BEST News

Better Environmental Sustainability Targets (BEST)

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Chinese Government Shuts Down 583 Lead Battery Manufacturing and Recycling Plants

The Chinese government has taken initial steps to address the environmental violations of battery manufacturing and recycling facilities throughout China by closing down many violators. Initially authorities closed down at least 300 battery manufacturers in Zhejiang and Guangdong provinces for inspection. In Anhui province, more than 80% of battery manufacturers were temporarily idled, with 27% of the province's 97 lead battery manufacturers permanently closed. As of August 2011 a total of 583 manufacturing and recycling plants throughout China have been closed. Furthermore, press reports have indicated that power and water supplies to some of these plants have been shut off to presumably prevent them from reopening.

Battery Manufacturing Facility in China

Although most of the plants idled were local Chinese companies, the Shanghai Environmental Protection Bureau also shut down a plant operated by the U.S. Company, Johnson Controls for investigation. This action came in response to reports of elevated blood levels among twenty-five children in Kanghua New Village in Shanghai. This is the first example we know of where an American company operating a large manufacturing facility has been implicated in a mass poisoning incident in China.

Cameroon Lead Paint Update

Sixty-five samples of new paint were collected and sent to us by our partner, Research and Education Centre for Development (CREPD), from eight cities in Cameroon since the beginning of the year for analyses of lead concentration. Analytical services were donated by Galson Laboratories in West Syracuse, NY. The lead concentration in 67% of the paint samples was greater than 90 ppm and 65% of the samples had concentrations exceeding 600 ppm of lead indicating that the lead is added intentionally and not a contaminant in any ingredient. The highest lead concentration in any sample was 500,000 ppm. CREPD also found that paints are poorly labeled and do not indicate the lead content. The government in Cameroon has agreed to set up an expert committee to set standards for lead paint in which CREPD will play a major role.

Lead Paint Manufacturing in Cameroon

New CDC Case Definition for Elevated Adult Blood Lead Level

The CDC has recently posted a new case definition for elevated blood lead levels in adults. They now have a policy that states that an adult blood lead levels should be recorded by the National Public Health Surveillance System (NPHSS) if an adult (≥ 16 years) has a venous (or comparable) blood lead concentration ≥ 10 µg/dL (0.48 µmol/L) of whole blood. This is now the same as the CDC case definition of elevated blood lead in children. As noted in our October 2010 newsletter, CDC Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) is in the process of also reviewing the "level of concern" for children and this will likely be on the agenda for the Committee's next meeting in November. See http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/lead_current.htm.

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OK International Releases Report on Used Lead Battery Exports to Mexico

OK International has published a report in partnership with Fronteras Comunes finding a 112% increase in the export of used lead batteries from the U.S. to Mexico. Of all of the used lead batteries generated in the U.S., approximately 12% of them are sent to Mexico for recycling. Twice as much lead is exported to Mexico in used batteries as is exported from the US to the world in electronic waste. Used batteries are not tracked with manifests and may be diverted to unlicensed recyclers.

Given the considerable differences in environmental and occupational regulations between these countries, our findings raise significant concerns about the contribution of used lead batteries from the U.S. to lead poisoning south of the border. The regulatory limits for airborne lead in Mexico are ten times what they are in the U.S. and actual airborne emissions from battery recycling plants in Mexico are 20 times higher than at comparable U.S. plants. Occupational exposure limits are three times higher in Mexico than the U.S. and the average blood lead level among workers is five times the average for workers in the battery recycling industry in the U.S. See the report **"Exporting Hazards: U.S. shipments of used lead batteries to Mexico take advantage of lax environmental and worker health regulations** " in both English and Spanish.

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New Standards on Lead Paint in India and Sri Lanka

The Bureau of Indian Standards (BIS) has issued a draft revision to its standard that prescribes methods for sampling and testing the chemical content and performance characteristics for a range of paint types. The revision adds a limit of 90 ppm for the lead content in some consumer paints (e.g. enamel decorative paints). The U.S. restricts the sale of paints for residential applications if the lead content is greater than 90 ppm.

The Sri Lankan government has issued a final directive restricting the manufacture, import, sale, or distribution of any paint that does not comply with limits for lead content set by the Sri Lanka Standard Institute. The new regulatory limits are 90 ppm for toys or accessories for children and for emulsion paints for interior and exterior use. The limit for enamel paints and floor paints is 600 ppm. Few countries have any such mandatory limits, so this is a positive step in the right direction.

E-waste Export Bill May Increase Exports to Mexico

A bill was introduced into the U.S. Congress that would prohibit the export of most electronic wastes (e-waste) to countries other than members of the OECD and E.U. Although the list of restricted electronic wastes includes lead batteries, the definition of covered electronic equipment excludes parts of motor vehicles. As Mexico is a member of the OECD, if this bill passes we expect more e-waste, including lead batteries, to be sent south of the border for recycling. (see H.R.2284, S.1270)

Draft Monograph on Health Effects of Low-Level Lead Exposure

The National Toxicology Program (NTP) announced the availability of a monograph on the health effects of low-level lead exposure. The draft report concluded that there is "sufficient evidence" for an association with blood lead levels and decreased academic performance and increased incidence of ADHD at levels below 5 ug/dL. At levels below 10 ug /dL, there was "sufficient evidence" of delayed puberty, decreased IQ and hearing loss. In adults, there was "sufficient evidence" of an association between blood lead levels below 10 ug/dL and increased blood pressure and cardiovascular mortality rates. Below 5ug/dL in adults, there was "sufficient evidence" of decreased kidney function associated with lead exposure. The monograph will be the subject of an NTP review panel meeting on November 17-18. The full document is available
here: http://ntp.niehs.nih.gov/NTP/ohat/Lead/DraftNTPMonographonHealthEffectsofLowLevelLead.pdf

New Battery Technology – Sodium Metal Hydride

General Electric (GE) is touting their new Durathon batteries on their web site as a way to improve telecommunications services throughout the world. Although sodium battery technology is not new, GE developed the Durathon^{TM} battery with sodium metal halide chemistry in an effort to build a more efficient energy storage system for electric cars that resulted in a battery that they claim will revolutionize the battery industry. They have a small footprint, long life, and a high energy density and GE is looking into using them in a variety of industries. Additional information is available at: http://geenergystorage.com/telecom.html.

Recent Studies Published on the Lead Battery Industry

OK international has recently published two articles that have shed light on the global lead battery industry. The first article, authored by Perry Gottesfeld of OK International and Amod Pokhrel of the University of California, Berkeley, is **"Review: Lead Exposure in Battery Manufacturing and Recycling in Developing Countries and Among Children in Nearby Communities"**, published in the Journal of Occupational and Environmental Hygiene in September 2011. This paper reviews studies published from 1993 to 2010 that report blood lead levels and/or exposure data. The review included studies from 37 developing countries and revealed that the average blood lead levels of workers in battery manufacturing are approximately three times higher in developing countries than in the United States. Children living near these plants had blood lead levels 13 times higher than the geometric mean childhood blood lead level in the United States. BEST Certification is recommended as a step toward improving the battery industry in the developing world in an effort to address these disparities. Link to the abstract at: http://oeh.informaworld.com/soeh/content~content=a939902373~db=all~jumptype=rss.

The second article, **"Lead Emissions from Solar Photovoltaic Energy Systems in China and India"**, authored by Perry Gottesfeld of OK International and Christopher Cherry of the University of Tennessee, was published in the journal Energy Policy in September 2011. This article examines the environmental impacts of the lead batteries that will be required to meet the solar energy production targets set by the governments of China and India. As most solar power systems rely on lead batteries for energy storage in these countries, it is expected that the push for solar power will result in significant lead emissions. The authors estimate that the systems planned for China and India will be responsible for environmental lead losses over their lifespanthat are equal to 1/3 of global lead production in 2009. For a copy of the full article, go to: http://www.okinternational.org/docs/Energy%20Policy%202011%20Gottesfeld.pdf.

Linking TB and Silica Exposure

The link between silica exposure and Tuberculosis (TB) has been well established for years, but many involved in addressing the global TB epidemic are not aware that reducing silica exposures is a feasible prevention strategy. OK International's Perry Gottesfeld collaborated with colleagues from South Africa and India in publishing an editorial in the International Journal of Tuberculosis and Lung Disease on **"Preventing tuberculosis with silica dust controls."** (Int J Tuberc Lung Dis 15(6):713-714, 2011). The editorial applauds the work that has been done on the early detection and treatment of TB worldwide, but notes that this approach has not achieved significant reductions in disease rates in some populations. The report concludes that "TB program activities should be expanded beyond the diagnosis and treatment model to incorporate promising prevention strategies."

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