Doc. No. 801

Pollution Prevention and Compliance Opportunities Checklist

Pollution Prevention in Auto Body and Paint Shops, September, 2006

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Auto body and paint shops generate emissions and wastes that can be discharged to the air, land, and water. Shops are regulated by local environmental agencies because the products they use and their work practices may release pollutants to the environment. Using pollution prevention (P2) measures and best management practices in your shop can help you achieve compliance with regulatory requirements, reduce toxic and smog forming volatile organic compounds (VOC) emissions, reduce the time and money spent to manage hazardous wastes, and eliminate contaminated storm water discharges. Implementing P2 may help reduce operating expenses, and may reduce your permit fees and requirements from local enforcement agencies.

P2 can involve simple strategies that are easy to do, but significantly reduce amounts or toxicity of waste and emissions. Many P2 methods cost little or nothing to put into practice. For example:

- Improve inventory control
  - Reduce amount of products in storage,
  - Use first-in, first-out for paint and materials,
  - Inventory storage areas regularly,
- Keep containers closed and inspect for leaks,
- Use good housekeeping practices.

The economic benefit of implementing these measures can be significant, because of their low cost.

Other P2 measures require planning for future investments. For example, you may plan to buy cleaner technology paint spray guns or spray gun cleaners, vacuum systems, or energy efficient compressors to meet waste reduction and compliance goals.

Pollution Prevention

Complete the checklist to assess your shop and find areas where you can take advantage of P2 opportunities for these activities:

- **Mixing And Painting**
- **Paint Gun Cleaning**
- **Solvent Recycling**
- **Surface Preparation, Sanding, And Filling**
- **Vehicle Washing**
- **Body Work- Vehicle Battery, Fluid, And Refrigerant Removal**

Use the suggestions in the fact sheets to develop waste reduction goals, and to plan needed changes in shop practices to minimize waste generation and hazardous emissions.

Mixing And Painting

Mixing and painting operations generate most of the hazardous air emissions in the shop. They also present the greatest opportunities for reducing the release of VOCs. Most air districts have specific rules for paint application equipment, transfer efficiency, and maximum VOC contents of specific coatings.

Mixing and Painting	Yes	No	P2 and Compliance Opportunities
Do you have all permits required by your local air district?			Many air districts require an authority to construct a spray booth and a permit to operate it. They may also require permits for specific equipment such as paint gun washers. Check with your air district before purchasing equipment. Equipment vendors should be able to provide assistance, but make sure you understand permit requirements.
Are you required to paint in a paint booth? Do you paint in a downdraft spray booth?			Purchase a model with downdraft airflow to provide cleaner paint jobs and a safer worker zone. Models with heated, recirculating airflow decrease cycle times and recirculation conserves heated air.
Do you routinely check the manometer and change your spray booth filters when indicated?			Change exhaust filters when indicated to maintain compliance with permit conditions, for cleaner paint jobs, and a safer worker area. Use high-efficiency, high load filters that are easy to replace by section.
Do you purchase paint booth filters that do not contain toxic compounds?			Check product labels and the Material Safety Data Sheet (MSDS) and select paint booth filters that do not contain toxic compounds.
Have you tested your waste paint booth filters to see if they are hazardous waste?			Whether or not a waste paint booth filter is hazardous depends on the paint system you are using. If testing shows that your booth filters are nonhazardous, you can assume that future spent filters are also non-hazardous as long as you are using the same paint system. See the "**Hazardous Waste Fact Sheet**" for details.

Mixing and Painting	Yes	No	P2 and Compliance Opportunities
Do you use low VOC coatings and coatings that comply with current and future air district regulations?			Plan for strict air regulations in the future that will require the use of waterborne and low-VOC coatings.
Do you keep records as required by your local air district for coating and solvent usage?			Computerized systems and wall charts simplify recordkeeping and allow painters more production time. Computerized recordkeeping provides the opportunity to review and troubleshoot paint use to minimize paint waste and realize cost benefits.
Does your coating application method and equipment provide at least 65% Transfer Efficiency?			Most air districts require the use of High Volume Low Pressure (HVLP) or other proven application method with 65% or higher transfer efficiency. This technique reduces paint waste, produces better paint jobs, and provides cost savings.
Do you take steps to improve paint estimation?			Mix on a scale and use computerized mixing and compliant mix ratios. Review records to identify estimation errors, then troubleshoot to save paint and reduce waste.
Do you use methods to minimize waste from paint transfers?			Use calibrated disposable paint gun liners or Teflon mixing cups.
Do you encourage paint technicians to get advanced training?			Paint manufacturers require training for their warranty. The Inter-industry Conference on Auto Collision Repair (I-CAR) and community colleges offer hands-on training.
Do you manage your inventory to reduce the need to dispose of aged or off-spec materials?			Use next day or weekly ordering. Store paints in a temperature-controlled environment. Store paints in a temperature-controlled environment. Install a mixing bank to keep paints from separating.
Do you strive to improve color matching?			Mix in small amounts. Use test panels and spray out cards. Get input from other technicians. Keep a color library.

Note that air districts that do not have specific rules for automotive refinishing operations have other rules addressing volatile organic compounds in coatings and solvents. Check with your local air quality management district or air pollution control district for the requirements that apply to your shop. **Carefully review applicable air district rules for complete requirements.**

Paint Gun Cleaning

Cleaning paint guns can release smog forming VOCs to the atmosphere, expose workers to toxic compounds, and generate solvent waste. Most air districts regulate spray gun cleaning and limit the VOCs allowed in gun cleaning solutions. Review your air district's rules for gun cleaning processes and allowable VOC limits.

Paint Gun Cleaning	Yes	No	P2 and Compliance Opportunities
Are you using an enclosed automatic gun washing system?			Using an enclosed automatic gun washer will reduce VOC emissions and worker exposure to solvents as well as extend solvent life. Some air districts require enclosed gun cleaning.
Is your gun cleaning solution within the air district's VOC limits?			Some air districts restrict the amount of VOCs in gun cleaning solutions used for manual cleaning or enclosed automatic gun washing.
Is paint gun cleaning done outside the mixing room?			Place cleaning equipment outside the mixing room or make sure the mixing room ventilation system is adequate to vent emissions from paint mixing and gun cleaning.
Do technicians wear appropriate gloves and respirators when cleaning paint guns?			Exposure to cleaning solvents may cause adverse health effects.
Are you using two-stage cleaning or doing an initial solvent rinse before putting your gun into the automatic washer?			Pre-cleaning heavily coated equipment extends the effective life of your cleaning solvent, reduces waste generated, and saves on solvent purchasing and waste disposal costs.
Have you considered using a low-toxicity, low-vapor-pressure cleaning solution in a self-recycling gun washer?			These solutions clean effectively, create a safer work environment, and reduce hazardous waste. However, these cleaning solutions contain VOCs above the limit in some air districts, such as the South Coast Air Quality Management District (SCAQMD).

Solvent Recycling

Waste solvent from paint gun cleaning must be managed as hazardous waste. Off-site recycling can be costly and can add to a shops long-term liability. On-site solvent recycling may reduce solvent purchasing, disposal costs, and long-term risk, but may not be allowed in some air districts.

Solvent Recycling	Yes	No	P2 and Compliance Opportunities
Before buying an on-site recycler have you: Checked air district rules for VOC limitations on gun cleaning solvents? Gained approval from your Certified Unified Public Agency (CUPA)? Gained approval from the Fire Department?			Unless you recycle exempt solvents, such as acetone, the VOC content of the recycled solvent may be higher than allowed for gun cleaning in some air districts.
If you recycle solvents and paint waste on-site, are you complying with all generator requirements and recycling laws regarding on-site recycling of hazardous wastes?			Solvent recycler still bottoms are hazardous waste and must be managed as such. Recycling solvents on-site for reuse on-site does not require a hazardous waste treatment permit. However, the shop owner or operator must follow hazardous waste generator requirements.
Are you managing excess recycled solvent appropriately?			Recycled solvent may lose effectiveness over time. If solvent cannot be used for spray gun cleaning, it should be managed as hazardous waste.

Surface Preparation, Sanding, And Filling

This activity generates emissions from surface preparation and cleaning solutions. You may also generate hazardous wastes in the form of contaminated wipes, rags, and waste solvents. Sanding and filling operations can generate dusts containing hazardous concentrations of toxic metals from paints and polyester resins, and styrene and titanium dioxide from fillers. These dusts pose a respiratory hazard and can contaminate wash water discharged to sewers and storm drains.

Surface Preparation	Yes	No	P2 and Compliance Opportunities
Do you use methods to control dry sanding dust?			Use a vacuum sander or vacuum dust as soon as possible after sanding. Sand in designated, controlled area. Manage as hazardous waste or test before disposal to show non-hazardous. Do not track dust outside or wash to gutters, streets, or storm drains.
Do you collect and manage non-hazardous sanding dust separately from hazardous sanding waste?			Vacuum or carefully sweep and collect non-hazardous body filler dust before sanding primer coats to minimize mixing non-hazardous and non-hazardous sanding waste.
Are you collecting wet sanding waste in a clarifier?			Do not wash wet sanding waste directly to the sewer. Separate solids by settling and then discharge the water to the sewer. Manage sludge as hazardous waste unless tested.
Do your cleaning solvents meet the local air district's limits on volatile organic compounds (VOCs)?			Use aqueous cleaning solutions instead of solvent-based cleaners. Aqueous cleaners are non-flammable, less toxic and reduce air pollution.
Do you use an industrial laundry service for reusable shop rags?			Reduce the amount of contaminated shop rags disposed of as hazardous waste.
Do you use less toxic products?			Use fillers and surface preparation products that do not contain metals such as lead and zinc. Use aqueous or low-VOC cleaning products.

Vehicle Washing

Vehicle washing can generate wash waters contaminated with dust, dirt, oil, grease, and other leaking vehicle fluids. **Do not discharge wash water to gutters, streets or storm drains.** These discharges flow to creeks, rivers, lakes, or the ocean and endanger wildlife and water quality. Most local storm water agencies require vehicle washing to be done in a contained area and discharged to the sanitary sewer. The local industrial sewer agency may require treatment in a clarifier or oil water separator before discharging to the sanitary sewer.

Vehicle Washing	Yes	No	P2 and Compliance Opportunities
Do you know where your floor drains discharge? 			If unsure, check with your local agencies to determine where all drains discharge. No wash water or hazardous waste can go down a storm drain. No hazardous waste should enter the sanitary sewer.
Have you checked with your local sewer agency for restrictions or required permits?			Use a closed-loop water recycling system. Sewer agencies may require a permit to discharge to the sanitary sewer and may require pretreatment in a clarifier or oil-water separator. If you treat oily water, avoid using emulsifying detergents which inhibit the separation of oil and water.
Are vehicles washed in a bermed area plumbed or pumped to a sewer to prevent wash-water from entering storm drains?			Do not allow wash water to flow to streets, gutters, and storm drains. Only clean water should enter the storm drain. Post signs at storm drains warning against discharge of any contaminated waters or materials.
Are hazardous cleaning solvents and vehicle fluids stored away from sanitary sewers or storm drains?			Do not store cleaners or hazardous materials in the wash area. Use less toxic cleaners to wipe down vehicle panels after sanding and aqueous cleaners for car washing.

Body Work- Vehicle Battery, Fluid, And Refrigerant Removal

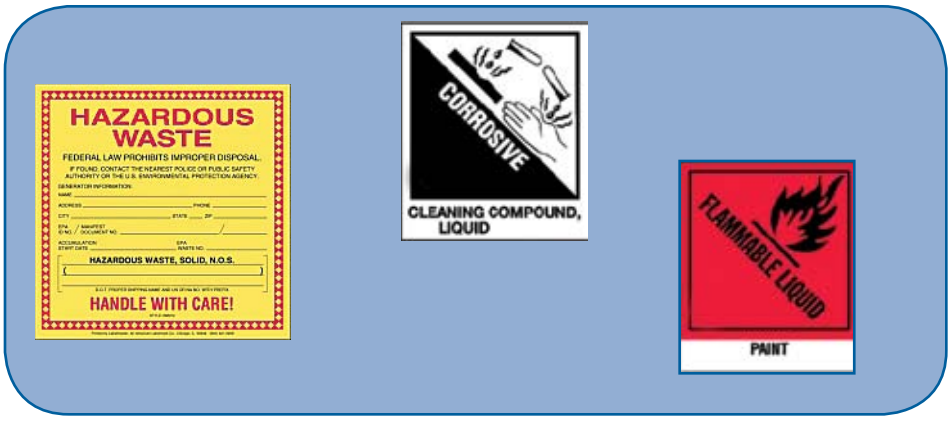
The oil, batteries, antifreeze, and other automobile fluids removed before repairing frames and bodies are generally hazardous wastes and must be managed accordingly. Air conditioning refrigerants must be captured and reused or sent for recycling.

Body Work	Yes	No	P2 and Compliance Opportunities
Are you draining vehicle fluids and removing batteries in a designated area away from storm and sanitary drains?			Use funnels to prevent spills when removing and transferring vehicle fluids. Check parked vehicles for leaks and use drip pans. Clean up small spills right away to prevent tracking or spreading to other areas.
Do you use a certified technician to remove air conditioning refrigerants?			Federal law requires that air conditioning refrigerants be removed by a technician certified by an U.S. EPA-approved program, such as Automotive Service Excellence (ASE).

Facility-wide Hazardous Materials And Waste Management

Typical auto body shop hazardous wastes are waste paints and solvents, sanding dust, vehicle fluids, contaminated rags and absorbents, and filters.

Hazardous Waste Management	Yes	No	P2 and Compliance Opportunities
Do you have a hazardous materials/waste permit, as required by your local agency?			Minimize hazardous waste generation and hazardous materials inventory to reduce permit fees and requirements in most areas.
Do you have a hazardous waste identification number (EPA ID number) from the Department of Toxic Substances Control or U. S. EPA?			Hazardous waste generators must have an EPA ID number from U. S. EPA or DTSC depending on the type and amount of waste generated. Call your local CUPA or DTSC at (800) 618-6942.



Hazardous Waste Management	Yes	No	P2 and Compliance Opportunities
Have you labeled hazardous waste containers properly?			Labels must be readable and include: • HAZARDOUS WASTE • Composition of the waste • Physical state of the waste • Accumulation start date • Hazardous properties of the waste • Name and address of waste generator Cover labels with clear plastic wrap to keep the label clean and change plastic when needed.
Are all containers closed when not in use?			You are required to keep containers closed when not in use to reduce VOC emissions and spills. Cost savings will result from reduced product loss and waste disposal.
Are your hazardous waste containers in good condition (not leaking or deteriorating) and are they compatible with the hazardous waste stored?			Store indoors or in a covered area to protect from weather, damage, and rainwater run-off.
Do all storage areas have secondary containment?			Secondary containment such as berms around storage areas and spill containment cabinets and pallets prevent spill run-off from contaminating soil and water.
Are you inspecting hazardous materials/wastes storage areas at least weekly for leaks or deteriorating containers?			Use and post a checklist to document each inspection and follow up. If leaks are found during inspection, transfer or overpack container.
Are you storing hazardous waste according to waste accumulation time limits?			Accumulation time limits depend on your generator status. See the Hazardous Waste fact sheet for details on storage times.

Hazardous Waste Management	Yes	No	P2 and Compliance Opportunities
Do you send hazardous waste offsite (away from your facility)? 			Use a hazardous waste manifest and a hazardous waste hauler registered with DTSC. Check transporters current registration at: http://www.dtsc.ca.gov/database/Transporters/Trans000.cfm or call (916) 255-4368. Ship hazardous waste to a facility that is authorized by DTSC to receive it. Check http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP_Reports_Commerical_Facilities2.pdf for a list of permitted hazardous waste recycling, treatment, transfer, storage, disposal facilities; A list of used oil facilities can be found at: http://www.dtsc.ca.gov/HazardousWaste/upload/HWM_List_UsedOilFacilities.pdf
Do you have a hazardous materials business plan and emergency contingency plan?			Check with your local agency for specific requirements. Make sure employees are trained to carry out the contingency plan.
Is your emergency equipment, as required by your emergency contingency plan, in place?			Maintain emergency equipment and spill kits and train employees on what to do during an emergency.
Are your employees trained in handling hazardous materials and wastes?			Conduct initial training for new employees and annual review of training for all employees. Have a training plan and keep training records.

Drum Label

Local Agency Assistance

Auto body and paint shops are regulated by several different agencies. Compliance assistance is provided by your local government agencies.

Topic	Agency Contact
General environmental laws and regulations	Local county government environmental contacts http://www.dtsc.ca.gov/InformationResources/local_contacts.cfm
Water quality and sanitary sewer or industrial waste water discharges from sources like a clarifier or floor drains	City, county, or regional sanitation districts or department; water districts or agencies; wastewater agencies; and municipal utility districts http://www.casaweb.org/
Storm water regulations like car washing prohibitions	City or county public works department or public utilities agency; local health departments http://www.casqa.org/links/#california
Air quality, spray equipment, paint application, VOC content in paint systems, cleaning solvents, and other shop products, permitting and recordkeeping, gun cleaning operations and cleaning solvents	Local Air Quality Management District or Air Pollution Control District http://www.arb.ca.gov/capcoa/roster.htm
Hazardous materials and hazardous waste management, materials inventories, waste storage, onsite recycling, business plans and emergency contingency plans	Local Certified Unified Public Agency or Program Agency http://www.calepa.ca.gov/CUPA/CUPAMail.htm
Worker health and safety	The Department of Industrial Relations, Division of Occupational Safety & Health (Cal/OSHA) provides a guide to developing a workplace Injury and Illness Prevention (IIP) Program. http://www.dir.ca.gov/dosh/dosh_publications/iipp.html Cal/OSHA provides assistance through their consultation service. http://www.dir.ca.gov/dosh/consultation.html

For additional information contact:

DTSC

Office of Pollution Prevention and Technology Development
P.O. Box 806
Sacramento, CA 95812-0806
(916) 322-3670
(800) 700-5854
http://www.dtsc.ca.gov/PollutionPrevention/index.cfm

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