

US EPA ARCHIVE DOCUMENT

OWNER/OPERATOR INFORMATION SHEET



Could your family be affected?

One company substituted higher-solids paints for conventional solvent-borne coatings, which resulted in increased transfer efficiency and a 30% decrease in VOC emissions and paint wastes. Also, the company saved \$28,000 in paint purchases and paint disposal costs.

— North Carolina Division of Pollution Prevention and Environmental Assistance

The Coatings Guide™ is an online pollution prevention tool for paints and coatings.

This guide contains several tools to identify low-VOC and/or low toxic air pollutant content coatings that may be suitable replacements.

— U.S. EPA



Reducing Air Pollution from: Painting and Coating Operations

Why should my painting and coating operation reduce air pollution?

People who are exposed to air toxics at sufficient concentrations, for sufficient durations, may increase their chances of getting cancer or experiencing other serious health effects, such as reproductive problems, birth defects, and aggravated asthma.

Pollution prevention safeguards the health of your employees, customers, and families by using materials, processes, or practices that can reduce or eliminate air pollution at the source.

Pollution prevention practices also save money on waste disposal, materials usage, and the cost of air pollution controls.

You may already be regulated by federal, state, local, and Tribal agencies and may already voluntarily implement pollution prevention practices. However, increasing pollution prevention efforts further minimizes the impacts on human health and the environment.

Why should I be concerned about air pollution from my painting and coating operation?

- Painting and coating operations can produce emissions of toxic air pollutants.
- Lubricants, degreasers, and cleaners can release some toxic air pollutants and volatile organic compounds (VOC). Chemicals in these substances can react in the air to form ground-level ozone (smog), which has been linked to a number of respiratory effects.
- While federal, state, local, and Tribal regulations limit the amount of emissions from painting and coating operations, dangerous releases of toxic air pollutants can occur if a

painting and coating operation is not in compliance with regulations.

How can I reduce air pollution from my painting and coating operation?

Substitute Materials

- Use cleaners with low toxic air pollutants and VOC such as water-based, alkaline, or microbial cleaners. These can reduce air pollutant emissions up to 90%.
- Use paint types such as waterborne paints, powder coatings, ultraviolet (UV) light or electron beam-curable coatings, or higher-solids paints.

Change Processes

- Minimize the need for cleaning solvents by using waterborne paints.
- Use a coating method that does not require spraying such as electrodeposition, dip coating, roller coating, or flow coating.

Improve Spraying

- Use more efficient paint application equipment to reduce overspray such as switching to a high-volume, low-pressure spray (HVLP), airless spray, air-assisted airless spray, or electrostatic spray guns.
- Train painters in proper spray application techniques. Proper training, which includes information on gun position, motion, triggering, and overlap, can reduce air pollutant emissions and enhance the quality of the paint finish.
- Minimizing overspray results in less labor and product used and fewer air pollutants generated.

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Painting and Coating Operations

Lower Emissions at the Source

- Open containers only when adding or dispensing materials. This minimizes evaporative emissions and waste.
- Use air-tight containers to store solvents, paints, and other coatings.
- Use a spray booth to capture and control emissions.

Change Cleaning Procedures

- Use enclosed or mechanical parts and gun washing systems to reduce evaporative emissions.
- Monitor the amount of cleaning solvent used during cleanup to avoid excess usage.
- Reuse cleaning solution or solvent. Use dirty solvent for initial cleaning, then follow with clean solvent.
- Schedule color changes to minimize cleaning needed between colors. Paint products with light colors and then follow with increasingly darker colors.

Upgrade Your Operation's Equipment

- Check with your state, local, or Tribal pollution prevention office for funding possibilities.

Are HVLP spray guns really better? Where can I find out about training?

HVLP guns are better than conventional atomized air spray guns if technicians are trained properly. VOC emissions released during a painting operation are directly related to the skill of the spray gun operator.

Properly used HVLP spray guns often result in a higher transfer efficiency, which results in reduced overspray.

Reduced overspray minimizes costs and worker exposure to toxic emissions.

Information about training may be found at

- Iowa Waste Reduction Center: www.iwrc.org/programs/STAR.cfm or call 1-800-422-3109.
- State, local, or Tribal pollution prevention offices.
- Spray equipment suppliers.
- Trade associations for painting and coating operations.

What else can I do to reduce air pollution?

Your community may already have groups working for cleaner air. Your expertise and knowledge can be very helpful to these groups.

Many pollution prevention offices offer free on-site assessments for interested businesses. A list of these small business assistance programs can be found at www.epa.gov/smallbusiness. This site provides information about assistance and technical help, environmental experts, environmental regulations and laws, funding, and cost-saving opportunities.

Refer your customers to Web sites for the Solvent Alternatives Guide (www.sage.rti.org) and The Coatings Guide™ (www.cage.rti.org) where they can increase their understanding of alternative paints and coatings. Stay involved with trade associations and keep up to date with industry developments through industry-related Web sites.

Sponsor employee awards for good ideas, great efforts, and dedication to pollution prevention. For example, you could provide a cash award for workers who implement a work practice that reduces both costs and pollution.

EPA's Sector Strategies Program works within the painting and coating operations sector to assess opportunities for improving environmental performance while reducing regulatory burden.

— U.S. EPA



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Painting and Coating Operations



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The cost of on-site
distillation units depends
on size.

2-gallon still: \$2,100
3.5-gallon still: \$3,000
5-gallon still: \$4,000
7.5-gallon still: \$4,700
15-gallon still: \$8,500

These prices do not
include vacuum assist
costs.

— Iowa Waste Reduction
Center

In a conventional spray
painting process, as
much as 70% or more of
the paint may miss its
target surface. Using
more efficient application
methods can substantially
reduce that amount.

— Ohio
Environmental Protection



Resources

- National Paint and Coatings Association: www.paint.org, (202) 462-6272
- Community-Based Projects: www.epa.gov/air/toxicair/community.html
- EPA's Sector Strategies Partnership Program for the Paint and Coating Sector: www.epa.gov/sectors/paintcoatings/index.html, (202) 566-2958
- Paints and Coatings Resource Center: www.paintcenter.org
- Iowa Waste and Reduction Center STAR[®] Training: www.iwrc.org/programs/STAR.cfm, (800) 422-3109
- Spray painting options: www.wmrc.uiuc.edu/main_sections/info_services/library_docs/TN/98-048.pdf
- Painting and coating operations: www.epa.state.oh.us/opp/paints/fact23.html
- Good operating practices: www.dep.state.ct.us/wst/p2/industry/optindex.htm

National Emission Standards for Hazardous Air Pollutants

- Auto and Light-Duty Truck Surface Coating Operations: www.epa.gov/ttn/atw/auto/autopg.html
- Large Appliance Surface Coating Operations: www.epa.gov/ttn/atw/lapp/lapplpg.html
- Magnetic Tape Manufacturing: www.epa.gov/ttn/atw/magtape/magtappg.html
- Metal Can Surface Coating Operations: www.epa.gov/ttn/atw/mcan/mcanpg.html
- Metal Coil Surface Coating Operations: www.epa.gov/ttn/atw/mcoil/mcoilpg.html
- Miscellaneous Metal Parts and Products Surface Coating Operations: www.epa.gov/ttn/atw/misc/miscpg.html
- Paper and Other Web Surface Coating Operations: www.epa.gov/ttn/atw/powc/powcpg.html
- Surface Coating of Plastic Parts and Products: www.epa.gov/ttn/atw/plastic/plasticpg.html
- Wood Building Products Surface Coating Operations: www.epa.gov/ttn/atw/wbldg/wbldgpg.html

Alternatives

- Solvent Alternatives Guide: www.sage.rti.org
- The Coatings Guide[™]: www.cage.rti.org
- Biochemical solvents: www.carbohydrateeconomy.org/library/admin/uploadedfiles/Biochemical_Solvents_or_Pollution_Prevention.html

Toxicity of Solvents

- Integrated Risk Information Systems (IRIS): www.epa.gov/iris
- Air Toxics Health Effects Notebooks: www.epa.gov/ttn/atw/hapindex.html