EPA Proposes New Area Source NESHAP Rule for Paint Stripping and Metal/Plastic Surface Coating Operations

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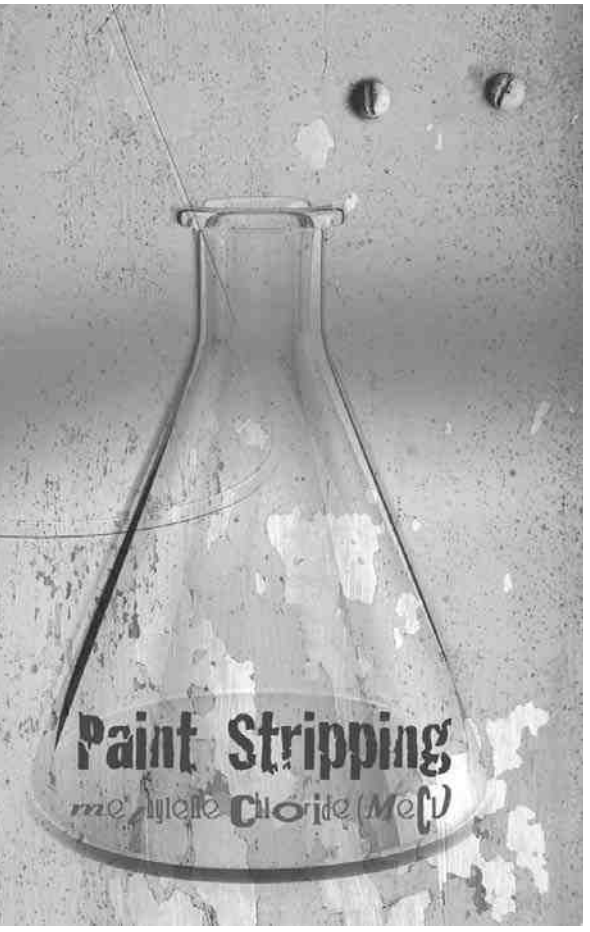

Continuing the flurry of National Emission Standards for Hazardous Air Pollutants (NESHAP) rulemakings for area sources, on September 17, 2007, EPA proposed the NESHAP for area sources engaged in paint stripping and miscellaneous metal and/or plastic parts surface coating operations. Sources potentially subject to the proposed new area source rule include autobody shops, general manufacturing operations with small paint booths, and sources that have accepted synthetic minor hazardous air pollutant (HAP) limits to avoid other surface coating NESHAP standards that only affect major sources (*e.g.*, aerospace manufacturing, miscellaneous metal parts and products coating, plastic parts coating, metal furniture coating).

Regulatory background

An area source is defined in Section 112(a) of the Clean Air Act (CAA) as any stationary source of HAP that is not a major source. A major source is any stationary source or group of stationary sources that emit, or has the potential to emit, considering controls, 10 tons per year (tpy) of any single HAP or 25 tpy of any combination of HAP.

The Integrated Urban Air Toxics Strategy, established under Section 112(k)(3) of the CAA, required EPA to identify no less than 30 HAPs that pose the greatest risk to public health in the largest number of urban areas. EPA was also required to promulgate NESHAP standards for area sources that address 90% of the emissions of said "urban HAP."

In fulfilling this mandate, EPA listed paint stripping, plastic parts and products surface coating and autobody refinishing paint shops among the area source categories of urban HAP that contribute to the risk of public health in urban areas. EPA's September 17th proposed rulemaking under 40 CFR 63, Subpart HHHHHH (NESHAP HHHHHH) aims to reduce HAP emissions from these three area source categories based on the application of generally available control technologies (GACT) such as work practice standards, implementation plans, training requirements, management practices and/or equipment specifications for the affected area sources. The proposed rule does not include any emissions limitations or monitoring requirements.

Proposed rule summary

The proposed area source NESHAP rule would impact the following two types of operations:

- Paint stripping operations that use paint strippers containing methylene chloride (MeCl)
- Miscellaneous coating operations involving the coating of any part of a product made of metal or plastic, or combinations of metal and plastic (including motor vehicles and mobile equipment)

Paint stripping operations

The paint stripping portion of the rule is limited in its applicability to the use of paint strippers containing the urban HAP, MeCl. Under the proposed rule, these operations are required to maintain records of annual usage of paint strippers containing MeCl and the MeCl content of paint strippers used. Additionally, operations must implement management practices which minimize the evaporation of MeCl by addressing, at a minimum, the following five actions:

1. Evaluate the necessity to perform each paint stripping activity (*e.g.*, evaluate whether it is possible to re-coat the part without removing the existing coating),
2. Evaluate each activity to determine whether an alternative paint stripping technology could replace the use of MeCl (*e.g.*, non-MeCl based chemical strippers, media blasting, mechanical stripping),
3. Reduce exposure of all paint strippers containing MeCl to the air (*e.g.*, closing tanks/basins when not inserting, actively cleaning or removing parts; employing use of a water layer or hollow plastic spheres to cover the stripper in tanks/basins),
4. Optimize application conditions to minimize MeCl evaporation when using paint strippers containing MeCl (*e.g.*, do not heat more than absolutely necessary),
5. Practice proper storage and disposal of paint strippers (*e.g.*, store in closed, air tight containers).

In addition to these management practices, each paint stripping operation with an annual usage of 150 gallons or more of MeCl-containing paint strippers must develop and implement a written MeCl minimization plan. At a minimum, the proposed plan is required to address the five management practices listed above, as applicable to the facility's operations. The facility is also required to keep a copy of their current minimization plan on site at all times and post placards/signs outlining the minimization plan in each area where paint stripping with MeCl-containing paint strippers occurs. Large users of MeCl-based strippers are also required to submit an annual compliance report by March 1st of each year. The compliance report would amount to a deviation report for the preceding calendar year, but would also include requirements to report annual MeCl-based stripper usage and methods of paint stripping utilized.

Miscellaneous surface coating

The miscellaneous surface coating operation portion of the rule goes beyond targeting the urban HAP heavy metals (*i.e.*, chromium compounds, lead compounds, manganese compounds and nickel compounds) and pertains to all affected sources that apply surface coatings to metal and/or plastic parts, regardless of whether the coatings used actually contain the targeted urban HAP.

The proposed rule requires the following:

1. All painters must be certified and have completed training in the proper spray application of coatings and proper setup and maintenance of spray equipment.
2. All spray applied coatings must be applied in a booth or preparation station that meets the following specifications:
   - Fitted with polyester fiber or fiberglass filters on the exhaust, or other filter technology demonstrated to achieve at least 98 percent control efficiency, AND
   - Fully enclosed and ventilated at negative pressure if used to refinish complete motor vehicles or mobile equipment, OR
   - Full roof with at least three complete walls or complete side curtains and ventilated so that air is drawn into the booth if used to coat miscellaneous parts or vehicle subassemblies.
3. All spray applied coatings must be applied with high volume low pressure (HVLP) spray guns, electrostatic application or an equivalent technology.
4. All paint spray gun cleaning must be done with a fully enclosed spray gun cleaner, by hand (without solvent atomization), or with non-HAP cleaning solvents.

The painter training program applies to all personnel who spray apply surface coatings and must include hands-on and classroom instruction that addresses, at a minimum, surface preparation; spray gun set-up and operation; spray techniques for different types of coatings to improve transfer efficiency and minimize coating usage and overspray; routine spray booth and filter maintenance; paint mixing, matching and applying; paint application problem solving; causes and cures of finish defects; safety precautions and environmental compliance. Under the proposed rule, the training and associated certification would be valid for a period not to exceed five years, upon which refresher training must be completed.

The proposed rule requires miscellaneous surface coaters to maintain records of training certifications, documentation of filter efficiencies for any non-polyester fiber or non fiberglass filters as determined using methods consistent with American Society of Heating, Refrigeration and Air-Conditioning (ASHRAE) Method 52.1 (Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter) and documentation of the transfer efficiencies of any non HVLP or non electrostatic spray guns as determined using methods equivalent to South Coast Air Quality Management District (SCAQMD) procedures.

The miscellaneous surface coaters are also required to submit an annual compliance report by March 1st of each year. The compliance report will amount to a deviation report for the preceding calendar year.

Proposed area source rule more stringent than major source rules?

Unexpectedly, the proposed area source NESHAP rule contains requirements that would be more stringent than several of the major source NESHAP rules for surface coating operations. Specifically, most of the major source NESHAP rules for surface coaters include very limited work practice requirements for paint stripping and spray gun cleaning, which typically only apply in instances where an add-on control device is employed.

The Miscellaneous Metal Parts and Products Surface Coating NESHAP (40 CFR 63, Subpart MMMM) provides a characteristic example. Sources subject to Subpart MMMM must implement a work practice plan to minimize organic HAP emissions from the storage, mixing, and conveying of cleaning materials, *but only for those coating operations that utilize an add-on control device*.* The work practice plan must include, at a minimum, the following requirements associated with organic HAP-containing cleaning materials: store in closed containers, minimize spills, convey in closed containers or pipes and minimize emissions during cleaning of storage, mixing and conveying equipment.

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* *Under 40 CFR 63, Subpart MMMM, cleaning materials refer to solvent used to remove contaminants and other materials, such as dirt, grease, oil and dried or wet coating (e.g., depainting or paint stripping), from a substrate before or after coating application or from equipment associated with a coating operation (e.g., spray booths, spray guns, racks, tanks and hangers).*

From a paint stripping perspective, the proposed area source NESHAP is more limited in scope since it only applies to MeCl-containing materials, but is broader in scope in that it requires the use of management practices regardless of whether add-on control devices are employed. For spray gun cleaning, the proposed rule is much broader in scope because it requires the use of fully enclosed spray gun cleaners, manual spray gun cleaning without solvent atomization or the use of non-HAP cleaning solvents regardless of whether add-on control devices are employed.

The contradiction between the stringency of the proposed area source and the majority of the major source NESHAP rules for surface coating operations is even more apparent when it comes to the transfer efficiency and overspray filter requirements. Of the 15 major source NESHAP rules for surface coating operations, the Aerospace Manufacturing and Rework NESHAP (40 CFR 63, Subpart GG) and the Wood Furniture Manufacturing NESHAP (40 CFR 63, Subpart II) are the only ones containing requirements on the types of spray application methods that can be utilized, and both rules contain several exemptions from these requirements.** The proposed area source rule, on the other hand, would require all spray coating operations to utilize HVLP, electrostatic or other application methods achieving equivalent transfer efficiencies.

Similarly, 40 CFR 63, Subpart GG is the only major source NESHAP rule containing requirements for overspray filtration, but which only applies when aerospace coatings that contain inorganic HAP are spray applied. In contrast, the proposed area source rule requires specific types of overspray filters to be used on all spray coating operations. It is interesting to note, however, that the established filter certification requirements utilized for Subpart GG (*i.e.*, Method 319) are not specified in the proposed area source rule.

Lastly, the proposed area source rule contains unprecedented painter training and certification requirements as described above. The only major source NESHAP rule for surface coating operations that contain any type of painter training is the Wood Furniture Manufacturing NESHAP (40 CFR 63, Subpart II). Even so, the Subpart II training is limited to the requirements of Subpart II, not required to include hands-on instruction, and required only on a one-time basis.

Implications of the proposed rule

EPA estimates that there are approximately 39,000 sources that would be affected by the proposed area source rule (3,000 paint stripping facilities; 36,000 surface coaters)! As proposed, existing affected sources must be in compliance within two (2) years of the date of publication of the final rule, which is expected to occur by December 15, 2007, due to a court ordered deadline. A large number of these sources already incorporate many of the work practices required by the proposed rule due to non-environmental considerations (*e.g.*, paint quality issues, protection of the integrity of exhaust fans). However, it is also common for these same sources to perform small amounts of out-of-sequence coating outside of booths, allow individual painters to utilize their preferred spray gun types and to atomize solvent when cleaning spray guns - all of which would be prohibited under the proposed area source NESHAP rule.

The proposed area source NESHAP rule would require all sources to place a heightened level of scrutiny on day-to-day operations to ensure the required work practices are implemented at all times. Given that a large majority of the affected sources are likely to be small businesses that have limited resources available to ensure compliance with the fine details of the rule, only the best-prepared facilities are likely to navigate the rule deviation-free. *P&SF*

About the Authors

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** *For example, 40 CFR 63, Subpart GG only requires specific application techniques (e.g., HVLP or electrostatic spray) to be utilized if the coatings being applied contain inorganic HAP (e.g., chromium compounds).*