University of Missouri Extension

WM6009, New February 1996

Setting Up a Used Latex Paint Collection Site

Marie Steinwachs
Office of Waste Management

Regulatory

This technical bulletin describes collection procedures and management options for latex paint only. Solvent-based paint requires very different management procedures. Review the entire bulletin before beginning the program.

Latex paint is not listed as a hazardous waste by the U.S. Environmental Protection Agency (EPA) or the Missouri Department of Natural Resources (MDNR). However, latex paint must be managed in a way that does not adversely affect human health and the environment, or create a public nuisance.

Interior latex paint manufactured prior to August 1990 and exterior latex paint manufactured prior to May 1991 may contain mercury fungicides. Paint manufactured before 1977 may contain more than 600 parts per million (ppm) of lead. Because these metals are toxic, paints containing them may be considered hazardous materials. Any latex paint may contain glycol ethers, organic solvents and pigments, which when disposed of improperly can contaminate our water resources.

A responsible way to manage unwanted latex paint is through a community collection program. Setting up a collection program for latex paint requires no special permits. Many communities have combined latex paint collections with other easily recycled materials (such as used motor oil, oil filters, antifreeze, lead-acid batteries and fluorescent light tubes). Once collected, latex paint may become a valuable resource that can be used by government agencies, community groups, citizens or businesses.

Choosing a collection program

In planning a collection, communities must first determine who will receive the collected latex paint. Your budget and the identity of the end-user will determine the type of collection program that is appropriate for your community. Communities and organizations should consider using recycled paint when possible. The United States General Services Administration (GSA) has identified specifications for remanufactured paint and encourages its use by all federal agencies.

A paint exchange or "drop and swap" program yields paint that is limited by the type and color of paint brought to the collection. Typically, paint is available "as is" and free of charge. This paint may be sufficient for some applications, such as home touch-ups and building maintenance. This is the easiest and least costly type of collection program.

Bulking paint for reuse yields uniform batches of paint, but the color cannot be exactly matched from one batch to the next. Usually, bulked paint is not tested for performance and content specifications, although it could be at an additional cost. Bulked paint may be sufficient for projects not requiring commercial quality paint and specific color choices, such as frequently-painted public buildings. Typically, this paint is provided free or at a minimal cost. A paint bulking program may require more money, equipment, time and space than a drop and swap program.

Paint remanufacturing or recycling provides a consistent paint that meets manufacturer's specifications for color, content and performance. In order to meet these specifications, the final paint may not be 100 percent post-consumer paint. This type of program requires a contract with a paint manufacturer. Collected paint is shipped for

remanufacturing in the original cans or in drums. The manufacturer may charge a reprocessing fee and can return the remanufactured paint to the sender, if requested. The high quality paint also may be sold to the public or to government purchasing programs. See "Pre-event planning for paint remanufacturing program" section of this publication for additional information on selecting a manufacturer.

Technical

Site

A latex paint collection could be held at a city- or county-owned facility, fire station, landfill, school, recycling center or privately-owned business. The collection site can be a building or lot that is surrounded by an impervious containment area, in case of spills. It is recommended that the owner/operator of the site provide security and control over the collection at all times. Staff should be present to receive the latex paint during open hours. The site should be locked after hours to prevent dumping of unwanted materials. A prominent sign displayed at the site should inform users of the hours of operation and any paint acceptance restrictions, such as only accepting latex paint.

If this is a one-day collection event, traffic flow will have to be controlled by creating lanes for entering and leaving the site. If paint can be picked up during this event, a separate traffic flow path may be needed.

Equipment

- Tables and other working surfaces to sort paint and to display information
- Heavy-mil plastic sheeting to place under and over work areas
- Duct tape for taping plastic to tables, etc.
- Roll-off containers for solid waste and recyclable materials (empty paint cans and cardboard boxes)
- Paint can openers and closers
- Markers to label usable and unusable paint
- Personal protection equipment for each worker: neoprene gloves, chemical splash goggles, and coated Tyvek® disposable aprons, lab coats or overalls
- Signs, traffic cones and safety vests to be used in directing traffic
- First aid kits
- Non-biodegradable absorbents, such as cat litter box filler or a commercial product, for cleaning up minor spills

Additional equipment needed for latex paint bulking

- Paint can scrapers (Some groups use their gloved hands, spatulas, or wooden dowels to scrape out the paint. Scrapers can be fabricated which fit onto the drum.)
- 55-gallon drum with open top and gate valve for viscous liquids (also called a molasses valve) installed in a bottom bung (These drums may be obtained from local industries at a reduced cost.)
- Screen frame that fits in the drum to support draining paint cans (Expanded metal, available from metal works businesses, serves well for screening.)
- Heavy-duty portable mixer that can blend the viscous paint in the drum (Paint blenders are commercially available or they can be fabricated. Another method of paint bulking is "mini-bulking." The good latex paint is sorted, poured into 5-gallon buckets, and blended by using a hand drill with a mixing adapter. While this does not require a large investment in equipment, there is little color consistency between the buckets of paint. This also may require more physical effort than the larger bulking method.)
- Buckets to distribute bulked paint (5-gallon buckets can often be obtained free or for a reduced cost from local businesses, such as bakeries.)

Recommended procedures

General pre-event planning

- Identify who in the community may be interested in co-sponsoring the collection. Determine the tasks each sponsor is willing to accept and create a timeline of completion.
- Determine the type of resources each sponsor is able to contribute to the collection, such as volunteers, money, promotion, expertise, equipment and refreshments.
- Confirm the target area for the collection. Determine how you will identify those who are eligible to participate in the collection.
- An application, prior to having the collection, may help to determine who wants the paint and in what quantity. Send the application to agencies that maintain such structures as public parks and buildings, fairgrounds, schools, fences, bleachers, public housing units, bus stands, street markings and litter containers. Groups that may be interested in using the paint include storm drain stencilers, housing advocates, youth and church campgrounds, civic organizations, sign painters, building contractors, graffiti eradicators, theater groups and disaster relief organizations.
- Consider notifying emergency response providers that the event will be taking place. Involve them in the planning, if possible.
- Hold a neighborhood meeting to discuss the planned latex paint collection event and its impact, if any, with the citizens who live near the collection site.
- Identify paint manufacturers who might be willing to assist with the paint collection. Check the local telephone directory for listings or contact the National Paint and Coatings Association, 1500 Rhode Island Ave., N.W., Washington, D.C. 20005, 202-332-3194.
- Arrange for workers to collect the paint from the public. These may include paid staff, volunteers and community service workers.
- Train paint collection workers about safe handling procedures, acceptance criteria, personal protection equipment, bulking techniques (if applicable), public relations and community education.
- Determine if unusable paint and any other home maintenance products will be accepted and, if so, how to manage them. See "Fate of unusable latex paint" and "Fate of other materials" sections for ideas on management.
- For additional guidance on collection event preparation, worker training and management, please refer to the "Resources" section of this bulletin.

Pre-event planning for paint remanufacturing programs

- Work with local retail outlets or paint manufacturers in your area. Retailers might accept their brand back for consolidation.
- Determine if the company operates in a safe and environmentally-sound fashion by checking with the following sources:
    - Nearby municipalities and local businesses that may have worked with the company in the past;
    - The Chamber of Commerce or Better Business Bureau to find out if any complaints have been registered against a company or facility; and
    - The Missouri Department of Natural Resources, which may know whether the company has had any compliance problems.

Checking sources and choosing a company can be time-consuming. Begin your research well ahead of the collection program.

The following are other issues which should be considered when choosing a paint manufacturer and should be specified in a contract between the collection program and paint manufacturer:

- The manufacturer's sorting specifications and whether or not they prefer to receive the paint bulked in 55-gallon drums;
- Who pays for the reprocessing and transportation from the collection site;
- If the manufacturer will add virgin materials to the collected paint in order to create specific, reproducible colors;
- How the manufacturer will repackage and label the paint; and
- Who is responsible for transporting, distributing and marketing the remanufactured paint. Some manufacturers insist that the sender purchase the recycled paint in exchange for reprocessing it. Other manufacturers may charge

a reprocessing fee and not require that the paint be taken back. Then the manufacturer finds a user for the paint or it is used as an ingredient to make a commercially available paint with recycled content.

Publicity

- Announce the opening of the collection to the public. Identify the location, hours and days of operation, types of materials accepted, safe transport instructions (Table 1), materials available for reuse and sponsors of the program.
- Publicize when and where the paint will be distributed.
- Describe how the paint can be used.

Table 1
Safe transport instructions

1. Keep paint in its original can. Do not mix products.
2. Check all cans making sure that the lids are tightly sealed.
3. If the can is leaking, it should be placed within a larger, plastic container with a tight-fitting lid. Label the outside of the container with the contents and date. Small leaks can be contained in a sealed, plastic bag.
4. Place cans upright in a cardboard box and secure so that they do not tip over in transport.
5. Transport cans in the back of a pickup truck or in a car trunk. If you must transport the cans in the passenger compartment, make sure there is adequate ventilation.

Community education

The collection may provide an opportunity to educate the community on reducing paint waste through accurate estimates of the amounts needed and through proper storage.

The collection can also provide an opportunity to gather data by surveying participant demographics, interest and understanding of household hazardous waste concerns.

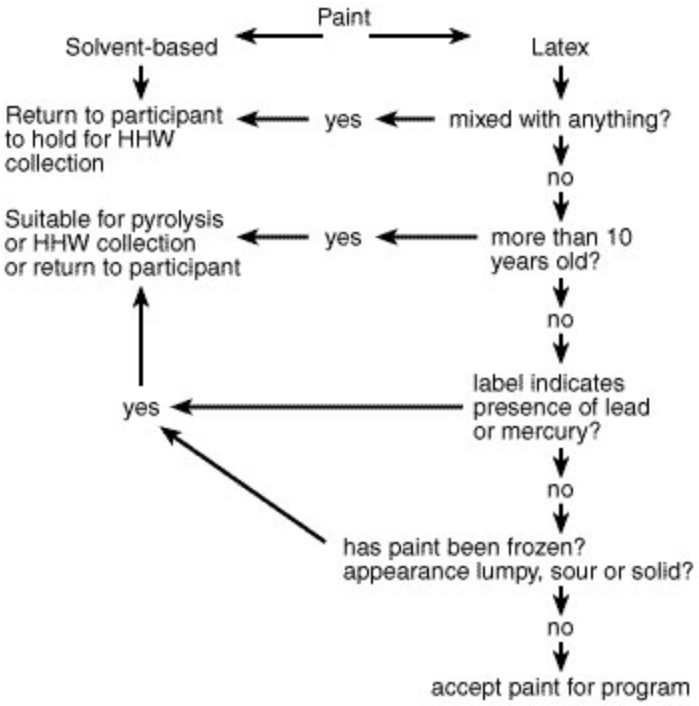

Figure 1
Paint sorting protocol. (Adapted from "Sorting Protocols for Paint Recycling," (1994) by Jim Quinn. From The Proceedings of the Ninth National Conference on Household Hazardous Waste Management.)

At the collection

- Consider having participants provide their name, address and phone number and sign a statement of disclosure guaranteeing that the latex paint is not contaminated.
- Accept paint in original cans. For paint drop and swap programs, some groups accept only cans containing one-third or more of the paint.
- Briefly confirm that the content agrees with the label of each paint can before the participant leaves the collection site. Do not accept any product that cannot be identified as a latex or water-based paint. Paint collection programs report that up to 50 percent of the paint brought to a collection is unusable. Therefore, the quality of the resulting paint will depend on how carefully the incoming paint is screened. See the "Fate of unusable latex paint" and "Fate of other materials" section for more information.
- Sort paint using protocol in Figure 1. To reduce possible contamination from mercury and lead, exclude paint older than 10 years and paint with labels that indicate the presence of mercury (may be listed as phenylmercury, mercury acetate, mercury succinate or mildew-resistant) and lead (may be listed as red or white lead, leaded zinc oxide, or litharge) from the collection or waste exchange. Additional information is included in the Management section.
- If a large turnout is expected and the budget is tight, consider limiting the amount of paint accepted from each participant.

Management

Processing the paint

For paint drop and swap programs

- Sort paint by type (such as flat, gloss, semi-gloss and primers) and by color (such as interior white, interior light, interior dark, exterior white, exterior light and exterior dark) to assist those picking up paint in their selection.
- Since it would be prohibitively expensive to test each paint can for the presence of mercury and other contaminates, some groups have cautioned participants to use their paint for exterior use only, with adequate ventilation. These groups label the paint, "For Exterior Use Only." See Figure 2 for a sample label.

Figure 2
Sample bulked latex paint can label. (The following table includes the label information found in Figure 2 on the printed version of this publication.)

Recycled household latex paint

Surface preparation

- **Previously painted surfaces**
  To obtain the best adhesion the surface must be clean, dry and free from loose or peeling paint.
- **If the surface is contaminated (with grease, wax, soap residue, dirt, mildew, etc)**
  Wash thoroughly with a mild detergent or surface cleaner, rinse and let dry before painting.
- **If the surface is glossy**
  It should be roughened slightly to provide best adhesion. Use fine grade of sandpaper. Remove any sanding dust or residue and let dry before painting.
- **If the surface is cracked or has loose or peeling paint**
  Remove loose paint and patch surface prior to painting. Cracks, holes and minor defects should be corrected with spackling paste or patching compound. When dry, sand smooth and spot prime patched areas.

Application

- Stir thoroughly and do not thin.
- Apply paint generously and do not spread excessively.

Use for exterior painting only (optional).
- Use quality rollers, brushes and pads.

Clean-up

- Clean up spills and drips immediately with a damp cloth.
- Wash tools with soapy water and rinse.
- Clean-up water should go to the sanitary sewer, never to storm sewer or septic tank.

Washing and care instructions

- Do not wash painted surface for at least 10 days after painting to permit paint to "cure."
- Wash finger marks, smudges and smears with a mild detergent and sponge or soft cloth. (Abrasive compounds can cause erosion and are not recommended.)

Warranty exclusion

- The paint is provided as is, with no warranty of any kind, express or implied, statutory, by operation of law or otherwise, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, in any manner or form.

Caution

- Avoid prolonged contact with skin or breathing of spray mist.
- Close container after each use.
- Do not take internally.
- Paint may contain low amounts of mercury.
- Protect from freezing.

Keep out of reach of children

This latex paint collection and exchange program is provided free of charge to the public. For this reason, neither the person accepting the paint nor anyone claiming any rights from that person shall have the right to make any claim or file any lawsuit against the municipality which operates this program or against any individuals connected in any way with it either in contract or for the negligence of the municipality or any of its employees, or on any other basis for any damages related to the use, handling, or distribution of the paint.

The municipality has not performed any testing regarding the content of the paint and makes no warranties concerning:

- The physical and chemical characteristics of hazardous materials contained in the paint;
- The manner in which the recycled paint may be transported, stored, treated, discharged, disposed of, used, handled or otherwise managed; or
- Any actual or potential effects to human health and safety or the environment from any of the activities stated above.

For paint bulking programs

- Sort paint. Some suggested categories include interior white, interior light, interior dark, exterior white, exterior light and exterior dark. The more the paint is sorted, the better the control on the bulked paint's color.
- Pour and scrape paint into 5-gallon containers or 55-gallon drums.

- Mix the paint with a heavy-duty portable mixer.
- Store the paint in drums or repackage it into 1- or 5-gallon containers for distribution.
- Place a label on the container providing safe use instructions (Figure 2).

For paint remanufacturing programs

- The paint manufacturer with whom your community is working will have specific guidelines for sorting and handling the collected paints. If your community intends to use or market the remanufactured paint, request that the manufacturer develop a Material Safety Data Sheet for the paint. The new paint should be tested to see if it conforms to specifications and to ensure that hazardous constituents are below regulatory limits.

Fate of unusable latex paint

A promising new technology, pyrolysis, separates latex paint into its liquid and solid components. The solid material is used as a filler replacement for roof mastics, plastic filler and cement blocks. One hundred gallons of latex paint reduces to approximately 25 pounds of powder. This is a very good option for unusable and unwanted latex paint. Pyrolysis businesses usually accept bulked paint, regardless of its condition, in 55-gallon drums.

Some groups "fuel blend" unusable paint as fuel for a cement kiln manufacturing Portland cement. Due to its low energy content, latex paint is not a good candidate for this process.

Since it is not considered a hazardous waste, unusable latex paint may be solidified and sent to the landfill. However, this option may violate air quality standards in some areas. Contact your local air pollution official, solid waste official or landfill owner/operator for instructions. This should be a last option, since the goal of having a paint collection is to reduce the impact of these materials on the environment.

Fate of other materials

Regardless of how well you screen the paint at the collection, you may still receive some unwanted products, such as solvent-based paint, stains and paint strippers. You will need to return these materials or develop a management plan and budget for handling them. An option is to identify a local business or contractor that may be willing to donate the cost of disposing of these few materials as a hazardous waste. For more information on working with hazardous waste contractors, see Resources section.

Fate of empty paint cans

The waste from a paint collection can be reduced further if there is a steel recycler in your area willing to accept metal paint cans. The empty paint cans must meet the steel recycler's specifications for paint residues and may need to be dried before acceptance by a recycler. Arrange for the paint cans to be picked up after the collection.

If recycling is not an option, empty paint cans may go to the landfill. During the collection, store the empty cans, with lids off, in a roll-off container to be delivered to the landfill after the latex paint residue has dried. To protect the roll-off from the paint, line it with heavy-mil plastic.

Resources

State contacts

- Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, Mo. 65102, Hazardous Waste Program, 573-751-3176; Technical Assistance Program, 573-526-6627.

Empty metal can recycling

- Steel Recycling Institute: Headquarters, 680 Andersen Drive, Pittsburgh, Pa. 15220, 800-876-SCRI.
- Steel Recycling Institute: Central Northern Region (Illinois, Iowa, Michigan, Minnesota, Missouri, North Dakota, South Dakota, Wisconsin), 3800 N. Wilke Rd., Suite 379, Arlington Heights, Ill. 60004, 708-818-1755

Additional resources on paint recycling

- Donohue, Christine and Barbara Winters, 1990. *Paint Drop and Swap: Guidelines for Conducting Events.* Available from Vermont Agency of Natural Resources, 103 South Main St., Laundry Building, Waterbury, Vt. 05676-0407, 802-244-7831.
- *Paint Recycling Handbook,* 1994. Available from Oregon Department of Environmental Quality, 811 S.W. Sixth Ave., Portland, Ore. 97204, 503-229-5913.
- *Summary of the Paint Reuse and Recycling Consensus Meeting,* 1992. Available from The Waste Watch Center, 16 Haverhill St., Andover, Mass. 08180, 508-470-3044.

Additional resources on household hazardous waste collections

- Center for Hazardous Materials Research, 1991. *Household Hazardous Waste Collection Programs.* Available from the CHMR, Applied Research Center, University of Pittsburgh, 320 William Pitt Way, Pittsburgh, Pa. 15238, 412-826-5320.
- Solid and Hazardous Waste Program, 1989. *Household Hazardous Waste: Guidelines for Conducting Collection Events.* Available from the Washington State Department of Ecology, SHWP, MS PV-11, Olympia, Wash. 98504-8711, 206-438-7233.
- U.S. Environmental Protection Agency, 1993. *Household Hazardous Waste Management: A Manual for One-Day Community Collection Programs,* publication EPA 530-R-92-026 . Available from U.S. EPA, Solid Waste and Emergency Response (OS-305), 401 M Street S.W., Washington, D,C, 20460, or call the RCRA Superfund Hotline, 800-424-9346.

Related MU Extension publications

- WM6000, Safe Use, Storage and Disposal of Pesticides
  http://extension.missouri.edu/p/WM6000
- WM6001, Safe Use, Storage and Disposal of Paint
  http://extension.missouri.edu/p/WM6001
- WM6002, Selecting Household Safety Equipment
  http://extension.missouri.edu/p/WM6002
- WM6003, Household Hazardous Products
  http://extension.missouri.edu/p/WM6003
- WM6004, Managing Household Hazardous Waste
  http://extension.missouri.edu/p/WM6004
- WM6005, Store Hazardous Products Safely
  http://extension.missouri.edu/p/WM6005
- WM6006, Identifying Product Hazards: Material Safety Data Sheets
  http://extension.missouri.edu/p/WM6006
- WM6007, Setting Up a Used Antifreeze Collection Site
  http://extension.missouri.edu/p/WM6007

- WM6010, Setting Up a Used Oil Collection Site
  http://extension.missouri.edu/p/WM6010
- WM6011, Storm Drains and Water Quality
  http://extension.missouri.edu/p/WM6011

Order publications online at http://extension.missouri.edu/explore/shop/ or call toll-free 800-292-0969.

UNIVERSITY OF MISSOURI Extension

■ Issued in furtherance of the Cooperative Extension Work Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. Director, Cooperative Extension, University of Missouri, Columbia, MO 65211
■ an equal opportunity/ADA institution ■ 573-882-7216 ■ extension.missouri.edu