IAC 8-1-6 (New facilities: General reduction requirements) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

Since this coating source has the potential to emit more than 25 tons per year of VOC, 326 IAC 8-1-6 could be applicable. This source has agreed to the presumptive fiberglass BACT conditions as follows:

Pursuant to the BACT determination under 326 IAC 8-1-6, operating conditions for the new fiberglass operations shall be the following:

- (a) Use of resins, gel coats, clean-up solvents and other materials containing volatile organic compounds (VOC) shall be limited such that the potential to emit (PTE) VOC from the entire source, shall be less than 250 tons per twelve (12) consecutive months. Compliance with this limit shall be determined based upon the following criteria and makes the requirements of 326 IAC 2-2 not applicable:
  - (1) Monthly usage by weight, monomer content, method of application, and other emission reduction techniques for each gel coat and resin shall be recorded. Volatile organic compounds emissions shall be calculated by multiplying the usage of each gel coat and resin by the emission factor that is appropriate for the monomer content, method of application, and other emission reduction techniques for each gel coat and resin, and summing the emissions for all gel coats and resins. Emission factors shall be obtained from the reference approved by IDEM, OAM.
  - (2) Until such time that new emissions information is made available by U.S. EPA in its AP-42 document or other U.S. EPA-approved form, emission factors shall be taken from the following reference approved by IDEM, OAM: "CFA Emission Models for the Reinforced Plastics Industries", Composites Fabricators Association, February 28, 1998, and shall not exceed 32.3% styrene emitted per weight of gel coat applied and 17.7% styrene emitted per weight of resin applied. For the purposes of these emission calculations, monomer in resins and gel coats that is not styrene shall be considered as styrene on an equivalent weight basis.
- (b) Resins and gel coats used, including filled resins and tooling resins and gel coats, shall be limited to maximum monomer contents of 35 percent (35%) by weight for resins, 37 percent (37%) by weight for gel coats or their equivalent on an emissions mass basis. Monomer contents shall be calculated on a neat basis, i.e., excluding any filler. Compliance with these monomer content limits shall be demonstrated on a monthly basis.

The use of resins with monomer contents lower than 35%, gel coats with monomer contents lower than 37%, and/or additional emission reduction techniques approved by IDEM, OAM, may be used to offset the use of resins with monomer contents higher than 35%, and/or gel coats with monomer contents higher than 37%. Examples of other techniques include, but are not limited to, lower monomer content resins and gel coats, closed molding, vapor sup-

pression, vacuum bagging, controlled spraying, or installing a control device with an overall reduction efficiency of 95%. This is allowed to meet the monomer content limits for resins and gel coats, and shall be calculated on an equivalent emissions mass basis as shown below:

(Emissions from >35% resin or >37% gel coat) - (Emissions from 35% resin or 37% gel coat) # (Emissions from 35% resin or 37% gel coat) - (Emissions from <35% resin, <37% gel coat, and/or other emission reduction techniques).

Where: Emissions, lb or ton = M (mass of resin or gel coat used, lb or ton) \* EF (Monomer emission factor for resin or gel coat used, %);

EF, Monomer emission factor = emission factor, expressed as % styrene emitted per weight of resin applied, which is indicated by the monomer content, method of application, and other emission reduction techniques for each gel coat and resin used.

- (c) Flow coaters, a type of non-spray application technology of a design and specifications to be approved by IDEM, OAM, shall be used to apply 100% of all neat resins by January 1, 2000.

If after January 1, 2000 it is not possible to apply a portion of neat resins with flow coaters, equivalent emissions reductions must be obtained via use of other techniques, elsewhere in the process.

- (d) Optimized spray techniques according to a manner approved by IDEM shall be used for gel coats and filled resins (where fillers are required for corrosion or fire retardant purposes) at all times. Optimized spray techniques include, but are not limited to, the use of airless, air-assisted airless, high volume low pressure (HVLP), or other spray applicators demonstrated to the satisfaction of IDEM, OAM, to be equivalent to the spray applicators listed above.

HVLP spray is the technology used to apply material to substrate by means of application equipment that operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

- (e) The listed work practices shall be followed:
- (1) To the extent possible, a non-VOC, non-HAP solvent shall be used for cleanup.
  - (2) Cleanup solvent containers used to transport solvent from drums to work stations shall be closed containers having soft gasketed spring-loaded closures.
  - (3) Cleanup rags saturated with solvent shall be stored, transported, and disposed of in containers that are closed tightly.
  - (4) The spray guns used shall be the type that can be cleaned without the need for spraying the solvent into the air.

- (5) All solvent sprayed during cleanup or resin changes shall be directed into containers. Such containers shall be closed as soon as solvent spraying is complete and the waste solvent shall be disposed of in such a manner that evaporation is minimized.
- (6) Storage containers used to store VOC- and/or HAP- containing materials shall be kept covered when not in use.

### **Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) This proposed modification will emit levels of air toxics greater than those that constitute major source applicability according to Section 112 of the Clean Air Act. The concentrations of these air toxics were modeled and found to be (in worst case possible) as follows: The concentrations of these air toxics were compared to the Permissible Exposure Limits (PEL) developed by the Occupational Safety and Health Administration (OSHA).
- (b) See attached spreadsheets for detailed air toxic calculations.

### **Conclusion**

The construction of these fiberglass tub and shower manufacturing facilities will be subject to the conditions of the attached proposed **Construction Permit No. CP 099-9728-00035**.

**Indiana Department of Environmental Management  
Office of Air Management**

Addendum to the  
Technical Support Document for New Construction and Operation

**Source Name:** Aker Plastics Co., Inc.  
**Source Location:** 1400 Pidco Drive, Plymouth, Indiana 46563  
**County:** Marshall  
**Construction Permit No.:** CP 099-9728-00035  
**SIC Code:** 3088  
**Permit Reviewer:** Mark L. Kramer

On December 8, 1998, the Office of Air Management (OAM) had a notice published in the Plymouth Pilot News, Plymouth, Indiana, stating that Aker Plastics Co., Inc. had applied for a construction permit to construct and operate fiberglass tub and shower manufacturing facilities with dry filters and a cyclone for particulate matter control. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAM has identified that the methodology detailed at the bottom of page 3 of 4 of TSD Appendix A did not properly state how the emission calculations were performed. The VOC emissions were correctly calculated and therefore, no change in the VOC emissions or the permit are required. The corrected page 3 of 4 of TSD Appendix A is attached.

**Appendix A: Emission Calculations  
 Natural Gas Combustion Only  
 MM Btu/hr < 0.3  
 Residential Furnaces**

**Company Name: Aker Plastics Co., Inc.  
 Address City IN Zip: 1400 Pidco Drive, Plymouth, IN 46563  
 CP: 099-9728  
 Plt ID: 099-00035  
 Reviewer: Mark L. Kramer  
 Date: April 28, 1998**

Heat Input Capacity  
 MMBtu/hr

Potential Throughput  
 MMCF/yr

2.065  
 (17\*0.1+0.125+0.240)

18.1

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	11.2	11.2	0.6	94.0	7.3	40.0
Potential Emission in tons/yr	0.101	0.101	0.005	0.850	0.066	0.362

**Methodology**

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 94

Emission Factors for CO: uncontrolled = 40

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3.

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emission Calculations  
 Natural Gas Combustion Only  
 MM Btu/hr 0.3 - < 10  
 Commercial Boiler**

**Company Name: Aker Plastics Co., Inc.  
 Address City IN Zip: 1400 Pidco Drive, Plymouth, IN 46563  
 CP: 099-9728  
 Plt ID: 099-00035  
 Reviewer: Mark L. Kramer  
 Date: April 28, 1998**

Heat Input Capacity  
 MMBtu/hr

Potential Throughput  
 MMCF/yr

7.35  
 (2.31 + 5.04)

64.4

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	12.0	12.0	0.6	100.0	5.3	21.0
Potential Emission in tons/yr	0.386	0.386	0.019	3.219	0.171	0.676

**Methodology**

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low NOx Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Company Name: Aker Plastics Co., Inc.  
Address City IN Zip: 1400 Pidco Drive, Plymouth, Indiana 46563  
CP: 099-9728  
Plt ID: 099-00035  
Reviewer: Mark L. Kramer  
Date: April 28, 1998

**Flash Off Factor Determination**

Resin, Mechanical, Uncontrolled Spray, Atomized Air Equipment, Vapor Suppressed, 35% Styrene  
Gelcoat, Uncontrolled Spray, Atomized Air Equipment, 26% Styrene  
Barrier Coat, Uncontrolled Spray, Atomized Air Equipment, Vapor Suppressed, 47% Styrene

Em. Factor = 4.30%  
Em. Factor = 7.45%  
Em. Factor = 9.60%

**Emissions Calculations**

Material	Density (lb/gal)	Weight % Monomer VOC	Gallons per unit	Units per hour	Pounds VOC per hour	Pounds VOC per day	Tons of VOC per Year	PM tons per year	Emission Factor (%)	Transfer Efficiency
Clean-up solvent - Acetone										
Polyester Gelcoat 962-WA-462	11.80	26.0%	1.28	16.00	18.00	432.10	78.86	195.82	7.45%	75.00%
Polyester Resin Production Resin 33336-15	9.06	35.0%	5.05	16.00	31.48	755.47	137.87	521.04	4.30%	75.00%
Polyester Barrier Coat 33157-00	9.01	47.0%	1.50	16.00	20.76	498.22	90.92	125.49	9.60%	75.00%
			<b>Total</b>		<b>70.24</b>	<b>1685.79</b>	<b>307.66</b>	<b>842.35</b>		
			VOC Control	0%						
			PM Control	98.0%						
			<b>Potential Before Controls</b>				<b>307.7</b>	<b>842.4</b>		
			<b>Potential After Controls</b>				<b>307.7</b>	<b>16.8</b>		
			Limited VOC to less than 100 tons per year				Limited PM after controls	5.47		

**METHODOLOGY**

Potential VOC Pounds per Hour = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* Emission factor  
 Potential VOC Pounds per Day = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* (24 hrs / 1 day) \* Emission factor  
 Potential VOC Tons per Year = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* (8760 hr/yr) \* (1 ton / 2000 lbs) \* Emission factor  
 Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1 - Weight % Volatiles) \* (1 - Transfer efficiency) \* (8760 hr/yr) \* (1 ton / 2000 lbs)  
 Total = Sum of all worst case coatings and solvents used  
 Flash Off Factor (%) = calculated % flash off or minimum flash off, whichever is greater from above tabulation

**HAP Emission Calculations**

**Company Name:** Aker Plastics Co., Inc.  
**Address City IN Zip:** 1400 Pidco Drive, Plymouth, Indiana 46563  
**CP:** 099-9728  
**Pit ID:** 099-00035  
**Reviewer:** Mark L. Kramer  
**Date:** April 28, 1998

Material	Density (lb/gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Flash off (fraction)	Emission Factor Styrene							Styrene Emissions (tons/yr)
Polyester Gelcoat 962-WA-462	11.80	1.28	16.00	1.000	7.45%							78.86
Polyester Resin Production Resin 33336-15	9.06	5.05	16.00	1.00	4.30%							137.87
Polyester Barrier Coat 33157-00	9.01	1.50	16.00	1.00	9.60%							90.92

Total State Potential Emissions

<b>TOTALS:</b>	<b>(tons/yr):</b>	<b>307.656</b>
	<b>(lb/hr):</b>	<b>70.241</b>
	<b>(g/sec):</b>	<b>8.850</b>

**METHODOLOGY**

HAPS emission rate (tons/yr) = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* Weight % HAP \* 8760 hrs/yr \* 1 ton/2000 lbs

Limited to 99 tons per year for Presumptive BACT/MACT

### Air Toxic Calculations

Facility Name: Aker Plastic Co., Inc.  
 Location: 1400 Pidco Drive, Plymouth, Indiana 46563  
 Permit No.: CP 099-9728-00035  
 Permit Reviewer: Mark L. Kramer

#### Air Toxic Emissions

Pollutant	Rate (lb/hr)	Rate @ 8,760 hr/yr (ton/yr)	Rate @ 2,841 hr/yr (ton/yr)	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	OSHA PEL ( $\mu\text{g}/\text{m}^3$ )	% OSHA PEL
Styrene	70.2	308	99.9	1,719	215,000	0.80
<b>TOTAL</b>	70.2	308	99.9	N/A	N/A	N/A

Methodology:

Rate ton/yr = (rate lb/hr)  $\times$  (hr/yr of operation)  $\times$  (1 ton/2,000 lb)

#### Air Toxic Stack

Stack ID	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
ST-1 barrier/gelcoat	28.0	3.0	15,000	80