



April 11, 2025

Mr. Chris Bradley Air Quality Specialist South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, California 91765

Dear Mr. Bradley,

Thank you for the opportunity to provide input on the possible proposed revisions to SCAQMD's rule 1171. PRINTING United Alliance (Alliance) appreciates the willingness of the District to work with industry experts in the development of these important requirements. The Alliance hopes that the comments contained herein will prove useful and we stand ready to continue to work with the District in the further development of the requirements.

As background, the Alliance represents the interests of facilities engaged in producing a wide variety of products through screen printing, digital imaging, flexographic, and lithographic print processes. The print industry is comprised primarily of small businesses, with approximately 95 percent of the printing industry falling under the definition of a small business as described by the Small Business Administration.

There has been a long history associated with the cleaning solvent limits for printing operations in Rule 1171. When Rule 1171 was last revised in 1999 for cleaning solvent limits used in the printing industry with the phased in effective dates that extended to January 1, 2010, there was considerable effort invested by the printing industry, solvent suppliers, and the District to find materials that could meet the 100 gram/liter limit and be effective.

As outlined in our letter dated August 21, 2024, this goal has not been achieved. The printing industry and its suppliers have been continuously searching to find blends of chemicals that will meet the cleaning needs of the printing industry and so far, it has not met with satisfactory results.

We are encouraged that an alternative approach using Maximum Incremental Reactivity (MIR) as a parameter to limit the formation of ozone has been included in the proposed revisions to Rule 1171. MIR provides an opportunity to not just rely on VOC content, but to focus on the reactivity of chemicals used to formulate cleaning solution blends. Reactivity-based limits could provide more formulation flexibility while efficiently reducing the ozone formed from these products.

MIR values have been adopted by CARB and the SCAQMD in several rules and allow for flexibility for regulated sources to reduce VOC emissions and reduce emissions of the more reactive VOCs. In reviewing several of these rules, it is apparent that different MIR values have been set based on the type of material, application, and other performance characteristics. These are all critical aspects that need to be considered when setting an MIR value.

In fact, the proposed MIR limits in Rule 1171 reflect the needs of various cleaning applications and there is not a "one size fits all" approach. It is for these reasons why the proposed alternative MIR limit in 1171 (e)(4) would not be appropriate for the printing industry. Here is the draft provision:

(4) Alternative MIR Limit In lieu of complying with the requirements in paragraph (d)(1), a Person may elect to supply for use within South Coast AQMD or use Solvent Cleaning Materials that comply with a PW-MIR limit of 0.38 g O3/g VOC for any Solvent Cleaning Activity.

The printing industry continues to support efforts to reduce ozone precursors and improve regional air quality. However, the proposed MIR limit of 0.38 g O3/g significantly undercuts what is technologically feasible, even when using the most advanced low-reactivity formulations currently available. We received information from several cleaning solution vendors who evaluated the MIR values of their current products they are selling into the District. They reported back that the MIR values were in the 0.51-1.58 g O3/g VOC range. Therefore, the proposed value of 0.38 g O3/g is too low to provide an equivalent level of reactivity and Rule 1171 compliant cleaning solutions.

Furthermore, with acetone having a MIR value of 0.36 g O3/g, it was pointed out that the proposed 0.38 g O3/g limit does not provide for any formulation flexibility. As discussed in the August 21, 2024 letter acetone is not a printing process friendly chemical, so it is not a viable option. This extremely low threshold does not provide for the necessary ingredients that are required to clean the variety of inks and coatings required for quality products produced in the commercial and packaging printing industry. In addition, cleaning printing equipment requires the use of materials that do not damage critical components such as plates, blankets, rollers, screens, bearers, and other key press components. Cleaning solutions that meet the 100 gram/liter limit do not fulfill these requirements.

In looking at the ingredients necessary to prepare cleaning solutions that are effective and meet the demands required for effective cleaning, several of the cleaning solution vendors have reported that a MIR value range of 0.86-0.89 g O3/g. This MIR range provides the opportunity to formulate cleaning solutions that are effective and would avoid problems with ink and coating removal as well as other key press components. Plus, this value is consistent with other SCAQMD and CARB regulations where MIR is being used to control the emissions of VOC.

To ensure that VOC emissions from cleaning activities are reduced to the lowest level possible while maintaining the integrity of the printing process, it can be coupled with a limit on the VOC composite vapor pressure. As described in the August 21, 2024 letter, vapor pressure is a viable VOC control strategy. While the District is not necessarily in favor of using vapor pressure alone as a control strategy, coupling it with a low MIR value ensures that materials with a high vapor pressure will not be used to formulate cleaning solutions that quickly evaporate allowing for their recovery or destruction during the laundering process.

As indicated in the July 20, 2015 report *Environmental Fate of Low Vapor Pressure – Volatile Organic Compounds from Consumer Products: A Modeling Approach* by Deborah H. Bennett, once a low vapor pressure VOC makes it to a wastewater treatment facility, it is removed and not released. USEPA has stated in the Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (EPA-453/R-06-002) low vapor pressure solvents used in conjunction with wipes are assigned a 50% retention factor. EPA defines low vapor pressure as 10 mm Hg at 20°C (68°F). This means that at least 50% of low vapor pressure emissions are captured and destroyed.

Combining the low MIR with a low vapor pressure limit, provides for a very effective VOC emission control strategy. Setting an alternative limit of 5 mm Hg at 68°F, which is one-half of the limit set by USEPA, in conjunction with an MIR value of 0.89 g O3/g in Rule 1171 would significantly reduce emissions and would represent state of the art for cleaning solutions for the printing industry. This combination would result in the least amount of emissions and those that would occur would be VOCs that are less reactive. It would also provide much needed operational flexibility at a reduced cost for the printing industry.

The printing industry continues to support efforts to reduce ozone precursors and improve regional air quality. The District has historically recognized the need for flexibility and category-specific limits based on performance requirements and material availability. Setting an MIR limit of 0.89 g O3/g with a vapor pressure limit of 5 mm Hg at 680F for the printing industry would maintain consistency with prior rulemaking for other industrial categories while still significantly reducing ozone-forming emissions compared to historical solvent use. We firmly believe that our suggestion control strategy would lead to the establishment of a mutually beneficial set of conditions that are both technically and economically feasible while reducing VOC emissions.

We would be willing to meet with representatives from the District to discuss our concerns with the current draft of the proposed regulation. Please feel free to contact Gary Jones, Vice President of Environmental, Health and Safety Affairs, at (703) 359-1363 with any questions you may have or to arrange a meeting time that is convenient for you and the appropriate staff involved in the development of the regulation.

Sincerely,

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Gary A. Jones Vice President EHS Affairs giones@printing.org 703-359-1363