

wall of the can and iron out folds in the metal. Surface coatings, both interior and exterior, are then applied to the formed can.

There are several reasons why D&I can body coating is a separate subcategory. In both annual production and overall HAP emissions, cans made by the D&I process make up the largest component of the metal can manufacturing industry. The processes by which they are produced and surface-coated, and, to some extent, the coatings used, differ significantly from those used for other types of cans, and because of existing VOC rules and the coating processes and configuration of D&I facilities, emission control devices are commonly used.

While the general production and coating application processes are similar for all D&I cans, differences in coating types and relative amount of coating used for cans with different end uses warrant a further subdivision of that subcategory into three coating type segments: (1) Two-piece beverage can coatings, (2) two-piece food can coatings, and (3) one-piece aerosol can coatings. A different MACT standard is proposed for each of those segments.

Sheetcoating. The subcategory includes all of the flat metal sheet coating operations associated with the manufacture of three-piece cans, decorative tins, crowns and closures, and two-piece draw-redraw cans. The methods of coating application and the types of coatings used on flat sheets differ significantly from those used in the other subcategories. The coatings (interior and exterior base coatings, decorative inks, and overvarnishes) are most commonly applied by roller to the flat metal sheets, which then pass through a curing oven. While those emission points are sometimes uncontrolled, the best-performing sources typically control emissions through the use of ultraviolet cured coatings or partial or total enclosures routed to thermal or catalytic oxidizers that achieve destruction efficiencies of 95 percent or higher. Decorative inks, which make up a significant proportion of the coatings used in sheetcoating, have very low concentrations of HAP and are inherently low-emitting.

Three-Piece Can Body Assembly Coatings. Three-piece cans consist of an open-ended can body and two separate ends. Can body assembly is the step in the three-piece can manufacturing process in which flat body blanks are formed into a cylinder and the side seams are joined together. Coating operations associated with can body assembly are interior and exterior side

seam stripe and inside spray applications.

Several characteristics of three-piece can body assembly coating place it in a separate subcategory. Can assembly facilities use only a limited number of coatings in relatively small total volumes. Side seam striping is unique in that the application process and coating formulations have higher solvency requirements than other can body and end coatings and end seal compounds. Side seam stripe emissions are typically uncontrolled because emission rates are low and capturing emissions is not economical due to high air flow rates and low solvent loading.

Three-piece cans made for different end uses and contents require coatings, particularly side seam stripes, with widely differing chemical characteristics and shelf life requirements. Some food cans must be sterilized before filling by subjecting them to high temperature steam, chemicals, or a combination of both, while other food cans do not require this kind of aseptic processing. Different kinds of foods vary in their acid contents. Coatings required on cans for these different end uses often have significantly different HAP contents. Inside spray coatings also differ from side seam stripes in quantity used and chemical composition. For those reasons, the three-piece can body assembly coating subcategory is divided into five distinct coating type segments with different emission limits for each. Those segments include: (1) Inside spray coatings, (2) aseptic side seam stripe coatings for food cans, (3) non-aseptic side seam stripe coatings for food cans, (4) side seam stripe coatings for non-food general line cans, and (5) side seam stripe coatings for non-food aerosol cans.

End Lining Coatings. End lining coating operations consisting of the application of end seal compounds to can ends are in a separate subcategory for several reasons. Unlike other coatings, end seal compounds are applied in a bead around the edges of can ends. Curing takes place under ambient conditions (not in a curing oven) over a longer period of time than other coatings. And the coating formulation (solids content, types of solvents used) of end seal compounds differs significantly from other coatings. Emissions from end lining operations are not controlled because the curing rate of end seal compounds is slow. Controlling such volatile HAP emissions is not cost effective, since it would result in a high volume, low concentration emission stream requiring

significant auxiliary fuel usage to achieve a high destruction efficiency.

As with side seam stripes, some end seal compounds must withstand aseptic processing while others do not have to meet that requirement. There are significant differences in formulation and HAP content (and emissions) for end seal compounds for aseptic and non-aseptic applications. For that reason the end lining subcategory is divided into two coating type segments: aseptic and non-aseptic.

B. How Did We Select the Regulated Pollutants?

Organic HAP. Available emission data collected during the development of the proposed rule show that the primary organic HAP emitted from metal can surface coating operations include EGBE and other glycol ethers, xylenes, hexane, MEK, and MIBK. Those compounds account for 95 percent of that source category's nationwide organic HAP emissions. Other significant organic HAP emissions include isophorone, ethyl benzene, toluene, trichloroethylene, formaldehyde, and naphthalene. Because coatings used by metal can surface coating operations contain many combinations of those and other organic HAP, it is not practical to regulate them individually. Therefore, the proposed rule would regulate emissions of all organic HAP.

Inorganic HAP. Based on information reported during the development of the proposed rule, inorganic HAP contained in the coatings used by that source category include chromium, manganese, and antimony compounds. Because these inorganic compounds are in the coating solids, they are retained in the dry (film) coating on the substrate to which the coating is applied. The only opportunity for any quantifiable solids material to enter the ambient air is if they are spray-applied and emitted as overspray. Because of the atomization of the coating during spray application, inorganic compounds become airborne and are either deposited on the substrate, fall to the floor in the spray application area, or enter the air and become susceptible to transport to other areas in the building or outside into the ambient air. The data available to EPA indicate that the facilities in that source category that use spray application techniques in rare instances apply coatings that contain inorganic HAP compounds. However, because they do not have emission control systems for inorganic compounds, there is no demonstrated control technology on which to base a standard. Therefore, the proposed rule would not regulate emissions of inorganic HAP.