



## Project Summary

# Surface-coating-free Materials Workshop Summary Report

C. M. Norheim, M.W. Moore, and J.L. Warren

The report documents a pollution prevention workshop exploring the concept of surface-coating-free materials (SCFMs), the potential impact of this type of material on volatile organic compound (VOC) and air toxic emissions from surface coating operations, and the means for promoting the SCFM ethic. The purpose of the report is to summarize and present the information as it was discussed at the workshop.

*This Project Summary was developed by EPA's Air and Energy Engineering Research Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).*

### Introduction

The national ambient air quality standard for ozone (0.12 ppm) is exceeded in over 100 geographic areas throughout the U.S. Extensive reduction of volatile organic compound (VOC) emissions is required for attainment. The difficulty of dealing with stationary area sources has been a major obstacle to attaining these reductions.

Surface coating operations release approximately 15 % of stationary area VOC emissions as estimated by the 1985 National Acid Precipitation Assessment Program (NAPAP) emissions inventory. Emissions occur during initial coating, as well as each time that a surface is recoated during the life of the object or structure. If materials or products could be developed that do not need coating during either

manufacture or use (SCFMs), it is anticipated that VOC emissions could be reduced. Many of the VOC and other emissions from surface coating operations are also air toxics with additional impacts on human health and the environment.

The workshop consisted of two parts: technical paper presentations and brainstorming sessions. Technical papers were presented by representatives of varied industries that currently use or are developing SCFMs. The papers were grouped into five sessions:

- Architectural Products,
- Applications for Uncoated Metals,
- Plastic Materials and Films,
- Development of Materials for High Temperature Applications, and
- Regulatory Perspective.

The focus of the small group brainstorming sessions was to discuss topics related to the use of SCFMs. A major objective of these sessions was to identify and develop pollution prevention research concepts and recommendations for consideration by EPA that could expand the use of SCFMs. The brainstorming session topics were:

- *Barriers to technology innovation and regulatory and economic incentives.* The purpose of this session was to focus first on barriers to technology innovation and then on potential regulatory and economic incentives that could break down these barriers and encourage the use of SCFMs. Major barriers that were identified at the workshop were:



- High development costs,
- New product uncertainty,
- Regulatory uncertainty,
- Corporate bureaucracies,
- Technology transfer,
- Environmental life-cycle costs, and
- Military specifications.

Regulatory and economic incentives that were discussed were:

- Tax incentives,
- User tax,
- Enhanced regulatory environment, and
- Improved communications, EPA public relations, and technology transfer.

- *Methods for enhancing the appearance and marketability of SCFMs.* This session focused on issues related to developing SCFMs with appearance and quality similar to traditional materials requiring surface coating. The key topics that emerged from the discussion groups were:

- Life-time of product,
- Quality of final product,
- Differences among markets,
- Appearance/marketability issues,
- Management issues, and
- Regulatory environment.

- *Potential pollution prevention research, development, and demonstration projects.* One of the primary goals of this workshop was to identify potential research projects related to the use of SCFMs. In addition to

the identification and potential use of SCFM research projects, a significant amount of time was spent discussing potential research projects related to low- and no-VOC coatings. All of these projects are listed in the full report.

In conclusion, it was stated that, although a wide variety of materials are currently used uncoated, the concept of increasing and encouraging their use as a means for helping to reduce VOC emissions from surface coating operations is new. It was recommended that EPA continue to advance the concept through the use of research and technology transfer. In conjunction with the further development of the concept of SCFMs, there needs to be an investigation of the life-cycle impacts of the use of specific materials. Finally, it was noted by several of the workshop participants that coatings serve many very important functions and will continue to do so in the future. Therefore, it was recommended that EPA focus on the development and demonstration of low- and no-VOC coatings in addition to SCFMs.

The workshop provided an opportunity for discussion of a new pollution prevention concept that could result in reduced VOC and air toxic emissions from coating operations. A wide variety of organizations/industries were represented. This diversity resulted in a unique forum for the exchange of information and differing viewpoints. The full report summarizes the background, methodology used in planning the workshop, discussions that took place in the brainstorming sessions, and recommendations from the workshop. Also included with the report are the technical papers presented as part of the workshop.

*C. M. Norheim, M. W. Moore and J.L. Warren are with Research Triangle Institute, Research Triangle Park, NC 27709*

*Michael Kosusko is the EPA Project Officer (see below).*

*The complete report, entitled "Surface-coating-free Materials Workshop Summary Report," (Order No. PB93-101 160/AS; Cost: \$26.00; subject to change) will be available only from:*

*National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161  
Telephone: 703-487-4650*

*The EPA Project Officer can be contacted at:  
Air and Energy Engineering Research Laboratory  
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