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Mr. Gene Pettingill
State of Delaware
Department of Natural Resources and Environmental Control
Division of Air Quality
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Re: OTC Model Rule for Solvent Degreasing 2011

Dear Mr. Pettingill:

Thank you for the opportunity to comment on the draft model rule titled, "OTC Model Rule for Solvent degreasing 2011". 3M appreciates the consideration you have given to past comments and hopes you find these additional comments helpful in finalizing the model rule.

1. 1(b) d. definition of Airless/Airtight Cleaning System. Remove the phrase, "and vacuum". There is no reference to vacuum in 3c. Airless/Air-tight Degreasers. The equipment may meet the requirements of the rule through use of vacuum pumps or some other engineering techniques that maintains solvent in the equipment. One example would be super heated drying in air tight machines. "and vacuum" was likely carry-over language from previous text but needs to be removed based on the restructuring of the rule.

2. 1(b) e. "Carbon absorber" in definitions should be redefined. A different term should be defined and used in the rule. The terms should describe and allow for the use of other materials to absorb solvent vapor.

Current: a) "Carbon Absorber" means a bed of activated carbon into which an air/solvent gas-vapor stream is routed and which adsorbs the solvent on the carbon.

Proposed: "Solvent Vapor Absorber" A bed of adsorbing material into which an air/solvent gas-vapor stream is routed and which adsorbs the solvent on the material.

The adsorbing material can be activated carbon, zeolite or other material that can meet the emission standard of 50 ppm.

3 1(b) r. In defining "High precision optics", use the word, "component" rather than "element"

Current: "High Precision Optic" means an optical element used in an electro-optical device and is designed to sense, detect or transmit light energy, including specific wavelengths of light energy.

Proposed: "High Precision Optic" means an optical component of an electro-optical device and is designed to sense, detect or transmit light energy, including specific wavelengths of light energy .Examples include but not limited to night vision goggles, analytical equipment such as FTIR, or SEM and photographic equipment which converts images to digital media.

"Component" is a more recognized term

4. The first line under 4d(1) and 4d(4). should refer to, "Open-top and conveyORIZED (in-line) vapor degreasers" rather than, "batch vapor cleaning machines"

5. For all items under 4d (1), (2), (3), and (4). There is a general observation that, although, many of these standards and work practices would also be relevant to airless and airtight operations, they currently only pertain to open top and in-line degreasing operations. OTC may want to consider holding operators of airless and airtight equipment to the same standards of maintenance and conduct as those operators of open top degreasers. For example, (xi) When solvent is added to or drained from the in-line vapor cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface. There are likely many work practices outlined in these sections that would help to minimize emissions if used consistently across all types of equipment and they should be compelled and implemented fairly across all pieces of equipment. Alternatively, the rule already has emission limits in place so, rather than specify the work practices necessary to achieve compliance with those limits, leave these work practices out of the regulation and up to the professional judgment of the operator. In either case the regulation should have common rules and work practices for different cleaning technologies where it makes sense.

6. General question over the phrase, "reduced room draft." Please consider that this phrase may need further definition such as, "velocity over the top of the open top degreaser should not exceed "X" feet per minute."

7. The attached chart demonstrates that comparably sized machines, airless to open top, are allowed different consumption rates. The rule, while minimizing emissions of VOCs, should also create a fair competitive landscape for the various technologies that could be used to achieve the rule's goals and preserve some flexibility in the technical solutions that could be implemented. If two different technologies can clean "X" cubic feet of parts, then both machines emission limits should be the same.

For illustration purposes, the first table below specifies the emission limits for four separate sizes of commercially available (off-set boil sump) open top degreasers. As required by the rule, the emission limit is calculated based on the square foot area of the vapor zone. The second chart assumes that the same size of equipment is an airless or airtight degreaser and, again, calculates the emissions limits. In this case the emission limit, as directed by the rule, is calculated based on the cubic foot volume of the tank. Please note, consistent across all these pieces of equipment, that the emission limits for an open top machine are 1/3 to 1/2 of what is allowed for the airless or airtight machines. The penalty for the open top machine is not as dramatic if the boil sump is not off-set. I will attach a spread sheet to the e-mail that illustrates the calculated emissions limits for different sizes of the following types of equipment:

-Airless / Airtight

-Open top degreaser types:

Off-set boil sump

Open boil sump

Wash/Rinse/Superheat Set down

It is important to create a level playing field for the emission limits from these various technologies. In establishing those limits please consider establishing emission limits for open top equipment that is equivalent to that of airless and airtight equipment

Machine	Vapor Zone Area - Square Feet	Monthly Emission Limit (pounds)
F-100-810	0.6	17
F-100-1010	0.7	21
F-100-1812	1.5	46
F-100-2010	1.4	43
Airless / Airtight machine		
Machine	Tank cap. Cubic feet	Monthly Emission Limit (pounds)
F-100-810	0.3	40
F-100-1010	0.7	69
F-100-1812	1.5	109
F-100-2010	1.2	93

Tank dimensions

F100- 810 = 8x10x6

F100-1010 = 10x10x12

F100-1812 = 18x12x12

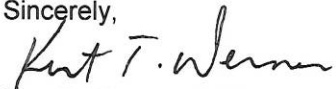
F100-2010 = 20x10x10

8. Under 7. Exemptions. Add the text, "or vapor degreasers" back into the text. Without the exemption for small degreasers, compliance would require the addition of chilling without measurable benefit and a meaningful energy use penalty for operating the equipment.

3M recommends an exemption be made for open top vapor degreasers that have a small vapor/air interface, say less than one foot square. Use of a refrigerated freeboard chiller is not justified, especially when the amount of electricity to run the chiller is considered. The primary condenser satisfactorily contains the vapor. A refrigerated freeboard chiller burdens the small machine with extra cost, makes the machine larger, and offers minimal solvent savings. A better approach would be a working mode cover, freeboard ratio of 1, and optional automation for the vapor dwell.

Thank you for your consideration of these additional comments. Please contact me if you have any questions.

Sincerely,



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