Quality testing products from Hybrivet Systems, Inc. P.O. Box 1210 Framingham, MA
Phone: (508)651-7881 Fax: (508)651-8837 www.LeadCheck.Com

LEAD IN VINYL PRODUCTS

BACKGROUND

The manufacture of vinyl (an organic chemical polymer) requires the addition of a variety of additives. They all undergo degradation and decomposition when exposed to heat and mechanical stress during formulation, molding or extrusion. All products made from polymers are degraded by light, heat, stress, and air pollution encountered in everyday use. For this reason, one or more toxic chemical stabilizers, such as lead, cadmium and phthalate are required for each type of plastic. Metal salts (like lead carbonate, etc.) don't mix well into organic polymers and so tend to clump and migrate when subject to weathering direct sunlight and stress. For this reason, the stabilizer is expected to accumulate unevenly on the surface in normal use.

This has been found to be true for vinyl miniblinds. The Consumer Product Safety Commission (CPSC) has warned consumers about vinyl miniblinds. Most are made with a lead plastizer. The CPSC found that over time the plastic deteriorates from exposure to sunlight and heat to form dust on the surface of the blind. The amount of lead dust that formed from the deterioration varied from blind to blind. One of the items tested had hundreds of milligrams of lead per square foot. The same degradation might be associated with vinyl siding.

In the U.S. vinyl construction materials are responsible for almost 75% of all vinyl use. It is used as conduit, electrical wire insulation, flues, gutters, siding, flooring, fencing roofing, piping, windows, weather-strip, flashing, moldings, carpet fibers and wallpaper backing as well as for many consumer products including children's' lunch boxes. The vinyl that contains lead is widely used

HAZARD POTENTIAL

Lead stabilizers are released when they are formulated, used and disposed. "Potential lead releases from .. PVC must be viewed as a major potential health hazard"[1]. Unfortunately the safer alternatives to lead plasticizers are often more expensive and are not widely used in manufacture. Most of the PVC is not made in the U.S. and is not as well regulated as it might be in the U.S. There are many articles available that discuss the need to remove lead as a plasticizer from PVC.

TESTING

LeadCheck® Swabs are a very sensitive screening test that will detect the presence of lead in vinyl. To test for lead in a vinyl product

1. Abrade or scratch through all of the layers in the item being tested. Lead is often found below the surface.
2. Activate a LeadCheck® Swab, by crushing at the two places indicated on the barrel of the swab.
3. Look for yellow liquid on the tip.
4. While gently squeezing the barrel of the Swab, vigorously rub the abraded test surface.

INTERPRETATION

Any pink color that appears on the test surface or the tip of the swab indicates the presence of lead. The color may be uneven due to the "clumping" of the inorganic salt. The color may become darker with time due to the "migration" of the inorganic "clumps" to the surface. Some lead pigments are very insoluble. Allow longer development time before assuming a result is negative. Orange is not a positive for lead.

1. Thornton, Joe, Ph.D. article written for the Healthy Building Network, "Environmental Impacts of Polyvinyl Chloride (PVC) Building Materials".

This note provides a suggested method to allow testing for this specific application. Additional information and help are available by calling 800-262-5323 or 508-651-7881

Copyright 2006 Hybrivet Systems, Inc.
LeadCheck and the LeadCheck Logo are registered trademarks of Hybrivet Systems, Inc.