

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT NONRULE POLICY DOCUMENT

Title: Interim Guidance for the Reinforced Plastics Composites Fabricating Industry

Identification Number: Air-028-NPD

Date Originally Effective: April 5, 2002

Dates Revised: none

Other Policies Repealed or Amended: none

Brief Description of Subject Matter: New Composites Fabricators Association emission factors for nonatomized gel coat applicators.

Citations Affected: 326 IAC 20-25, Emissions from Reinforced Plastics Composites Fabricating Emission Units.

This nonrule policy document is intended solely as guidance and does not have the effect of law or represent formal Indiana Department of Environmental Management (IDEM) decisions or final actions. This nonrule policy document shall be used in conjunction with applicable laws. It does not replace applicable laws, and if it conflicts with these laws, the laws shall control. This nonrule policy document may be put into effect by IDEM thirty days after presentation to the air pollution control board and after it is made available to public inspection and comment, pursuant to IC 13-14-1-11.5. IDEM will submit the policy to the Indiana Register for publication. Revisions to the policy will follow the same procedure of presentation to the board and publication.

PURPOSE

The purpose of this nonrule policy is to describe the policies and procedures that IDEM will use to address the use of the emission factor for nonatomized gel coat application in the most recent version of the “Unified Emission Factors for Open Molding of Composites” dated July 23, 2001. The version of these factors cited in the rule to reduce emissions from the reinforced plastics composites fabricating industry, 326 IAC 20-25, Emissions from Reinforced Plastics Composites Fabricating Emission Units, is dated April 1999. The use of controlled spray emission factors must be approved by the commissioner as stated in the current rule. The updated emission factors include emissions from nonatomized gel coat applicators that significantly reduce emissions during the application of gel coats. The technology of nonatomized application of gel coats was not available when the reinforced plastics rule was final adopted by the Air Pollution Control Board although the rule allows for nonatomized gel coat application (326 IAC 20-25-3(c)(1)).

BACKGROUND

In March 1998, U.S. EPA removed from the “Compilation of Air Pollutant Emission Factors” (AP-42) the emission factors for certain open molding operations in the reinforced plastics composites fabricating industry: hand layup (manual application) and spray layup (mechanical application) of resin and gel coats, and filament winding. The emissions from these operations consist mainly of styrene, which is a volatile organic compound (VOC) and a

hazardous air pollutant (HAP). U.S. EPA removed these emission factors because information developed by the U.S. EPA and industry indicated the AP-42 factors significantly underpredicted emissions. In fact, available information indicated that emissions are approximately two (2) times greater than previously estimated.

In June 1998, IDEM approved the use of new emission factors published by the Composites Fabricators Association in a report entitled "CFA Emission Models for the Reinforced Plastics Industries," dated February 28, 1998. These models are now referred to as the "Unified Emission Factors for Open Molding of Composites" ("CFA Factors", April 1999). The CFA Factors enable a facility to estimate emissions from use of conventional materials and methods of application as well as take into account emission reductions from pollution prevention techniques such as flowcoating, vapor suppressed resins, and low styrene and hazardous air pollutant (HAP) content resins and gel coats.

The CFA Factors, April 1999, was cited in a rule (326 IAC 20-25) adopted by the Air Pollution Control Board in October 2000 and effective March 2001. This rule establishes applicability, emission standards that includes application methods, work practice standards, operator training and testing, record keeping and reporting requirements for open molding process emissions units that emit styrene. Nonatomized application of resins or gel coats limits styrene emissions by limiting exposed surface area for evaporation. The control options are techniques to prevent emissions rather than controlling the air contaminants once they are emitted. The Indiana rule applies to open molding that uses styrene for reinforced products and open molding operations at boat manufacturers, but not to filament winding. The rule also incorporates low HAP resin and gel coats and application techniques to reduce emissions, and requires operator training. The CFA Factors, April 1999, is one of the methods listed in the rule for sources to make emission estimates for compliance purposes. See 326 IAC 20-25-(3)(i).

Since the adoption of 326 IAC 20-25, new technologies and products continue to be developed. After extensive testing, the Composites Fabricating Association (CFA) has updated its unified emission factors to include emissions from nonatomized gel coat applicators. The revised "Unified Emission Factors for Open Molding of Composites"(attached) is dated July 23, 2001. The only difference between the April 1999 version and the July 2001 version is the addition of emission factors for nonatomized gel coat application. Currently, 326 IAC 20-25 cites the CFA Factors, April 1999 emission factors, which does not differentiate between atomized and nonatomized gel coat applicators. The nonatomized gel coat applicators significantly reduce emissions. For example, at thirty seven percent (37%) styrene content in the gel coat, compliant with 326 IAC 20-25, the emissions drop from three hundred seventy seven (377) pounds of styrene per ton of gel coat used to two hundred thirty two (232) pounds per ton of gel coat used. The use of nonatomized gel coat applicators will require a commitment from the companies that choose to implement them. Nonatomized gel coat applicators are expensive, and require additional maintenance and employee training.

POLICY

The Indiana rule, 326 IAC 20-25, Emissions from Reinforce Plastics Composites Fabricating Emission Units, specifically lists nonatomized application technology for gel coats as an acceptable application technology in section 3(c)(1), although no emission factor exists in the April, 1999 CFA Factors incorporated into the rule. That same section, 326 IAC 20-25-3(i)(3), allows the commissioner to approve other emission factors. In order to estimate emissions from the nonatomized gel coat application technology, sources must use the emission factors listed in the CFA Factors, “Unified Emission Factors for Open Molding of Composites” July 2001. IDEM recognizes that the nonatomized gel coat applicator technology will facilitate additional toxic reductions and that companies that wish to use the technology must make a significant investment. Therefore, it is IDEM’s policy to allow the use of the emission factors for nonatomized gel coat application technology in the CFA Factors, dated July 23, 2001 for emissions estimate purposes.

One of the following methods can be used to incorporate nonatomized gel coat application into a source’s permit.

- < An application for and approval of a permit amendment or modification will be required to:
 - 1) Change the version of the approved CFA emission factors Table to July 23, 2001, if the permit contains such language.
 - 2) Revise a best available control technology (BACT) or maximum achievable control technology (MACT) determination, unless that determination already allows for the use of gel coat nonatomized technology by providing for “equivalent or better” gel coat application technologies.
 - 3) Add the ability to average within or across material and application technology categories to comply with applicable styrene content limits if that language does not already exist in the permit.
- < If a source’s permit would allow the use of the nonatomized applicators, but a facility description in a permit contains information no longer accurate based on the use of new applicators, an administrative amendment under 326 IAC 2-7-11 may be appropriate to change the facility description.

Consistent with 326 IAC 20-25, an owner or operator must maintain complete and sufficient records to establish how much gel coat is applied with nonatomized applicators and the HAP content of the gel coat. Also, sources using monthly emissions averaging of gel coat emissions will be required to submit quarterly summary reports and supporting calculations.

Construction of a new emission unit, which includes gel coat nonatomized application technology, shall require preconstruction approval unless the project is determined to be exempt from permitting.

ADDITIONAL INFORMATION

If you have any questions concerning this policy or on styrene and the fiber reinforced

plastics industry, please contact:

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If you have questions concerning permitting, please contact:

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Copies of this policy are available at the Office of Air Quality, Indiana Department of Environmental Management, Indiana Government Center-North, Room N1001, 100 North Senate Avenue, Indianapolis, Indiana 46204.