Enhancement of the U.S. EPA's Metal Finishing Facility Risk Screening Tool (MFFRST)

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Recently, the U.S. EPA completed the development of the first version of MFFRST and made this product available to the general public. MFFRST calculates the air emissions from a plating line and determines the risk to facility employees and the surrounding neighborhood from the air emissions. The next step in the development of MFFRST is to include solid and liquid wastes in the analysis. In order to accurately estimate the risks associated with these waste streams, the quantity of waste generated and the mass of hazardous substances they contain must be known. The second version of MFFRST will utilize process synthesis and integration techniques to simulate the metal finishing process. Process synthesis and integration devolve the process into simple structures that can then be combined to create a model of the plating line. The quantity and composition of waste streams can then be calculated. The model can then be used to analyze the effect of process modifications on waste generation. The ultimate goal of the program is to enable the user to evaluate the process to analyze any of a number of factors, including quantity and composition of wastes generated, cost/benefit analysis of waste reduction processes, and/or life cycle analysis of the metal finishing process.

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