

Greenlist Bulletin

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

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This is the weekly bulletin of the TURI Library at the University of Massachusetts Lowell. Greenlist Bulletin provides previews of recent publications and websites relevant to reducing the use of toxic chemicals by industries, businesses, communities, individuals and government. You are welcome to send a message to jan@turi.org if you would like more information on any of the articles listed here, or if this email is not displaying properly.



Ghost factories: poison in the ground

[Source: USA Today, April 2012](#)

In hundreds of neighborhoods across the United States, children are living and playing near sites where factories once spewed lead and other toxic metal particles into the air. The factories, which melted lead in a process called smelting, closed long ago but poisonous lead particles can still be found in the soil nearby. Families interviewed were unaware of the dangers posed by their yards - and the government has done little to warn them, a USA TODAY investigation has found.

Government regulators were warned a decade ago about more than 400 forgotten lead smelting firms that operated in the 1930s to 1960s and may have deposited dangerous levels of lead contamination in nearby soil. Yet the EPA and state officials have left families and children in harm's way, doing little to assess the danger around many sites, this 14-month investigation found.

Soil tests in neighborhoods near former lead factories showed dirt so contaminated that children shouldn't be playing in it. The soil tests revealed potentially dangerous lead levels in areas of all 21 neighborhoods examined in 13 states. Regulators in Kentucky, New Jersey, New York, Oregon and Wisconsin have taken actions as a result of the newspaper's tests even before this report was published.

[Read the series and explore supplementary materials at USA Today](#)

Aerospace drives more calls for non-chrome passivate finishes

[Source: Products Finishing, May 2012](#)

Author: Tim Pennington

Nathan Keen is a rare bird when it comes to the plating industry.

His company, K-Form Inc. in Sterling, Va., added a new plating line in March after sending the work out to be finished for the past decade or so. He has spent more than \$150,000 so far on the line, and said total costs might come in around \$500,000 when his new project to plate parts is complete.

It's an ever-increasing sign that more finishers are warming up to using non-chrome passivation as a way to satisfy customers who don't want to use hexavalent chromium for corrosion treatment.

"NCP works just as good as the other stuff, or else I wouldn't offer it to my customers," says Keen, who has owned K-Form for more than 30 years and now runs it with his two sons, Callye and Noah, and their 25 employees.

"We used to do yellow chrome finishes in-house, but it really was a headache to deal with, so we found people up the street to do it for us," he says. "What I had been reading and hearing about the new products coming out-safer, if you want to call it that-it just made sense to get back into it and offer these services again and to have the control I wanted over my parts."

Established platers also are reporting increased requests for NCP finishes from customers, especially those in the aerospace industry who often are the last bastion of change in the entire industrial sector.

Rick Hunter, owner of A.M. Metal Finishing in Orlando, Fla., says he has seen increased demand for the non-chrome protective finishes from his aerospace customers.

"There's no question that hexavalent and trivalent are what a majority of people are asking for, but we are starting to see the demand for those willing to let us use a non-chrome finish grow more and more," says Hunter, who has 2,500-gal tanks for each hexavalent and trivalent line and a 900-gal tank for NCP work.

"The change is coming, but it's a slow change," he says. "The biggest driver will be the government and the military. It's all about what the specs are right now. If they change the specs, they change the demand."

Both K-Form and A.M. Metal Finishing are using one of the more popular NCP products on the market, MacDermid's Iridite NCP, which was developed in response to current regulations and directives both in the U.S. and in Europe, including "End of Life Vehicles" (ELV), "Restriction Of The Use Of Certain Hazardous Substances In Electrical And Electronic Equipment" (RoHS) and "Waste Electrical and Electronic Equipment" (WEEE).

MacDermid's Michael Barnstead said Iridite NCP does not contain lead, cadmium, hexavalent or trivalent chromium, mercury or PBB/PBDE compounds. When it debuted several years ago, Barnstead said it was the first NCP to offer bare corrosion protection, while the others were adhesion promoters for subsequent paint.

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Radiation risks: raiders of the lost archive

[Source: Nature, May 9, 2012](#)

Author: Alison Abbott

The town of Ozersk, deep in Russia's remote southern Urals, hides the relics of a massive secret experiment. From the early 1950s to the end of the cold war, nearly 250,000 animals were systematically irradiated. Some were blasted with α -, β - or γ -radiation. Others were fed radioactive particles. Some of the doses were high enough to kill the animals outright; others were so low that they seemed harmless. After the animals - mice, rats, dogs, pigs and a few monkeys - died, scientists dissected out their tissues to see what damage the radioactivity had wrought. They fixed thin slices of lung, heart, liver, brain and other organs in paraffin blocks, to be sliced and examined under the microscope. Some organs, they pickled in jars of formalin.

Fearful of a nuclear attack by the United States, the Soviet Union wanted to understand how radiation damages tissues and causes diseases such as cancer. Concerns about home-grown

accidents, such as the 1957 disaster at the Mayak nuclear plant close to Ozersk, were another motivation. Throughout their experiments, the scientists carefully preserved the tissues and meticulously recorded their findings. Similar archives of irradiated tissue were built up in the United States, Europe and Japan, where nearly half a billion animals were sacrificed to the cause. But when the cold war came to an end, the collections fell into disrepair.

Now, these archives have become important to a new generation of radiobiologists, who want to explore the effects of the extremely low doses of radiation - below 100 millisieverts - that people receive during medical procedures such as computed-tomography diagnostic scans, and by living close to the damaged Fukushima nuclear reactors in Japan.

The old collections provide a resource that could not be recreated today. Most of the experiments were done under precise conditions, at a wide range of radiation doses and usually for the lifetime of the animals. "We will never be able to repeat the scale of those animal experiments, for both funding and ethical reasons," says Gayle Woloschak, a radiation biologist at Northwestern University in Chicago, Illinois. "But maybe we can reuse the legacy tissue." Over the past few years, researchers around the world have organized an effort to identify and save tissue archives from all the major animal irradiation experiments, and they have won support from a diverse range of funding agencies, including the European Commission, the US National Cancer Institute and the US Department of Energy.

But the challenges are still great. Researchers have to show that the age of the samples, and the preservation techniques used on them, have not affected the DNA, RNA and proteins the samples contain. They have to piece together such molecular data to reveal whether cell circuitry is disrupted at low radiation doses. Their early tests are indicating that some of the samples will be usable, making them regret how much of such painstakingly collected material around the world has already been lost.

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Nike innovates its way to zero toxic discharges

[Source: GreenBiz.com, May 3, 2012](#)

Author: Bruce Kennedy

Nike (NYSE: NKE) has a very successful, world-wide, hard-won and decades-old reputation for its athletic shoes, apparel and equipment. As a brand, Nike is often associated with top sports stars, its ubiquitous "swoosh" logo and the infectious "Just Do It" slogan.

So it isn't too great a surprise that the Oregon-based retail giant is continuing the tradition of "going big or going home" when it comes to going green, including such bold goals as the elimination of hazardous discharges throughout its supply chain. Nike's newly released sustainability report highlights how it is pushing innovation in both its products and supply chain. And considering Nike's global scope, those changes could have a lasting and worldwide impact.

Nike president and CEO Mike Parker points to the constantly morphing and increasingly globalized market that has fueled the need for innovative approaches to better business performance. "The age of abundance is over," he said in the report's introduction. "We cannot achieve our bold goals for sustainability simply by delivering incremental improvements."

The report talks of creating a sustainable supply chain across all Nike brands that is "lean, green, equitable and empowered. We expect this transformation to benefit our business as well as hundreds of thousands of workers worldwide."

Nike's sustainability strategy is driven by the need to adapt to rapidly changing operating environments. Here are some of the issues the company expects will affect its future business landscape:

- Competition for natural resources: The increasing scarcity of natural resources "affects the cost and availability of the inputs needed to make our products," the report said, "and in turn, the price and availability of the products themselves"
- Rising energy costs and greenhouse gas emissions: Both factors, Nike says, are pressuring traditional methods of product manufacturing and transportation

- Global disparities: Major differences in financial access and other opportunities "influence workers throughout our supply chain"
- Changing demographics: Ongoing urbanization and the emergence of new middle class populations in developing countries "create new demands for products and services, and new opportunities to meet them"
- A new regulatory landscape: "Emerging regulations related to materials use, labor practices and other issues," the company notes, "continue to shape our business environment"

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Fear fans flames for chemical makers

[Source: Chicago Tribune, May 6, 2012](#)

Authors: Patricia Callahan and Sam Roe

Dr. David Heimbach knows how to tell a story.

Before California lawmakers last year, the noted burn surgeon drew gasps from the crowd as he described a 7-week-old baby girl who was burned in a fire started by a candle while she lay on a pillow that lacked flame retardant chemicals.

"Now this is a tiny little person, no bigger than my Italian greyhound at home," said Heimbach, gesturing to approximate the baby's size. "Half of her body was severely burned. She ultimately died after about three weeks of pain and misery in the hospital."

Heimbach's passionate testimony about the baby's death made the long-term health concerns about flame retardants voiced by doctors, environmentalists and even firefighters sound abstract and petty.

But there was a problem with his testimony: It wasn't true.

Records show there was no dangerous pillow or candle fire. The baby he described didn't exist. Neither did the 9-week-old patient who Heimbach told California legislators died in a candle fire in 2009. Nor did the 6-week-old patient who he told Alaska lawmakers was fatally burned in her crib in 2010.

Heimbach is not just a prominent burn doctor. He is a star witness for the manufacturers of flame retardants.

His testimony, the Tribune found, is part of a decades-long campaign of deception that has loaded the furniture and electronics in American homes with pounds of toxic chemicals linked to cancer, neurological deficits, developmental problems and impaired fertility.

The tactics started with Big Tobacco, which wanted to shift focus away from cigarettes as the cause of fire deaths, and continued as chemical companies worked to preserve a lucrative market for their products, according to a Tribune review of thousands of government, scientific and internal industry documents.

These powerful industries distorted science in ways that overstated the benefits of the chemicals, created a phony consumer watchdog group that stoked the public's fear of fire and helped organize and steer an association of top fire officials that spent more than a decade campaigning for their cause.

Today, scientists know that some flame retardants escape from household products and settle in dust. That's why toddlers, who play on the floor and put things in their mouths, generally have far higher levels of these chemicals in their bodies than their parents.

Blood levels of certain widely used flame retardants doubled in adults every two to five years between 1970 and 2004. More recent studies show levels haven't declined in the U.S. even though some of the chemicals have been pulled from the market. A typical American baby is born with the highest recorded concentrations of flame retardants among infants in the world.

People might be willing to accept the health risks if the flame retardants packed into sofas and easy chairs worked as promised. But they don't.

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[Explore additional materials in the Tribune's "Playing with Fire" series](#)



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