



**Division of Air Pollution Control**

**Response to Additional Comments  
Draft Rule Language Comment Period**

**Rule: OAC Rule 3745-21-23**

**Agency Contact for this Package**

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Ohio EPA provided a 30 day comment period which ended on January 8, 2010. This document summarizes additional comments received by Ohio EPA from the American Coatings Association after the public comment period ended.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. The name of the commenter follows the comment in parentheses.

**Specific Comments**

**Rule 3745-21-23 "Control of volatile organic compound emissions from industrial solvent cleaning operations."**

**Comment 1:**

The American Coatings Association (ACA)<sup>[1]</sup> is concerned with the Rule 3745-21-23 since this rule would not allow effective cleaning at coatings, inks and resin manufacturing operations. ACA recommends that OH exempt coatings, ink and resin manufacturing operations from Rule 3745-21-23 and adopt the solvent cleaning provisions below that WI is in the process of adopting and that EPA Region 5 has generally endorsed.

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## 1. Revised Bay Area Coatings Manufacturing Solvent Cleaning Provisions

"8-35-303 Equipment Cleaning: A person shall not manufacture a coating, ink, or adhesive unless portable or stationary mixing vats, high dispersion **mills**, grinding mills, tote tanks and roller mills are cleaned, except as provided in Section 8-35-320, by one or more of the following methods:

303.1 Use a cleaning material that either contains less than 200 grams VOC (wt) per liter or has a composite vapor pressure limit of 8 millimeters of mercury (mm Hg). The cleaning material shall be collected and stored in closed containers.

303.2 Operate a closed cleaning system that has been approved by the APCO in writing and that meets the following conditions:

2.1 The system, including equipment being cleaned, is maintained leak free,

2.2 Organic solvent must be drained from the cleaned equipment before the system is opened to the atmosphere, and

2.3 Solvent, including waste solvent, shall not be stored or disposed of in such a manner that will cause or allow evaporation into the atmosphere.

2.4 Organic solvent, including cleanup solvent is collected and stored in closed containers.

303.3 Collect and vent the emissions from equipment cleaning to an approved emission control system that has an overall abatement efficiency of 80% or more on a mass basis. Where such reduction is achieved by incineration, at least 90% of the organic carbon shall be oxidized to carbon dioxide.

303.4 Use organic solvents other than those allowed in Section 8-35-303.1 provided the following conditions are met:

4.1 No more than 228 liters (60 gallons) of fresh solvent shall be used per month. Organic solvent that is reused or recycled (either onsite or offsite), for further use in equipment cleaning or the manufacture of coating, ink, or adhesive shall not be included in this limit.

4.2 Cleanup solvent records are maintained as required per Section 8-35- 501."

2. Rule 3745-21-23 is based on EPA's Industrial Cleaning Solvent CTG which is Problematic for use in the Coatings, Ink and Resin Manufacturing Industry

Given the large number of exclusions for the application of coatings in the Industrial Solvent Cleaning CTG, ACA is hopeful that Ohio recognizes the difficulty of cleaning these products during application. However, these problems are compounded in the cleaning of the equipment used in the manufacturing of coatings products.

#### Compliant Cleaning Solvent Alternatives are Problematic

Cleaning manufacturing equipment is very important since incomplete cleaning of process equipment and tanks can cause cross contamination of manufactured product and negatively impact product quality and could result in an off specification product that would need to be disposed of. Chemistries also vary considerably from batch to batch and are very difficult to clean unless effective cleaning solvents are used.

Unfortunately the 50 g/l (or 8 mm Hg) CTG cleaning solvent limit really only leaves two compliance options – exempt solvents or use caustic cleaning systems.

#### Exempt Solvents

There are a number of problems associated with using exempt solvents for cleaning coating manufacturing equipment.

1. Solvency – exempt solvents are not nearly as effective as currently used solvents, therefore more acetone will be needed and increased manpower will be needed to clean the same process equipment.
2. Cost – exempt solvents are more expensive than current reclaim solvent blends (as much as 3-4 times higher).
3. Acetone Vapor Pressure – Acetone evaporates much quicker than current solvent blends, so much more acetone will be needed.
4. Emissions - Please note that exempt solvents still contribute to the formation of ozone, so even though it is replacing VOC solvents, there will still be emissions, especially in the case of acetone, much more acetone will be needed due to its lower solvency and higher vapor pressure.
5. Odor – Acetone has a low odor threshold as compared to current solvent blends and will lead to odor complaints. A coatings manufacturer in another state used a 50% blend of acetone and received odor complaints from nearby neighbors.

6. Flammability – Acetone is extremely flammable as compared to other cleaning solvents being used today and could lead to increased threat of fires for some coatings manufacturing operations.
7. Formulation Incompatibilities – manufacturers will need to assess possible formulation impacts of using acetone and other exempt compounds as cleaning solvents – since these solvents may impact the coatings. Specifically, acetone is incompatible with the manufacture of water reducible coatings.

### Caustic Cleaning Systems

Another possible option is the utilization of caustic cleaning systems – however caustic cleaning systems are expensive, not as effective as solvent cleaning and pose health and safety issues for workers that are using the caustic solutions.

### Impact on Current Solvent Recycling Programs

Coatings manufacturing facilities have instituted pollution prevention programs where they clean and rinse process equipment with recycled/reclaimed solvents. They use the solvent until it is dirty and either reclaim the solvent onsite or send it offsite for reclamation. The reclaimed solvent is then used again for cleaning and rinsing process equipment. Reusing solvents is cost effective and minimizes the generation and disposal of hazardous wastes. Unfortunately, the 50 g/l limit will force manufacturers to dispose of all existing solvents and purchase ineffective virgin compliant solvents. This would reduce secondary materials recycling and drastically increase operation and waste management costs. These costs impacts are especially problematic given the recent economic downturn.

Treatment – another compliance option would include the use of add-on controls to control solvent cleaning emissions. However, the cost of installing and operating add-on controls are astronomic, far in excess of \$5,000 per ton, especially if the cost estimation is based just on solvent cleaning emissions. This also does not account for increased green house gas emissions.

### 3. The Industrial Solvent Cleaning EPA CTG Is Consistent With ACA's Suggestions

EPA made it clear in the CTG that States may consider specific category exclusions similar to the exclusion in the Bay Area and South Coast Air Quality Management Board (SCAQMD)<sup>[2]</sup>.

“When developing RACT measures for industrial cleaning operations, we [EPA] suggest specific category exclusions, similar to the ones provided for the Bay

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Area and South Coast rules and that State and local agencies consider the specific industries and operations in their jurisdictions and the individual requirements of those operations and tailor their rules to those specific scenarios accordingly.”

Further, with regards to the 50 g/l VOC Content Limit, EPA notes that this limit should be kept in context with the specific exclusions in the rules in which this limit was derived: <sup>[3]</sup>

“... This limit [50 g/l] is modeled on the “general use” category of the Bay Area AQMD solvent cleaning regulations, taking into account the specific exclusions provided for in the Bay Area AQMD rule and described below.”

EPA specifically identifies under “Suggested Exclusions” Bay Area exclusions as examples for consideration by the State and local agencies, specifically: <sup>[4]</sup>

“Coating, ink, and adhesive manufacturing”

“Polyester resin operations”

In addition, in the Industrial Solvent Cleaning CTG Response to Comment Document <sup>[5]</sup>, EPA addressed ACA comments and concerns:

“Moreover, as explained above, the CTG provides guidance to States in developing RACT for VOCs from industrial cleaning solvents in ozone nonattainment areas. A State may decide to adopt the exclusions of the Bay program, in total, and/or may promulgate a VOC content limit or vapor pressure limit that differs from those recommended in the CTG. The State will make these determinations, including the determination of whether a low usage solvent exemption is appropriate for a source category, based on its review of the facts and circumstances of the affected industries in their particular nonattainment area.”

Also EPA notes:

“The commenter properly notes that we modeled our recommendations on the “general use” category of the Bay Area AQMD solvent cleaning regulations. EPA recognizes that the Bay Area has various exemptions, exclusions and different industrial cleaning requirements for different industries. In the CTG, EPA did not attempt to identify every Bay Area rule relating to industrial cleaning solvents or every exemption or exclusion in those rules. Rather, it identified the significant Bay Area rules (including the significant exemptions and exclusions) and

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explained the overall regulatory structure that the Bay Area had adopted for addressing VOC emissions from the use of industrial cleaning solvents.”

### Conclusion

ACA strongly opposes Ohio’s “general use” solvent cleaning limits on coatings, ink and resin manufacturing operations since these limits are technically problematic and economically burdensome on our industry. Instead, ACA recommends that OH exempt coatings, ink and resin manufacturing operations from Rule 3745-21-23 and adopt the solvent cleaning provisions below that WI is in the process of adopting and that EPA Region 5 has generally endorsed.  
**(Dave Darling, American Coatings Association)**

### **Response 1:**

Ohio EPA has carefully considered these comments and accordingly has revised paragraph (C)(6), (F)(2), (G)(2), (G)(3), and (G)(7) of this rule to address the industry concerns. The specific changes to each paragraph are as follows:

Paragraph (C)(6). Additional language has been added to this paragraph to allow for additional alternate compliance options with the rule.

Paragraph (F)(2). This paragraph has been amended by incorporating reference to paragraph (C)(6) of this rule.

Paragraph (G)(2). This paragraph has been amended by incorporating reference to paragraph (C)(6) of this rule.

Paragraph (G)(3). This paragraph has been amended by incorporating reference to paragraph (C)(6) of this rule.

Paragraph (G)(7). This paragraph has been amended by incorporating record keeping requirements for those facilities complying with paragraph (C)(6)(d) of this rule.

**End of Response to Comments**