FISHERMEN'S VOICE

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# Painting Buoys With Low VOC Paint

by Ann Backus, MS

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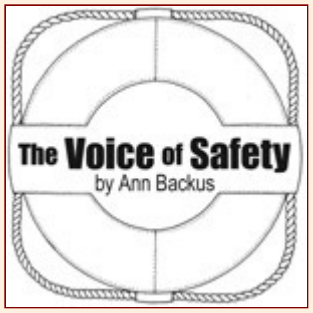


Are you painting buoys or other marine surfaces this winter? For personal and environmental health reasons, the recommendation is that you use paints and UV protectants with low or "zero" content of volatile organic compounds (VOCs) The label on the paint can will list VOCs in g/l or perhaps as a percentage of weight. In 2004 when I initially researched paint VOCs, Day-Glo Fluorescent had 383 g/l and Clear Flex UV, 337 g/l, for example. These are both oil-based paints requiring solvent clean-up. Oil-based paints can contain 200-800 grams per liter VOCs while water-based paints are in the vicinity of 0-200 grams per liter. The lower the number of grams/liter, the lower the health risk from exposure to volatile organic compounds.

VOC News found at www.icipaintsstores.com/web/docs/VOCNewsletter_2_en.pdf provides a table of the 2006 regulations regarding VOCs in paints that includes the US EPA allowances and those of the Ozone Transport Commission (consisting of states from Maine to Virginia). At present EPA permits 380 g/l VOCs in non-flat and non-flat high gloss paint, whereas, the OTC permits 150 and 250 g/l for those types of paints respectively. There may be more distinctions to be made regarding types of paints, but these numbers will suffice for this discussion.

I have been concerned about lobstermen's exposures to Volatile Organic Compounds (VOCs) – essentially solvents – since a team from the Harvard School of Public Health studied the indoor air quality in five lobstermen's workshops in Vinalhaven. I have recommended that lobstermen use a very low VOC paint – latex probably with 150g/l VOC or less– for buoy painting. Many lobstermen have told be they have converted to low VOC latex paint – that's the good news.

However, I know that some lobstermen still use high VOC paint and also apply a clear UV protectant on top of the color paint to reduce fading due to sun exposure. These UV protectant products are generally very high in VOCs – that's the bad news. High VOCs products are generally oil-based, require a solvent for clean-up (as opposed to water), but of course they dry quickly, a characteristic lobstermen like.

**VOCs In Paints Used For Buoys**


Let's take a look at a UV protectant familiar to lobstermen: Day-Glo Filteray-D.

The Material Safety Data Sheets which manufacturers are required to provide to retailers are quite easy to find on public access websites these days (and the retailer should supply one on request). I used the website www.msdssearch.com to look up the MSDS for popular paint, Day-Glo- Filteray D with the product designation, 215-08A — 8010-00N036159.

The MSDS shows that this paint contains less than 5% by weight each of xylene and toluene; that is a total of around 10% by weight of VOCS. The MSDS tells us that this equals 2.62 pounds per gallon (LB/GL) and 457 g/l VOCs. Even if this paint is classified as "varnish" the 457 g/l exceeds the EPA regulations. (EPA regulation for varnish is 450 g/l; OTC regulation is 350 g/l.) That's a lot of exposure!

VOCs enter the body through breathing and skin contact. The personal health hazards are related to poor ventilation and include irritation of the eyes and respiratory tract as well as dizziness, fatigue, weakness,

confusion, headache and others. According to this MSDS, the Navy lists toluene in this paint as a “chemical reproductive hazard.”

In terms of protection, the manufacturer recommends a NIOSH approved respirator, good ventilation and additional exhaust ventilation if excessive vapors are produced, impervious gloves, goggles, and the washing of clothes before reuse.

Lobstermen paint a lot of buoys at a time and often hang them in their workshops to dry while continuing to paint the next batch. Their exposure is from both the painting process and from the off-gassing of VOCs as the buoys dry. Dr. Thomas Smith and Dr. Robert Herrick at the Harvard School of Public Health recommend wearing an organic vapor respirator when using high VOC paints such as this Day-Glo product, and drying buoys outside under a tarp or tent.

The Dual Cartridge Organic Respirator (pictured above) manufactured by 3M Marine is available. There are many other manufacturers of simple personal protection equipment. The cost is under $25 including an initial set of cartridges. Replacement cartridges must be purchased to have on-hand when the “break-through” occurs, and the smell of paint is noticeable. One caution is that the respirator fit over a beard is not tight.

My recommendations for paint is Krylon “Industrial Coatings’ Iron Guard”

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