

April 1, 2003

Dan Thystrup
Adventure Glass
P. O. Box 467
North Webster, IN 46555

Re: Registered Construction and Operation Status,
085-16804-00091

Dear Mr. Thystrup:

The application from Adventure Glass, received on February 12, 2003, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the following emission units, to be located at 201 East Epworth Forest Road, North Webster, Indiana, are classified as registered:

- (a) One (1) open molding process with styreneated resins and gelcoats using non-atomized chop spray guns, identified as OM-1, with a maximum processing capacity of 2.5 boats per day, exhausting indoors.
- (b) One (1) gelcoat application booth, identified as PB-1, with a maximum processing capacity of 2.5 boats per day, exhausting indoors.
- (c) One (1) gelcoat finishing booth, identified as SB-1, with a maximum processing capacity of 2.5 boats per day, equipped with a dry filter identified as HV-1, exhausting to stack # 1.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- (2) Pursuant to 326 IAC 6-3-2 (Process Operations):

The particulate matter emissions from the styreneated resin open molding operation in OM-1 shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

- (3) Any modification that may increase the potential to emit of VOCs from the resin and gelcoat application processes OM-1, SB-1, or PB-1 to 25 tons per year or more shall require prior approval of IDEM, OAQ.
- (4) Any modification that may increase the potential to emit of of any single HAP to 10 tons per year or more or that of combination of HAPs to 25 tons per year or more shall require prior approval of IDEM, OAQ.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

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cc: File - Kosciusko County
Kosciusko County Health Department
Air Compliance - Doyle Houser
Northern Regional Office
Permit Tracking
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3)

Company Name: Adventure Glass

Address: P. O. Box 467

City: North Webster, IN 46555

Authorized individual:

Phone #:

Registration #: 085-16804-00091

I hereby certify that **Adventure Glass** is still in operation and is in compliance with the requirements of Registration **085-16804-00091**.

Name (typed):

Title:

Signature:

Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Adventure Glass
Source Location: 201 East Epworth Forest Road, North Webster, IN
County: Kosciusko
SIC Code: 3732, 3087
Exemption No.: 085-16804-00091
Permit Reviewer: Madhurima D. Moulik

The Office of Air Quality (OAQ) has reviewed an application from Adventure Glass relating to the construction and operation of a fiberglass reinforced plastic paddleboat manufacturing source.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) One (1) open molding process with styreneated resins and gelcoats using non-atomized chop spray guns, identified as OM-1, with a maximum processing capacity of 2.5 boats per day, exhausting indoors.
- (b) One (1) gelcoat application booth, identified as PB-1, with a maximum processing capacity of 2.5 boats per day, exhausting indoors.
- (c) One (1) gelcoat finishing booth, identified as SB-1, with a maximum processing capacity of 2.5 boats per day, equipped with a dry filter identified as HV-1, exhausting to stack # 1.

Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment*.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
HV-1	Spray Booth SB-1	1	2	120	70



Recommendation

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

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

A complete application for the purposes of this review was received on February 12, 2003.

Emission Calculations

Detailed emission calculations are included in Appendix A.

Potential To Emit Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	6.89
PM-10	6.89
SO ₂	Negligible
VOC	5.6
CO	Negligible
NO _x	Negligible

HAPs	Potential To Emit (tons/year)
Styrene	5.6
TOTAL	5.6

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM and PM-10 are less than 25 tons per year but greater than 5 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.

County Attainment Status

The source is located in Kosciusko County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment

Lead	attainment
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- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Kosciusko County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21. See the State Rule Applicability for the source section.
- (b) Kosciusko County has been classified as attainment or unclassifiable for all other 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. See the State Rule Applicability for the source section.

Source Status

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

Pollutant	Emissions (ton/yr)
PM	6.89
PM10	6.89
SO ₂	Negligible
VOC	Negligible
CO	Negligible
NO _x	Negligible
Single HAP	5.6
Combination HAPs	5.6

- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. 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 new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

- (b) This fiberglass reinforced paddleboat manufacturing source is not subject to the National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing (NESHAPs)(326 IAC 14 and 40 CFR Part 63, Subpart VVVV), since this source is not a major source of HAPs (10 tons or more of single HAP or 25 tons or more of a combination of HAPs).

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Rules)

The total source potential to emit of VOCs is less than 250 tons per twelve (12) consecutive month period and it is not one of the 28 listed source categories. Therefore, the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Kosciusko County and the potential to emit of criteria pollutants is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of the fiberglass boat manufacturing source will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 20-25 (Emissions from Reinforced Plastics Composites Fabricating Emission Units)

The potential to emit of single and combination HAPs from this source is less than 10 and 25 tons per year, respectively. Therefore, 326 IAC 20-25 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 8-1-6 (General Provisions Relating to VOC Rules: General Reduction Requirements for New Facilities)

The source has potential VOC emissions from the resin and gelcoat application processes of less than twenty-five (25) tons per year. Therefore, the BACT requirements under 326 IAC 8-1-6 do not apply.

326 IAC 6-3-2 (Process Operations)

The gelcoat application processes in OM-1 and PB-1, and gelcoat finishing in SB-1, have PM emissions below 0.551 pounds per day. Therefore, the gelcoat application, finishing, and spraying operations are not subject to 326 IAC 6-3-2.

Pursuant to 326 IAC 6-3-2(c), the particulate matter emissions from the styreneated resin open molding operation in OM-1 shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

For reinforced plastic composites fabricating manufacturing processes, the use of non-atomized spray guns for applying the resin is considered as equivalent control for particulates. This will fulfill the requirements of 326 IAC 6-3-2(d).

Conclusion

The construction and operation of this fiberglass reinforced plastic paddleboat manufacturing source shall be subject to the conditions of the Registration No.: 085-16804-00091.

**Appendix A: Emissions Calculations
Form DD: Reinforced Plastics and Composites
Open Molding Operations***

**Company Name: Adventure Glass
Address City IN Zip: 201 East Epworth Forest Road, N. Webster, IN 46555
CP: 085-16804
Pit ID: 085-00091
Reviewer: Madhurima D. Moulik
Date: Feb 24, 2003**

Material	Units per Hour	Density of Resin (lb/gal)	Amount of Resin Used per Unit (gallons/unit)	Weight % Monomer	Emission Factor (% emitted of resin weight) (see Note 1)	Transfer Efficiency (%)	Pounds VOC per hour	Pounds VOC per day	Tons of VOC per Year	Tons of PM per year
Resin	0.104	8.68	8.70	43.6%	13.4%	75%	1.052	25.257	4.609	4.848
Gelcoat	0.104	11.66	2.20	30.0%	8.5%	75%	0.227	5.442	0.993	2.045
Totals:							1.279	30.700	5.603	6.893

* Open Molding Operations include the following: manual application, mechanical application, gel coat application, and filament application.
For all other fiberglass operations, use the AP-42 emission factors and the calculation spreadsheet fbrglsap.wb3.

METHODOLOGY

Assume all of the monomer is styrene.

Potential VOC Pounds per Hour = Maximum (unit/hr) * Density of Resin (lb/gal) * Amount of Resin Used per Unit (gal/unit) * Emission factor (% emitted of resin weight)

Potential VOC Pounds per Day = Potential VOC Pounds per Hour * (24 hrs / 1 day)

Potential VOC Tons per Year = Potential VOC Pounds per Hour * (8760 hr/yr) * (1 ton / 2000 lbs)

PM Potential Tons per Year = Maximum (units/hour) * Density of Resin (lb/gal) * Amount of Resin Used per Unit (gal/unit) * (1 - Weight % Volatiles/Monomer) * (1 - Transfer efficiency) * (8760 hr/yr) * (1 ton / 20

Note 1: Calculate Emission Factors from the CFA Styrene Emissions Determination Model For Open Molding Operations (Version 3.1, July 1998).