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Category: 26 – Bubbling

From: CPDD/RTP (EPA6221) Posted: Fri 9-Mar-84 11:33 Sys 63 (113)

Subject: VOC Equivalency Calculations

To: Air Branch Chiefs, Steve Hitte

From: Tom Helms

Subject: VOC equivalency memo attached. Original with attachments will be mailed to you.

March 6, 1984

MEMORANDUM

SUBJECT: VOC Equivalency Calculations - Clarification
of Requirements

FROM: Darryl D. Tyler, Director
Control Programs Development Division (MD-15)

TO: Director, Air and Waste Management Division
Regions II, IV, VI-VIII, X
Director, Air Management Division
Regions I, III, V, IX

The purpose of this memorandum is to reaffirm the Agency requirement that volatile organic compound (VOC) equivalency calculations for coating/printing industries must be made on a mass of VOC per volume of solids basis. It has been brought to my attention that, in some instances, equivalency determinations are not being made on the correct basis. These determinations are required for alternative controls (bubbles), in calculations of VOC emission reductions needed when add-on control equipment is utilized, or when considering transfer efficiency.

Erroneous results occur when the State Implementation Plan (SIP) emission limit (e.g., 2.8 lbs VOC per gallon of coating, less water) is incorporated in calculations with a company's actual volume of noncompliance coatings. Calculations for allowable emissions must utilize the mass of VOC per volume of solids consumed (or applied when transfer efficiency is considered). This requirement is shown in example calculations included in the appendices to Volumes V and VI of the Control Technique Guidelines (CTG's) and is discussed on pages 1-7 and 1-8 of the introduction of the Volume II CTG. Prior guidance memorandums have discussed transfer efficiency.

Attached for your further reference are copies of prior guidance memorandums related to equivalency calculations (1) dated November 21, 1978, from Richard G. Rhoads concerning "RACT Options for Can Coating Operations"; (2) dated July 3, 1979, from Richard G. Rhoads concerning "Appropriate Transfer Efficiency for Waterborne Equivalence"; (3) dated May 5, 1980, from

Richard G. Rhoads concerning "Procedure to Calculate Equivalency With the CTG Recommendations for Surface Coating"; (4) dated October 17, 1980, from Richard G. Rhoads concerning "Equivalency Calculations With the CTG Recommendations for Surface Coating"; (5) dated November 28, 1980, from G. T. Helms concerning "Appropriate Transfer Efficiencies for Metal Furniture and Large Appliance Coating"; (6) dated December 2, 1980, from G. T. Helms concerning "Role of Improved Transfer Efficiency in Demonstrating Compliance with the CTG Recommendations for Surface Coating"; and (7) an undated example equivalency calculation.

It should also be noted that to calculate properly VOC emissions equivalency, coating usage (solids applied) must be considered on a weighted basis. Merely averaging arithmetically the emission limits such as 2.9, 3.5, or 4.3 to yield 3.5 without regard to production associated with each line or coating will yield incorrect results.

Additionally, "dilution" and "clean-up" solvents should be included in equivalency calculations. See attached memorandum dated October 20, 1983, from James C. Berry and G. T. Helms concerning "Addition of Dilution Solvents to Printing Inks"; and guidance provided in EPA-450/2-79-004, dated September 1979, "Guidance to State and Local Agencies in Preparing Regulations to Control Volatile Organic Compounds From Ten Stationary Source Categories," p. 30, 31, and 92. However, if it can be documented that clean-up solvent will be collected and disposed of in a manner which prevents its evaporation to the atmosphere, then it can be excluded from equivalency calculation (see EPA-450/2-79-004 noted above).

To ensure national consistency in making these equivalency calculations, it is requested that each Regional Office review the equivalency calculation procedures utilized by States in your jurisdiction and work with your States to take necessary action if procedures are in error. If you desire clarification or have additional questions please contact Tom Helms or Bill Polglase of my staff (FTS 629-5516).

Attachments

cc: Chief, Air Branch, Regions I-X
Regional Administrator, Regions I-X
VOC Regional Contacts

bcc: Barbara Bankoff
Ron Campbell
Jack Farmer
Ed Reich
B.J. Steigerwald
Brock Nicholson
John Calcagni

Bill Polglase
Dennis Crumpler
Dave Salman
Steve Hitte
Jim Berry
Bill Johnson
Tom Helms

This has been coordinated with ESED (W. Johnson, D. Salman), Steve Hitte (SSCD), and Region I (John Hanisch and Cynthia Greene).