

12/24/1980

VOC161224801

Category: 16 – Surface Coating of Miscellaneous Metal Parts and Product

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

DATE: DEC 24, 1980

SUBJECT: RACT/LAER Determination for Casket Coaters

FROM: G. T. Helms, Chief
Control Programs Operations Branch (MD-15)

TO: Winston Smith, Chief
Air Programs Branch, Region IV

Attached is a memo outlining the OAQPS technical position on the coating of caskets. A draft of the memo was magnafaxed to Ron McHenry on December 18, 1980.

Also attached for further information on this subject are the notes from the meeting with Batesville Casket Company and several discussion summaries of telephone conversations Dave Salman had in determining feasibility of control for this company.

Please call Brock Nicholson or myself if we can be of any further assistance in this matter.

3 Attachments

cc: Mike Trutna
Gary Rust

Attachment

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DATE: Dec 24, 1980

SUBJECT: RACT/LAER Determination for Casket Coaters

FROM: James C. Berry, Chief
Chemical Applications Section, ESED (MD-13)

TO: G. T. Helms, Chief
Control Programs Operations Branch (MD-15)

Recommendation

Recognizing that our recommendation may have no effect on nationwide emissions of VOC because, as a result, Batesville Casket Company will likely expand existing operations rather than build a new plant, we recommend that EPA not accept their proposal for solvent emissions (coatings to be used) in a new plant planned for Kentucky. It is not obvious that Batesville has exhausted the options available for reducing emissions from their color coat operation via either use of coatings with lower solvent content or installation of an add-on control device.

Details

We have explored available information on Batesville Casket Company which proposes to build a new plant in Kentucky. The plant will initially have emissions of 167 tons per year with ultimate plans to increase capacity almost three-fold. During our meeting with Batesville on December 8, it became obvious that availability of low solvent coatings with acceptable physical properties was not an issue. Rather, their problem is similar to that of GM who maintained that their portion of U.S. auto market sales was a direct consequence of the esthetic appeal of their topcoat. The major difference in the case of caskets is that, unlike the automobile industry, all of Batesville's competition appear to also use high VOC content color coats. As a consequence, if Batesville is required to change coatings (as opposed to installing incinerators), the appearance of their product could be different from their competition.

Our brief investigation found, however, that between 10 and 15 casket coaters now use a modified butyrate color coat. These coatings can withstand higher cure temperatures than nitrocellulose lacquers and thereby provide a higher gloss finish. These butyrate coatings are applied at about 17 percent solids by weight (between 9 and 12 percent solids by volume). While the VOC content of these coatings (about 5.8 pounds per gallon less water) is much higher than the recommended CTG limit, emissions from the butyrate color coat could be 25-45 percent less than from nitrocellulose lacquer color coats. This would be more than enough reduction for Batesville to at least meet the recommended CTG limits with a bubble approach. Further, at least one firm has

successfully applied the butyrate color coats electrostatically on top-of-the-line casket models. Since the butyrate color coats contain very similar solvents to those in nitrocellulose lacquers, the butyrate coatings should be compatible with the higher solid prime and clear coats proposed by Batesville. No mention of the butyrate color coats was made by Batesville in their meeting with us. After inquiring, Batesville subsequently reported that they use butyrate coatings for two colors. They have experienced serious problems with these two coatings and have had to do repainting on 60-70 percent of the caskets painted with butyrate as opposed to only 15-20 percent for nitrocellulose. They continue to use the two butyrate colors because the colors are not available in nitrocellulose. Further, they pointed out that electrostatic spray could not be used on brushed metal caskets because of wrap around of color into the brushed area which is not supposed to be color coated. Brushed metal caskets will account for at least 60 percent of production at the proposed new plant.

Incineration of the oven exhaust would result in some reduction in emissions, although the amount of control achievable is difficult to assess without further investigation. The present color coats are solution lacquers which contain many low boiling solvents that tend to flash from the coating before the product reaches the oven. The industry estimates that only 20 percent of the total VOC in the coating is carried into the oven and maintains that this fraction cannot be increased. Although we do not accept their conclusion, we cannot reject it without further investigation.

One casket manufacturer in Pennsylvania recently began incinerating part of the exhaust from both their prime and color booths. The portion of the exhaust being incinerated is drawn directly from the spray area and is the most heavily solvent-laden booth air. This system was installed primarily for odor control.

To allow Batesville to use high solvent coatings in a new plant could frustrate those States that are adopting our RACT recommendations and would expect to require reductions in emissions in late 1982 or thereafter. Certainly it would be difficult for a State to maintain a firm position on control of existing plants when we had not taken a strong position on new plants.

The prime unknown in this problem is the economic impact on Batesville if they are required to use new coatings. In this particular case, requiring them to meet the RACT levels (not even taking into account what LAER might be) will likely cause them to abort their plans for the new plant in Kentucky and explore an expansion in Batesville, Indiana, an attainment area where it appears no PSD review or preconstruction monitoring would be required. This likely would merely delay an issue that is likely to arise repeatedly as more miscellaneous metal products are required to meet the recommended RACT levels. This incident also magnifies the advantage of uniform requirements nationwide. Certainly if every casket manufacturer were required to meet the lower solvent emissions, many could do so at very low cost with no one gaining a competitive edge due to coating appearance.

One middle-of-the-road option would be to allow casket manufacturers a special color coat RACT level of 5.3 #/gal, less water, which could be achieved with a dispersion lacquer with a volume solids content of about 27 percent. These coatings would achieve about a 70 percent emission reduction from the present lacquer color coat without seriously affecting the appearance of the finished product.

To exemplify the alternatives, the following table shows relative emission levels assuming the present coating would emit 100 units of VOC hourly.

Coating (# VOC/Gal less water)	Emissions
Existing (6.5)	100
Dispersion Lacquer (5.3)	30
Recommended RACT (3.0)	6

Attached are the minutes of our meeting with Batesville and notes on the phone conversations Dave Salman made to evaluate the control/coating situation in this industry.

Attachment

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

DATE: December 12, 1980

SUBJECT: Meeting with the Batesville Casket Company to determine LAER
for metal casket finishing

FROM: James C. Berry, Chief
Chemical Applications Section, CPB (MD-13)

TO: Jack R. Farmer, Chief,
Chemicals and Petroleum Branch (MD-13)

The Batesville Casket Company is considering a new plant which would produce 100,000 "units" annually. The two-shift operation reportedly would have a VOC emission rate of 167 tons per year. Future expansion could increase annual production rate to 286,000 units with an attendant increase in emissions. Members of the company met with EPA to explain why they believe the RACT recommendations in the Miscellaneous Metal Products CTG are not reasonable and to persuade us that their recommendations for LAER indeed represent the lowest achievable emission rate for their industry. As part of their presentation they made clear that the decision to build the new plant, rather than expand an existing facility in Batesville, Indiana, was a near toss-up. Significant problems with obtaining their permit in Kentucky would cause them to resort to an expansion in Batesville, Indiana.

The Miscellaneous Metal Products CTG defines 3.0 pounds of VOC per gallon of coating less water as the solvent content in prime and color coatings that are reasonably available for the category of miscellaneous metal parts which would include caskets. For clear coats, the recommended emission limit is 4.3 pounds per gallon less water. Batesville proposes to start up their plant using several coatings that would not meet these recommended limits. The coating with the greatest deviation from 3.0 is the color coat which would be a high-solvent lacquer with only about 8-10% volume solids. (About 6.6 #/gal coating less water). The 3.0 coatings would represent about a 90% reduction from the 6.6 #/gal less water coating.

After extensive discussion it was agreed that the need for the high solvent lacquer was based solely on aesthetics and competition in the marketplace rather than durability, longevity, corrosion protection, etc.

Furthermore, the company claimed that because of the very competitive nature of their business, and the need for high-gloss and the aesthetic appearance, that no manufacturer of caskets would be able to compete if forced to resort to an enamel type coating with its attendant higher solids content. It was their contention that no casket company now uses enamel coatings for their appearance coat and further that the unique structure of the industry would make it doubtful under present environmental regulations on PSD or RACT that any company other than Batesville would be required to adopt such

coatings. Batesville contends that the industry is generally made up of very small manufacturers. They report there are approximately 450 small casket manufacturers around the nation most of which are located in rural areas and have emissions of less than 100 tons per year. Hence these would not be required to control solvent emissions. If Batesville were required in their new facility to change their appearance coat to one with a higher solids content they claim the reduced gloss and depth of color would result in their inability to compete or maintain their present market share. Their position is that under no condition would they build this new plant if they are forced to cease use of lacquers because of the disadvantage they feel this would place on their competition with products of other companies.

The representatives of the company were however quite candid in expressing their willingness to accept use of lower solvent coatings if such a requirement was placed on all members of the industry. It was quite obvious that their problem is one of economics, not technology. They feel their product would be at a competition disadvantage when displayed competitively in the showroom.

We briefly discussed the prospects of add-on control specifically incineration since their ovens presently operate at around 280 degrees F.

The company felt that this was not an economically viable operation; however they will discuss this with their incineration consultant and let us know what the expected cost would be if an incinerator were operated on their oven.

The meeting closed with the agreement that Batesville would provide to us a list of the names and addresses of their competitors and the expected cost of installing add-on equipment onto their ovens. Further, they will calculate the allowable emission rate based on use of complying coatings and compare the results against the emission rate that they will have using the coatings they recommend as part of their proposal. This will quantify the reduction required to meet RACT bubble. I agreed that we would contact some State and local agencies and find the expected effect of the CTG which States must adopt in 1982 on their industry.

Even if we find the lower solvent waterborne asphalt coating (0.5 #/gal) that they propose to use offsets the high solvent topcoat making them acceptable under a RACT bubble, it is likely that such a combination should not be accepted as LAER. Further, we must be wary of accepting coatings in this new plant that are higher in solvent content than States may require for existing plants in the 1982 SIP's.

(NOTE: The notes by Dave Salman are handwritten photocopies and impossible to read in some parts, and therefore are not incorporated into this memo.)