

# Greenlist Bulletin

From the Toxics Use Reduction Institute  
at the University of Massachusetts Lowell

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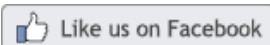
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## Old Fashioned Milk Paint is the First USDA Certified Biobased Paint

[Source: \*Paint and Coatings Industry\*, August 5, 2012](#)

GROTON, MA. -- The Old Fashioned Milk Paint Co. Inc. has won USDA Biobased Certification for its Old Fashioned Milk Paint. The USDA Certified Biobased Product label verifies that the paint's renewable bio-based ingredients meet or exceed USDA standards. Bio-based products are materials composed of agricultural, forestry or marine materials. Old Fashioned Milk Paint and the company's newest formula, SafePaint for walls, are made from natural materials including milk protein (casein), crushed limestone, clay and earth pigments.

[Read more on the company's website...](#)

## Study: Flame Retardant 'Firemaster 550' Is an Endocrine Disruptor

[Source: \*North Carolina State University\*, October 24, 2012](#)

Author: Matt Shipman

The flame-retardant mixture known as "Firemaster 550" is an endocrine disruptor that causes extreme weight gain, early onset of puberty and cardiovascular health effects in lab animals, according to a new study spearheaded by researchers from North Carolina State University and Duke University.

Firemaster 550 is made up of four principal component chemicals and is used in polyurethane foam in a wide variety of products, ranging from mattresses to infant nursing pillows. The flame-retardant mixture was developed by Chemtura Corp., and was first identified by the research community in 2008. It was developed to replace a class of fire retardants being phased out of use because of concerns regarding their safety. This new study represents the first public data on whether Firemaster 550 has potential health effects.

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## New coating for aluminum developed to replace cancer-causing product

[Source: University of Nevada, Reno, October 18, 2012](#)

Author: Mike Wolterbeek

A research team at the University of Nevada, Reno has developed a new environmentally-friendly coating for aluminum to replace the carcinogenic chromate coatings used in aerospace applications. The chromate conversion coatings have been used for more than 50 years to protect aluminum from corrosion. . . .

"It was well received at the conference," Dev Chidambaram, lead scientist and assistant professor of materials science and engineering at the University of Nevada, said. "There is no question that this will be able to replace the chromate-based coating. Even though the coating formulation is yet to be optimized, the coating has shown exceptional performance."

[Read more...](#)

*TURI's Note:* Here is some additional information on molybdate conversion coatings:

From NASA:

["Evaluation of Molybdate Conversion Coatings for Aluminum Alloys by Electrochemical Impedance Spectroscopy."](#)

["Molybdate Coatings for Protecting Aluminum Against Corrosion."](#)

From DOD's SERDP Program:

["Critical Factors for the Transition from Chromate to Chromate-Free Corrosion Protection."](#)

### Lubricants from vegetable oil

[Source: Fraunhofer-Gesellschaft, October 16, 2012](#)

Oil-independence is the dream of many countries that lack raw materials. Nevertheless, black gold still retains its dominant role as a power source, and also serves as a basic material for the chemical industry. In order to change this, researchers started the "Integrated BioProduction" project. At the Fraunhofer Center for Chemical-Biotechnological Processes CBP in Leuna (Germany), the pilot plant-scale production of epoxides, made from domestic vegetable oils, begins in October. The intermediate chemical products support the production of lubricants, surfactants and emulsifiers.

Epoxides are highly reactive organic compounds comprised of a triple ring with two carbon atoms and one oxygen atom. Among other things, the chemicals industry uses them for the production of lubricants for vehicles and engines, as well as surfactants and emulsifiers for detergents and cleansers. Until now, epoxides have been based primarily on source materials procured from petroleum. Researchers at the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB have engineered a chemical-enzymatic process that now enables vegetable oil-based production, at lower temperatures and under more environmentally-friendly conditions.

The Fraunhofer Center for Chemical-Biotechnological Processes CBP in Leuna has made this technology ready for industrial application. Starting October 2012, the findings obtained in the laboratory will be scaled up to an even larger volume. Quantities of up to 100 liters will be possible at the new center. That corresponds to a 70 kilogram-batch of epoxides. In the laboratory this reaction yielded batches only in the grams range. The 14 partners in the "Integrated BioProduction" project will be working until April 2014 on engineering a process for procuring epoxides, made from domestic vegetable oils, for industry use.

[Read more...](#)

### Cadmium disturbs circadian rhythms

[Source: Chemical Watch, October 24, 2012](#)

Low doses of cadmium have a "significant endocrine-disrupter effect" by unbalancing the body clock, according to a recent study on male rats.

Teams from the Complutense University in Madrid and the University of Buenos Aires in Argentina added cadmium chloride to male rats' drinking water. Cadmium appeared to disrupt the

expression of pituitary parameters linked to circadian body clock mechanisms. Adding melatonin, an endocrine hormone that plays a key body clock role, counteracted cadmium's disruptive effects.

The research will be published in *Free Radical Biology and Medicine*.

Read article: ["Cadmium as an endocrine disruptor. Correlation with anterior pituitary redox and circadian clock mechanisms and prevention by melatonin."](#)

### Study finds elevated levels of formaldehyde, other contaminants, in day care centers

Source: [University of California - Berkeley, October 25, 2012](#)

Author: Sarah Yang

BERKELEY -- A new, comprehensive survey of day care centers by University of California, Berkeley, researchers found that, overall, the environmental quality in child care settings was similar to other indoor environments, but that levels of formaldehyde and several other contaminants exceeded state health guidelines. Cleaning- and sanitizing-related chemicals were also present in the air, and sometimes at higher levels, than in comparable studies on homes.

The study, funded by the California Air Resources Board (CARB), is the first detailed analysis of environmental contaminants and exposures for California day care centers. It covered 40 early childhood education facilities in Alameda and Monterey counties. Researchers found that 35 of the centers, or 87.5 percent, had levels of formaldehyde greater than 9 micrograms per cubic meters over eight hours, which is above California's guideline for safe exposure.

Formaldehyde, a known respiratory irritant and a listed carcinogen under California's Proposition 65, "The Safe Drinking Water and Toxic Enforcement Act of 1986," is commonly found in the glues used in pressboard furniture and laminated wood. It is also in many paint, clothing and cosmetic products, and is emitted from combustion sources such as wood burning and gas stoves.

"Children are more vulnerable to the health effects of environmental contaminants, and many small children spend as much as 10 hours per day, five days a week, in child care centers," said study lead author Asa Bradman, associate director of the UC Berkeley Center for Environmental Research and Children's Health (CERCH). "We wanted to establish the baseline levels of environmental exposures in these early child care settings, and to provide information that could be used for any necessary policy changes."

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*TURI's Note:* Also in the news regarding the TURA Higher Hazard Substance Formaldehyde is [this article](#) regarding the salon treatment "Brazilian Blowout." A formaldehyde-free alternative, [Brazilian Blowout Zero](#), is also available.

### Repairability in question for new class of notebooks

Source: [Resource Recycling, September 2012](#)

Author: Jake Thomas

With a new school year coming up, the Electronics TakeBack Coalition has released a report criticizing thin laptops, often referred to as "ultrabooks," for not only being a hassle to repair and refurbish, but also for being "ultra-inconvenient" for consumers.

The report criticizes a type of laptop that is very thin and light, uses second or third generation Intel chips, solid state storage and includes a long-lasting battery. Although "ultrabooks" are an Intel trademark, the report also takes issue with the new Apple MacBook Pro, which has been criticized for its un-recyclability and other design choices that made it difficult to repair or upgrade.

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According to the report, this design trend highlights the need for greater use of the Electronic Product Environmental Assessment Tool (EPEAT) rating system for green electronics. EPEAT is about to undergo a revision of its standards, according to the report, and the ETBC recommends

that the revised criteria include a means to reward manufacturers for prolonging the life of their products.

[Read more...](#)

*TURI's Note:* Additional perspectives on the EPEAT approval of MacBook Pro:

["EPEAT certifies controversial MacBook Pro" at Resource Recycling](#)  
["Why EPEAT approved the MacBook Pro despite recycling concerns" at GreenBiz](#)

### New Water-Based Alkyd Dispersion Technology: Protecting Wood Decks and Garden Furniture

[Source: Paint and Coatings Industry, October 2012](#)

Authors: Philippe Deligny & Chua Guan Hoe


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#### *Next-Generation Waterborne Binder Dispersions*

In response to the need to reduce VOCs, coatings formulators have introduced water-based systems. These coatings, however, generally have exhibited limited durability and have been unsuitable for rich-tannin woods. Commonly these waterborne stains have been created by modifying acrylic latex formulations initially developed for vertical surfaces. While they leave a film on the surface that protects the wood, they do not penetrate the surface like oils or sealers and thus do not adhere well. To overcome this issue, special adhesion mechanisms have been developed, but because the latex film is not integrated into the wood structure, cracking, flaking and peeling of the coating are often observed.

Next-generation waterborne binder dispersions from Cytec have been tailor made for application on wood decking and furniture that are both durable and easy to use, reducing the frequency of required maintenance.

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