



# ShopTalk

VOLUME 5, NO. 7

NOVEMBER/DECEMBER, 1992

## TECHTOPICS

# Latex Wins New Advocates in Radiator Paint Evaluation

*Modine is pleased to welcome back Larry LePrevost, national sales manager for the Johnson Manufacturing Company, for another guest column. Questions or comments on the subject matter that follows can be sent to Larry at the Johnson*



**Larry LePrevost**

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To say that paint is a complex subject is an understatement. Government regulations have impacted the paint industry just as dramatically as anything the radiator industry has seen. Consider that not too many years ago, most paints contained lead (not the radiator paints). While lead has been legislated out of household paints, recent studies show that old house paint is still the major cause of lead poisoning among children today!

It's clear that government will continue to turn the regulatory screws on all products that contain lead until the problem is abated or there is no longer a need for lead, whichever

comes first. As you can see, our industry is not the only one receiving government's attention, but we are one who has yet to clean up our act.

Recently, I visited a Midwestern manufacturer faced with the need to change its solder alloy, because products that were formerly painted further down the production line were now being powder-coated. This process requires oven curing at 400 degrees F., which was causing the solder to re-melt and sag out of the seams. Among other changes, we suggested a higher temperature solder that melts at 500 degrees F. They made the switch and are now benefiting from lower solder costs, while providing a superior (powder-coated) finish for their products. This example shows how technological advancements are also affecting the paint industry, much the same way that aluminum radiators have affected the radiator industry.

Another parallel is that the paint industry has also experienced the pressures of a mature market. When markets mature in any industry, end users gravitate to discount centers such as Home Boy or other DIY centers. When mature market syndrome sets in, we see business shift from professionals to more inexperienced sources. In that kind of marketplace, government can find it much more difficult to regulate hazardous materials, volatile organic compounds (VOCs) and other environmental problems. We owe it to future generations to take the initiative,

to ease into compliance to help reduce the need for more strenuous and far-reaching government regulation. Making some right decisions now may make it a whole lot easier down the road.

So, how does this relate to radiator paint? Well, in the foreseeable future, you may be faced with the decision of whether to install a full-blown paint booth, complete with filters or a water scrubber to reduce the VOCs released into the atmosphere. Or, you can choose to use latex (water reducible) paint. According to our estimates, approximately one-third of the shops in the nation have made the move to latex with no adverse effects.

Some of us, of course, are slower to change than others. So, let's look at a few facts that might guide our thinking. First, let's examine the requirements that (according to our customers) help make a good radiator paint: (1) It must dry fast. (2) It must be black. (3) It must be glossy. (4) It must hide well. (5) It must be inexpensive. (6) It must mix well, but not settle. (7) It must spray well and not clog the nozzle. (8) It should stay on the radiator, yet strip off well. (9) It should be safe for the user. (10) It should be safe to ship and store, and also be safe for the environment. Did I forget anything?

For many years, Johnson Manufacturing and other suppliers have provided solvent-thinned, asphaltic-based radiator paints to the industry because they are very low cost and they do the job. Then, about ten years  
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# Latex Paint Shows Gain in Popularity

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ago, we and others began to supply water-reducible paints which are safer to use. In fact, we call ours "Safety Paint." Why is it safe, and what are some of the pros and cons? Let's compare both types of paint, using the criteria cited in the previous paragraph:

## It must dry fast.

**Asphaltic Paint**—Solvents evaporate more quickly than water. Therefore, solvent-thinned paints become "tack-free" and also "dry hard" faster than latex paints. Stoddard's Solvent, VM&P Naphtha or other commercial paint thinners are recommended over gasoline. Never thin paints with gas that contains lead.

**Latex** — Today's improved latex paints dry almost as fast as solvent-thinned paints due to a process called "coalescence". However, during periods of high humidity, longer drying times may be required.

## It must be black.

**Asphaltic**—These paints are definitely black. They can be thinned with solvent several times and still provide a deep black color. Thinning the paint too far, however, may give it a brown cast and may require multiple passes to hide the brass adequately.

**Latex**—Latex paints may appear somewhat dull or gray when wet, due to water in the emulsion. When the water evaporates, the binders and pigments fuse together (coalesce) to form a continuous black film.

## It must be glossy.

**Asphaltic**—Rapid film formation and small pigments result in a smooth, glossy finish that is also very reflective.

**Latex**—Even though their emulsions may contain binders, some latex paints also offer a glossy appearance.

## It must hide well.

**Asphaltic**—The hiding power of any paint is directly related to the percent of solids (pigments) in it. Solvent-thinned

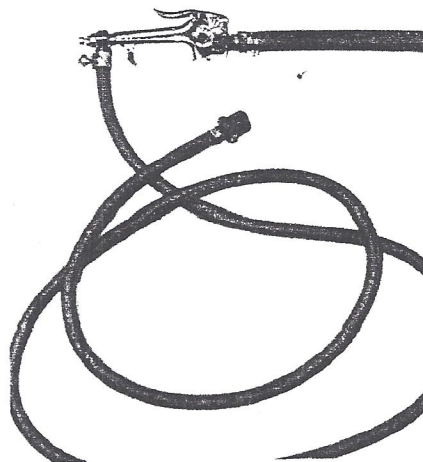
paints with a high solids content may be thinned (cut) more times than paints with low solids. High solids paints are also more expensive. In general, solvent-thinned paints offer acceptable hiding power, even if over-thinned, because multiple passes do the trick.

**Latex**—The solids found in latex paints offer excellent hiding power. Generally speaking, latex paints can't be thinned as many times as solvent paints. And, if thinned too far, they may dry blotchy. Latex paints that are properly thinned require fewer passes and less paint to hide the same surface area. Also, not as much over-spray is created.

## It must be inexpensive.

**Asphaltic**—Obviously, some paints are more expensive than necessary to coat radiators. That's why no *ShopTalk* reader is using an automotive finish type of paint that might run as high as \$85/gallon. Remember too, the price you pay for radiator paint also covers the pail, lid, label, and perhaps even the freight to your distributor, then to you. Asphalt is a fairly inexpensive commodity. Still, the cost to produce paint is tied to its percent of solids. Solids have nothing to do with how thick a paint is, which we'll discuss later.

**Latex** — The raw materials used in



*This siphon sprayer from Johnson Manufacturing is easy to use and maintain. A gravity fed reservoir should work well with the sprayer, providing that your outlet is several inches off the bottom of the reservoir.*

latex paints are much more expensive than asphalt. Thus, latex paints cost more to produce. Even though your thinner (water) doesn't cost anything, the cost of latex paints, per gallon when mixed, is higher than solvent thinned paints. The trade-off comes with greater hiding power, less over-spray and a much lower investment in equipment. What will it cost to install a spray booth, which you will almost certainly need if you continue using solvent-thinned paints in the future?

## It must mix well, and not settle.

**Asphaltic**—Solids tend to drop out of all paints during transportation and storage. That's why your local paint store has a shaker on his counter. The "drop-out rate" is increased when you add thinner. Making paint thicker by adding fillers is not the answer. They take up room in the pail, but don't contribute anything to the results. So why don't we engineer paints which never settle out? The answer isn't price, because even extremely expensive paints must be stirred before each use. Paint manufacturers will just have to keep working for a combination that works best for the radiator industry.

**Latex** — Latex paints are susceptible to settling also. The objective that shops must work toward is developing the system of stirring and mixing that suits their operation. Mixing paint too far ahead of actual use is not a good idea. One peculiarity with some latex paints is the odor that develops almost overnight after they are thinned with water. Our company's paint contains a biocide that prevents the offending bacteria from growing in these organic emulsions.

## It must spray well and not clog the nozzle.

**Asphaltic**—Almost everybody has developed his own way of spraying solvent-thinned radiator paints. I know one gentleman in Florida who uses discarded AGF torches to spray radiator paint, right through the nozzle. It works for him, but I'm not suggesting that you try it.

**Latex**—Latex paints are easier to

mix, maintain and spray than solvent paints. The trick, at least with Johnson's Safety Paint, is to use an inexpensive latex paint sprayer with about 60 to 80 PSI of dry shop air pressure. Without meaning to employ overwhelming bias, I would strongly recommend Johnson's Latex Paint Sprayer (Part No. 438-50). When you are not using it, place the sprayer (hoses still attached) in a can of water, to prevent clogging. This works well and couldn't be simpler.

**It should stay on the radiator, yet strip off well.**

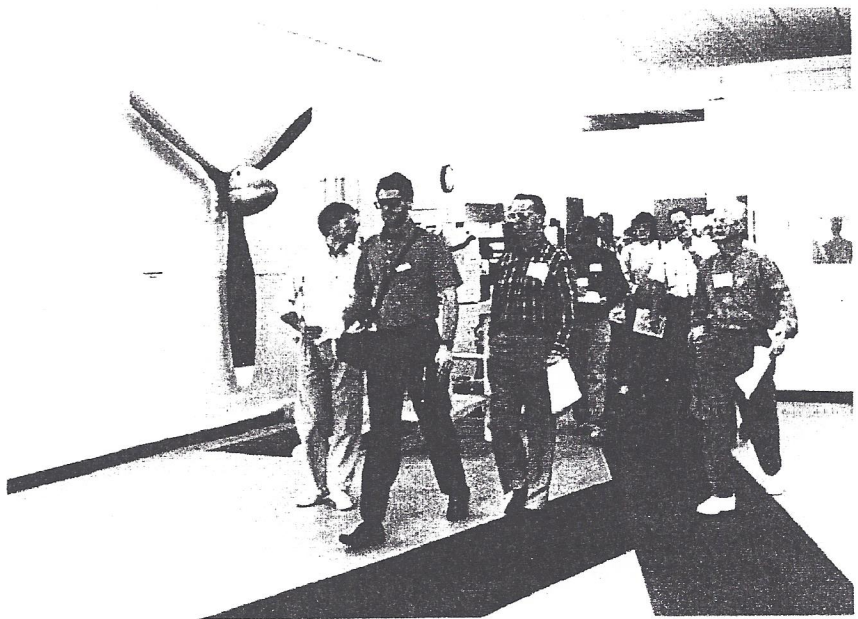
Asphaltic—It's obvious that paints should adhere well, but not all industries require that they strip off easily too. When is the last time you went into a paint store and complained that it was taking too long to scrape the Lucite off your house? Yet, we have shops doing fleet work who insist that good radiator paint must strip off easily, so we oblige them.

Latex—Latex paints do not emulsify like solvent-based paints, but they're getting close. During some recent tests, several latex formulations showed excellent adhesion to brass and, surprisingly, they stripped off extremely well.

**It should be safe for the operator to use.**

Asphaltic—Spraying radiator paint which 'has been thinned with gasoline (even the unleaded type) without equipping yourself and your co-workers with personal protection can be risky. Who knows what gasoline additives are floating around to be breathed in? A spray booth confines the fumes to one area of your shop and filters, scrubs or vents them out of your immediate environment. You must also be aware of the dangers of explosion from spraying a highly volatile mixture in an enclosed area, near any sort of spark or flame. Please be careful, guys.

Latex—Latex paints are much safer to use. There is far less danger from breathing harmful fumes because fewer VOCs or solvents are present. There's hardly any odor in the shop because there is far less over-spray. There is



*Attendees of the recent NARSA North Central regional meeting, October 23 - 25 in Milwaukee, had the opportunity to take a tour of Modine's headquarters in nearby Racine, Wisconsin. Here, a group of visitors tours Modine's vehicular wind tunnel, which is used to test the cooling systems of both large and small vehicles.*

practically no danger of explosion from vapors or fumes.

**It must be safe for the environment.**

Asphaltic—Think of our environment as a very large airplane which carries all of humanity on an endless flight. Sooner or later, even if you are a smoker, you'll wish this was a non-smoking flight. We should all do what we can to reduce air pollution today.

Latex—Latex paints are much safer for the environment for many of the reasons which have already been discussed. Also, it is less likely that you will ever be required to install a spray booth for latex paints because very few harmful volatile organic compounds are released into the atmosphere.

Johnson Manufacturing Company believes that radiator shops of the future will all use latex paints or other equally safe paints which have yet to be developed. For this reason, we are continuing to work with our suppliers to improve and refine this product line.

## Modine Adds New Tanks, Accessories

Modine has added four new models to its line of plastic tanks. Two of the tanks cover popular late-model Ford Crown Victoria and Country Squire, Lincoln Town Car, and Mercury Grand Marquis applications. The two other new models are designed for manual transmission applications and fit a wide range of popular GM vehicles that do not require transmission oil coolers.

Rounding out the new parts are a pair of header gaskets and a draincock for Modine's popular 1R2065 radiator, and an oil cooler retaining ring that fits many Ford applications. More information on the new tanks and other parts is available from you Modine product source.

Modine now offers 51 tanks, 11 gaskets, and three popular plastic draincocks in its tanks and accessories line.