



December 9, 2015

Via Electronic Mail

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RE: Revised Proposed Process Vent Definitions and Subcategories for: *National Emission Standards for Hazardous Air Pollutants for Polyvinyl Chloride and Copolymers Production* ("PVC MACT"), 77 Fed. Reg. 22,848 (April 17, 2012)

Dear Ms. Howard:

This letter follows up the Environmental Protection Agency's ("EPA") request during its November 9, 2015, discussion with the Vinyl Institute PVC MACT Working Group (hereinafter, "Working Group").¹ Specifically, the Working Group was asked to set out its proposal for revising the process vent subcategories in the forthcoming reconsideration of the PVC MACT rule.

As the Working Group noted in its April 8, 2015 letter, process vent limits should recognize: (i) the important differences in PVC process vents that are combined with process vents from EDC/VCM facilities; and (ii) the significance of outflow flow rate and heat input design capacity in demonstrating the difference in class, type, and size of PVC facilities. In its preamble to the PVC MACT rule, EPA recognized the significant differences in the nature of the vent streams between PVC-only facilities and those that are combined with EDC/VCM facilities:

In response to comments submitted by the industry and others, based on our review of those comments and a subsequent review of the testing data submitted in response to our August 21, 2009, CAA section 114 survey and testing request for the PVC industry, we determined that there are significant differences in the size and type of

¹ In addition to Vinyl Institute ("VI") members Formosa Plastics Corporation, U.S.A., Occidental Chemical Corporation/Oxy Vinyls, LP, Mexichem Specialty Resins Inc. (formerly PolyOne Corporation), Shintech Inc., Westlake Chemical Corporation, Lubrizol Corporation, and Wacker Chemicals, the PVC MACT Working Group has included non-VI member Axiall Corporation. The Vinyl Institute, Inc., founded in 1982, is a U.S. trade association representing the leading manufacturers of vinyl, vinyl chloride monomer, vinyl additives and modifiers, and vinyl compound materials.

process vents that originate from PVCPU and process vents from PVCPU that are combined with process vents from other source categories, such as EDC/VCM or other HON sources, prior to control. The differences in the HAP concentrations in the process vent streams arise from the fundamental differences in the products, unit operations, and the manufacturing process of the source categories that are typically co-located with and/or that share a control device with a PVC affected source. Examples include EDC and VCM manufacturing processes, which are commonly co-located with a PVC production process and manufacture the primary raw materials (EDC is used to produce VCM) used in the production of PVC resin.²

As we discussed during our November 9, 2015 call, the concern that informed EPA's decision to subcategorize PVC-Combined vents to include continuous process vents from EDC/VCM manufacturing does not hold when PVC process vents are combined with smaller volume and less-chlorinated non-EDC/VCM batch process vents, such as those pharma and pesticide vents at the no-longer-operating Dow Midland PVC facility or the miscellaneous organics type vent at the Lubrizol PVC facility. The non-PVC streams exiting the Dow and Lubrizol process units are batch chemical synthesis streams that differ, compositionally as well as in terms of related combustion byproducts, from the vent gas from continuously operating EDC/VCM units. The non-PVC vent streams from these two facilities are more typical of batch vents associated with MON facilities and do not contain the highly concentrated chlorinated organics found in EDC/VCM vent streams which are HON facilities.

As fully explained in the Working Group's March 19, 2015 letter, chlorinated load (and the corresponding combustion capacity) is a key factor in the formation of dioxins and furans (D/Fs): the greater the relative chlorinated load, the higher the likelihood that D/Fs will form. In addition, the control of vinyl chloride and HCl are directly related to incoming chloride load. Thus, viewed from the perspective of process vent load, non-EDC/VCM sources from batch operations regulated under the Miscellaneous Organics NESHAP (MON) with relatively low levels of chlorinated compounds have emissions profiles that are more like PVC streams than EDC/VCM streams. Moreover, Dow's and Lubrizol's thermal oxidizers (with capacities of 3 MM•BTU/hr. and 2.2 MM•BTU/hr., respectively) are designed for duty far below that needed for treating an EDC/VCM source: the average size is 61 MM•BTU/hr. and the smallest size (for partial loading of at a source with three other thermal oxidizers) is 21 MM•BTU/hr., which is still some 7 to 10 times larger than the Dow or Lubrizol capacity.

As explained in that March 19, 2015 letter, combustion capacity and outflow flow rate are a function of process vent load and provide data-based support for the proposed subcategorization. If EPA intends to stay with two process vent subcategories, these factors, at a minimum support subcategorization as follows:

² 77 Fed. Reg. 22,848, 22,868–69 (April 17, 2012) (emphasis added).

Table 1: Proposed Subcategorization for Process Vents in PVC MACT					
<u>Facility</u>	<u>PVC Process Vent Combined with HON Waste Gas Streams⁽¹⁾</u>	<u>Design Capacity Heat input, including process vent and supplemental fuels</u> (MM BTU/ Hr.) ⁽²⁾	<u>Average of 3 Run Average Outflow Flow Rate</u> (DSCMM) ⁽³⁾	<u>Source of Non-PVC Waste Gas⁽⁴⁾</u>	<u>% of Waste Gas from Vinyl Chloride Source⁽⁵⁾</u>
Subcategorization 1: PVC Threshold:					
	No	<20	<1 to 150 DSCMM		
Mex NJ VGA	No	0	0.05		100
Mex IL VGA	No	0	0.14		100
GGA	No	12, 12	11		100
SHTFP	No	5, 5, 5, 7, 7	11		100
SHTA	No	5, 5	14		100
OVPA	No	2, 2	15		100
FPC DE	No	1.75, 2	16		100
DOWMI	No	3	32	Pharma, Pesticides	2 to 6
CTLC	No	3.5, 3.5, 3.5	33		100
LUB	No	2.2	33	MON	95
WLCC-2	No	5	43		100
FPC SPVC TX	No	11	56		100
Subcategorization 2: PVC-Combined Threshold					
	Yes	>20	> 150 DSCMM		
GGP	Yes	67, 67, 70	336	EDC/VC	100
SHTP-1, -2	Yes	72, 72, 72, 72	245	EDC/VC	100
FPC TX-2	Yes	21, 30, 40, 40	412	EDC/VC	100
FPC BR-2	Yes	60, 60	198	EDC/VC	100
WLG	Yes	31, 87	650	EDC/VC	100
OVLADP2	Yes	87, 87	1,052	EDC/VC	100
Notes:	(1) VI Information (2) As reported in S114 Survey (3) From EPA S114 Test Data		(4) S114 and VI Information (5) S114 and VI Information		

Table 1 also clearly illustrates the significant differences between the two Mexichem sources and all other industry sources in terms of flow and design capacity heat input. The Working Group believes that these very low flow (significantly less than 1 DSCMM) sources

have sufficiently different emission profiles to justify the creation of a separate subcategory as an alternative to the above grouping.

EPA recognized the importance of differences in process vent outflow when it established subcategories for process vents in the final PVC MACT rule, observing that “the average control device volumetric outlet flow rate is 2,100 percent greater for process vents from PVCPU that are combined with process vents from other source categories compared to process vents that originate only from PVCPU.”³ The Mexichem process vents also differ from other PVC-only process vents in that certain HAPs (e.g., D/F) are completely absent from the outflow, while other HAPs may have higher concentrations. The fact that outflow flow rates from these process vents are more than two orders of magnitude lower than other PVC process vents reflects fundamental process differences that warrant creating a separate subcategory.

Thus, as another alternative for the Agency’s consideration, the table below illustrates how these parameters would support an additional subcategory for very low flow sources:

Table 2: Alternative Proposal with Three Process Vent Subcategories

Number	Subcategory Type	PVC Vent Combined with HON Waste Gas	Design Capacity Heat Input (MM BTU/Hr.)	Outflow (DSCMM)
1	Very Low Flow	No	0	Less than 1
2	PVC	No	>0, <20	1 to 150
3	PVC-Combined	Yes	≥ 20	> 150

In conclusion, subcategorization of PVC-combined process vent streams is an approach that is true to the reasoning EPA initially used to create process vent subcategories, but the approach should be refined to reflect actual process vent chlorine load groupings in the industry. The Working Group therefore proposes the following revisions to the process vent subcategory definition, which more appropriately distinguish the facilities by class, type, and size:

PVC-combined process vent means a process vent that originates from a PVCPU and is combined with one or more process vents including one originating from a major source continuous operation associated with synthetic organic chemical manufacturing, e.g. a HON source another source category prior to being controlled or emitted to the atmosphere.

PVC-only process vent means a process vent that originates from a PVCPU and is not combined with a process vent originating from a HON source but could be combined with another batch chemical manufacturing process vent, e.g. a MON source category prior to being controlled or emitted to the atmosphere.

³ 77 Fed. Reg. at 22,869.

Additionally, if an alternative very low flow subcategory is established, the following definition would apply for those sources:

Very low flow process vent means a process vent that originates from a PVCPU and has an average outflow flow rate of less than 1 dry standard cubic meter per minute.

The Working Group appreciates the Agency's consideration of this proposal. Please do not hesitate to contact me if you have any questions on these issues.

Sincerely,

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