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Category: 14 Cutback Asphalt

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

DATE: OCT 4, 1979

SUBJECT: Clarification for Final SIP Actions on Asphalt Regulations

FROM: Richard G. Rhoads, Director
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TO: Director, Air and Hazardous Materials Division, Regions I-X

On December 19, 1978, and March 6, 1979, guidance memoranda were sent to the Regional Offices concerning criteria for determining acceptable Volatile Organic Compound (VOC) RACT regulations for cutback asphalt. The example regulation in the first memorandum prohibited use of cutback asphalt or emulsified asphalt containing solvent but provided certain exceptions. The exceptions are: cold weather use; prime coat; stockpiling; and demonstration of no VOC emissions from cutback. Both memoranda pointed out that there might also be other unique problems for which additional exemptions could be appropriate with adequate justification such as applications of emulsified asphalt requiring the addition of solvents or oils to improve the properties of the emulsion. I requested that you advise our office of additional exemptions which the States requested.

Now that most VOC SIP regulations have been submitted to EPA, several remaining issues with cutback asphalt need clarification. The following guidance is intended for your use as you finalize SIP approval/ disapproval actions and conditional approvals.

The approach recommended in the two previous memoranda was to define an asphalt emulsion as a suspension of asphalt in water by means of an emulsifying agent with no allowance for the addition of solvents to the emulsion. The additional exemptions to the regulation were to be the mechanism for allowing use of those emulsions containing solvent[1] where necessary. While most of the SIP submittals applying RACT to asphalt operations have not addressed the acceptability of solvent in emulsions, several States which have allowed solvent have not used the mechanism we provided, but instead have allowed a maximum solvent content in emulsions, sometimes up to 12 to 15 percent. Information we have received on the subject of solvent content in emulsified asphalt does not support the allowance of a blanket solvent content for emulsified asphalt. Accordingly, these blanket-type regulations should not be unconditionally approved. If a State chooses to allow the use of solvents in certain emulsions, the regulations should only permit the inclusion of solvent in emulsified asphalt by

[1] The solvent content is determined by ASTM distillation test D-244.

stipulating maximum solvent contents allowed for specific uses or for specific grades of emulsified asphalt. The following maximum solvent contents for specific emulsified asphalt applications are based on ASTM, AASHTO, and State specifications and on information recently received from the Asphalt Institute.

Use	Max. Solvent Content
Seal coats in early spring or late fall	3%
Chip seals when dusty or dirty aggregate is used	3%
Mixing w/open graded aggregate that is not well washed	8%
Mixing w/dense graded aggregate	12%

I wish to emphasize that these are maximum solvent contents and if States are using emulsified asphalt with less solvent for these applications, they should continue to do so. These are only the-maximum solvent contents that we feel current technology supports. Many emulsified asphalt manufacturers are successfully using less solvent and achieving the same acceptable results. The chemistry of emulsified asphalt and the non-uniformity of the technology across the country prevents us from specifying anything more than upper limits on solvent content. Lower limits are certainly achievable in many States but must be determined on a case-by-case basis.

Finally, in our contact with the emulsified asphalt industry we find that many people are extremely apprehensive about defining an emulsified asphalt as having no solvent. Should the exceptions which allow emulsions containing solvent ever be removed from the regulation, the industry might be unable to produce acceptable products for a number of applications. An acceptable regulatory approach, therefore, will be to allow defining emulsified asphalt as optionally containing solvent or oils. The allowed solvent would be limited to the amounts specified above (or lower if this can be negotiated) based on application. The definition should be worded in such a way to clearly indicate that these are the maximum solvent contents allowed and that they are allowed only for the specific applications or grades of emulsified asphalt. All other asphalt emulsions should not contain solvent. If States reject this approach, as an alternative, we will accept blanket-type regulations which allow maximum solvent contents in the range of 5 to 7 percent.

For those States who have submitted regulations with an unacceptable blanket solvent content allowance, a conditional approval should be granted with time allowed to modify the regulations to follow the solvent content guidance provided above or to lower the blanket solvent allowance to 5 to 7 percent.