

Greenlist Bulletin

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

August 10, 2012

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Regulatory Action on PFAS/LCPFAC Compounds

[Source: U.S. Environmental Protection Agency, August 8, 2012](#)

In addition to its activities on PFOA, EPA has been investigating other related perfluorinated compounds, including perfluoroalkyl sulfonates (PFAS). Studies have found PFAS chemicals in very small amounts in the blood of the general human population as well as in wildlife. Although most of the health and environmental studies have focused primarily on PFOS and PFOA, analysis of the structure of these compounds indicates that the results of those studies may be applied to a larger category of PFAS and long-chain perfluoroalkyl carboxylate (LCPFAC) chemicals. EPA believes that the chemical similarity between PFOS and PFAS raises the likelihood that health and environmental concerns are present for PFAS, and that LCPFAC compounds may degrade to PFOA.

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Cadmium Replacement Coating for Military & Aerospace Connectors

[Source: Wire and Cable Technology International, May/June 2012](#)

Author: Ed Sullivan

With the last remaining loopholes closing rapidly, the opportunity for connector manufacturers to find an optimum cadmium replacement is here. Even those who produce or distribute aerospace and military grade connectors are under mounting pressure to meet the tightening requirements of the European *RoHS* directives, which are pushing towards elimination of cadmium altogether. ...

As a manufacturer specializing in circular connectors with crimp-removable contacts for military, commercial aircraft and other aerospace applications, Corsair's original specifications were *MIL-C-26482* and *MIL-C-5015*. Today however, the company is in the process of qualifying *MIL-DTL-38999*, one version of which is a circular connector with a cadmium-class finish. The solution Corsair is currently testing is a nickel Teflon (EN-PTFE) composite coating developed by CSL over a decade ago. ...

"We are currently investigating the composite nickel-PTFE alloy as an alternative to cadmium," said Shnepf. "CSL has developed a plating process that apparently can deliver both electrical conduction and corrosion resistance and is *RoHS* compliant."

Read more at www.csl-plating.com.

Boys appear to be more vulnerable than girls to the insecticide chlorpyrifos

[Source: Columbia University Mailman School of Public Health, August 8, 2012](#)

Lower IQs seen in boys exposed in the womb to comparable amounts of the chemical

A new study is the first to find a difference between how boys and girls respond to prenatal exposure to the insecticide chlorpyrifos. Researchers at the Columbia Center for Children's Environmental Health (CCCEH) at the Mailman School of Public Health found that, at age 7, boys had greater difficulty with working memory, a key component of IQ, than girls with similar exposures. On the plus side, having nurturing parents improved working memory, especially in boys, although it did not lessen the negative cognitive effects of exposure to the chemical.

Results are published online in the journal *Neurotoxicology and Teratology*.

In 2011, research led by Virginia Rauh, ScD, Co-Deputy Director of CCCEH, established a connection between prenatal exposure to chlorpyrifos and deficits in working memory and IQ at age 7. Earlier this year, a follow-up study showed evidence in MRI scans that even low to moderate levels of exposure during pregnancy may lead to long-term, potentially irreversible changes in the brain. The latest study, led by Megan Horton, PhD, explored the impact of sex differences and the home environment on these health outcomes.

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OSHA issues two educational resources on protecting workers from mercury exposure in fluorescent bulbs

[Source: Occupational Safety and Health Administration, July 31, 2012](#)

WASHINGTON – The Occupational Safety and Health Administration (OSHA) has issued two new educational resources to help protect workers from mercury exposure while crushing and recycling fluorescent bulbs. Compact fluorescent bulbs are more efficient than incandescent bulbs, but the shift to energy-saving fluorescents, which contain mercury, calls for more attention to workers who handle, dispose of, and recycle used fluorescent bulbs.

The OSHA fact sheet explains how workers may be exposed, what kinds of engineering controls and personal protective equipment they need, and how to use these controls and equipment properly. In addition, a new OSHA Quick Card alerts employers and workers to the hazards of mercury and provides information on how to properly clean up accidentally broken fluorescent bulbs to minimize workers' exposures to mercury.

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NASA's new way to track formaldehyde

[Source: NASA/Goddard Space Flight Center, August 9, 2012](#)

NASA scientist Tom Hanisco is helping to fill a big gap in scientists' understanding of how much urban pollution – and more precisely formaldehyde – ultimately winds up in Earth's upper atmosphere where it can wreak havoc on Earth's protective ozone layer.

He and his team at NASA's Goddard Space Flight Center in Greenbelt, Md., have developed an automated, lightweight, laser-induced fluorescence device that measures the levels of this difficult-to-measure organic compound in the lower troposphere and then again at much higher altitudes. The primary objective is determining how much pollution a storm can transport through convection and then using those insights to improve chemistry-climate models. "It's a major problem in modeling knowing how to treat transport and clouds," Hanisco explained.

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CU-Boulder-led team discovers new atmospheric compound tied to climate change, human health

[Source: University of Colorado at Boulder. August 8, 2012](#)

New chemical pathway for the formation of sulfuric acid a big surprise, say researchers

An international research team led by the University of Colorado Boulder and the University of Helsinki has discovered a surprising new chemical compound in Earth's atmosphere that reacts with sulfur dioxide to form sulfuric acid, which is known to have significant impacts on climate and health.

The new compound, a type of carbonyl oxide, is formed from the reaction of ozone with alkenes, which are a family of hydrocarbons with both natural and man-made sources, said Roy "Lee" Mauldin III, a research associate in CU-Boulder's atmospheric and oceanic sciences department and lead study author. The study charts a previously unknown chemical pathway for the formation of sulfuric acid, which can result both in increased acid rain and cloud formation as well as negative respiratory effects on humans.

"We have discovered a new and important, atmospherically relevant oxidant," said Mauldin. "Sulfuric acid plays an essential role in Earth's atmosphere, from the ecological impacts of acid precipitation to the formation of new aerosol particles, which have significant climatic and health effects. Our findings demonstrate a newly observed connection between the biosphere and atmospheric chemistry."

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MAK value lowered for chlorinated biphenyls

[Source: German Research Foundation. August 3, 2012](#)

Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area submits 2012 list of MAK [Occupational Exposure Limits] and BAT [Biological Tolerance Values] values with 94 changes and new entries

Chlorinated biphenyls (PCBs) are a group of substances for which the 2012 List of MAK and BAT Values submitted by the Senate Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area of the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) specifies new, and in this case, significantly lower values than previously recommended. The current list, which was presented to the German Federal Minister of Labour and Social Affairs as in every year, and which is the basis for legislation on protection of health in the workplace, included new data on 94 substances. These data are based on detailed scientific research and transparent decision-making processes. The List of MAK and BAT Values is also available under open access for the first time, as are all publications of the Commission since the beginning of this year.

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