

Water-Based (aka waterborne) paints are currently being used in New England and all over the United States. Switching from solvent-based to waterborne paints can make your shop a healthier place. By avoiding solvents, you will have less toxics and flammables in your shop. Many shops in Massachusetts have already made this switch with improved paint performance.

The Benefits

Improved shop air quality

Waterborne paints emit less volatile organic compounds (VOCs), which not only result in a healthier workplace, but can also increase your compliance with state and federal regulations for air emissions. Better air quality increases worker productivity and retention and reduces sick days and incidence of chronic disease. Many shop owners say they will never work again with solvent-based paints because of the better work environment and improved paint job quality.

Improve color matching

Shop owners report improved color matching properties with waterborne paints. This is most likely due to car manufacturers' use of waterborne paints. Improved color matching means less likelihood of having to redo paint jobs.

Reduce insurance costs and flammability risk

Water-based paints are less flammable than solvent-based paints, which could reduce insurance costs. Ask your insurance company or talk to an insurance broker about reduced premiums or other benefits for reducing risks.

Increase hazardous waste and safety compliance

Waterborne paints contain lower levels of toxic chemicals which reduce the need for OSHA compliance (observing exposure limits, training and hazard communication), reduced generation of hazardous waste, and reduced risks to your community and environment.

Improve painting efficiency

Using water-based paints results in less overspray, higher transfer efficiency, and allows the use of a lower pressure spray. Less overspray saves you money by making sure more paint gets on the car than in the air. This also increases the life of spray booth air filters while reducing worker exposure.

Easier and less toxic paint gun washing

Using waterborne paints makes gun cleaning easier, giving you the opportunity to use less toxic and less flammable gun washing solutions. Changing your gun washer to a safer alternative reduces worker exposure, and hazardous waste costs.



A freshly painted car

Photo courtesy of Flickr, user
blastpaintstore, license: [Creative Commons, Attribution 4.0 International](#)

Take the Next Step

Talk to suppliers

Ask your supplier about their available waterborne paint lines. Many paint manufacturers currently offer waterborne paints, including [PPG](#), [BASF](#), [Axalta](#) and [Sherwin Williams](#) among others. Be sure to ask what modifications your spray booth may need to make the switch, including guns and cleaning systems. Ask suppliers for a demonstration before making any decisions – some suppliers may even offer free training to your painters.

Get a reference

Talk to another shop owner that has successfully made this switch to learn about the associated challenges and how they were overcome. If you do not know any shops that have switched to waterborne basecoats, contact OTA (617 626 1060) and ask for a reference.

Contact the Office of Technical Assistance (OTA):

OTA's [Tiffany Skogstrom](#) (617-626-1086) and [Marina Gayl](#) (617-626-1077) have expertise in auto shop environmental safety. They can offer free and confidential assistance and advice.

Things to Consider

Explore whether you can further reduce the toxicity of your paint line

Some basecoat pigments contain chromium, lead, cadmium, nickel, or manganese which are regulated under the EPA's [6H National Emission Standards for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources](#).

Paint manufacturers can provide you with a list of paint colors that contain these ingredients – the information can often be found at the manufacturer's website or inquiring by email. If you avoid paints that contain these ingredients, you will further reduce worker exposure to toxic chemicals and you can file for an exemption from the regulation. See our fact sheet on "Paint Room Regulations" for more information on this rule or contact OTA staff at 617-626-1060 for further help.

Investigate possible modifications for your spray booth

In order to ensure drying times that are comparable to solvent-borne basecoats, spray booth modifications such as retrofit blowers or heaters designed for waterborne paints may have to be installed. Many shops have been able to achieve comparable drying times with waterborne paints after making spray booth modifications.

Consider purchasing new spray guns designed for waterborne basecoats

Water and solvent-based paints have different viscosities. Different guns that work best for each type of product. Check with your paint manufacturer to ensure that you have the appropriate paint guns and lines for water-based paint. Most new guns are made to use water-based paints and have stainless internal parts to prevent corrosion. Some shops have had success with guns that use heated air, which helps the paint dry more quickly. Paint technicians may need additional training which is sometimes offered for free by the paint manufacturer, for the best results.

Find Additional Information

- [EPA's Using Waterborne Basecoats in Collision Repair Shops: A Case Study](#) presents the benefits and challenges one owner experienced when switching to water-based paints. Benefits included increased productivity from using fewer coats, increased painter retention from a cleaner

environment, reduced insurance costs due to having fewer flammable paints on site, and superior color matching to solvent-based paints.

- YouTube [testimonials](#) to shop owners switching to PPG's waterborne paints line.
- YouTube [application tips](#) for PPG's waterborne paints line.

Success Stories

Cape Auto Body (Plymouth, MA) switched over to a PPG waterborne line of paints in 2008 for its better color matching and to use a more environmentally-friendly product that better protects the health of their workers. Cape Auto Body retrofitted its spray booth with enhanced air flow and driers to overcome slower drying times with the waterborne paints. Perhaps the most critical element to their success was purchasing a [Walcom Thermodry system](#) for approximately \$7,000, which heats the air traveling through the spray guns along with an air compressor and dryer (approximately \$15,000) to keep the system dry. This system has made drying times similar to or better than their previous solvent-based paint line. After six years, the shop is very happy with their decision to switch over and hasn't looked back.

"We had to tweak our spray booth modifications a bit after the switch over to waterborne paints to sustain our productivity, but we are very happy with the superior color matching. It's better for the workers and customers, and we wouldn't go back."

Kevin Gallerani, Owner, Cape Auto Body

Best Chevy Collision Shop (Hingham, MA) switched over to a [PPG ENVIROBASE®](#) waterborne line of paints in 2009. The shop retrofitted their spray booth with blowers for about \$20,000 and achieved similar productivity levels to solvent-borne paints. More recently they moved to a new location with new spray booths designed for waterborne paints, and their drying times are faster than before. They believe the color matching is superior to solvent-borne product lines, and their painters appreciate the reduced fumes.

"After learning to work with waterborne paints, I would never work at another shop that used solvent-based paints. The fumes are noticeably less, and it's a lot easier to apply."

Painter, Best Chevy Collision

912 Auto Center (Dorchester, MA) began using DuPont™ Cromax® Pro waterborne paints in 2008 (these coatings are now owned by Axalta). They also purchased a Herkules™ gun washing machine and use [Acrastrip®](#) water-based gun cleaning solution. The shop has been very happy with their switch to waterborne paints and water-based cleaning products. An analysis of the gun cleaning costs indicates that the shop saves more than \$3,000 per year in reduced costs of purchasing and paying for hazardous waste while disposing of thinner and solvent-based products they had formerly needed to clean their guns. [See the full case study.](#)

"I am happy with the water-based technology and am eager to show other businesses that it is possible and profitable to move toward more environmentally-friendly chemicals and technologies."

Larry Dossantos, Owner, 912 Auto Center

**For free and confidential technical assistance or questions, contact:
MA Office of Technical Assistance 100 Cambridge Street, Suite 900, Boston MA 02114
Phone: 617.626.1060 Fax: 617.626.1095 E-mail: maota@mass.gov
www.mass.gov/eea/ota/masscar**