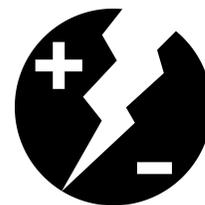


# BEST News

Better Environmental Sustainability Targets (BEST)

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## Lead Battery Industry Training Course Ho Chi Minh City, Vietnam

On April 23-24, 2009 Occupational Knowledge International (OK International) conducted a training class with representatives from Vietnam's largest lead battery manufacturers, government agencies, and vehicle manufacturers. Participants were informed about the health hazards of lead pollution from battery manufacturing and informal recycling activities and about engineering controls and work practices to reduce emissions.



The course was presented in partnership with the Vietnam Environmental Protection Agency (VEPA). Instructors included Russell Kemp of the Environ Corporation, who discussed the critical role of ventilation and emissions controls in the lead battery industry and Nguyen Anh Tuan of VEPA who highlighted Vietnam's national regulations regarding the manufacturing and recycling of lead batteries. Perry Gottesfeld from OK International also presented information on reducing occupational exposures.

## Mass Lead Poisonings in China

Over the past month, three mass lead poisoning incidents have occurred in China. In Shaanxi province at least 851 children living near the Dongling metal smelter, China's fourth largest smelter, tested positive for lead poisoning. Over 170 of these children were hospitalized. Some of these children are confirmed to have blood lead levels (BLLs) over ten times China's current level of concern. In southeastern China's Hunan province

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elevated BLLs were found in over 1,300 children living near an unlicensed manganese smelter. In the third incident, occurring in an industrial area outside of Kunming, the capital of Yunnan province, over 200 children tested positive for lead poisoning.

The smelting industry will continue to grow in China particularly as it feeds demand for lead batteries. According to China's largest battery producer, Tianneng Power International Ltd., lead-acid battery production in China is expected to grow by 45 percent next year as the country increases alternative-energy use in transport and construction. While China's environmental ministry announced a new "Implementation Plan on Controlling Heavy Metal Pollution" on August 28th, this policy document has not yet been released.

### **High Lead Content found in New Residential Paints**

Several major brands of consumer paint in India have been found to contain high quantities of lead. In a recent study conducted by the Centre for Science and Environment (CSE), samples from five of India's six largest paint companies were analyzed. The study reported that 72% of the samples contained lead in concentrations exceeding 1,000 parts per million (ppm). All samples tested from one of the paint companies contained less than the 1,000 ppm limit. See the full report [here](#).

In a separate study, Toxics Link examined the lead content of newly manufactured household paint collected from 11 countries including Belarus, Brazil, India, Mexico, Nigeria, Philippines, Senegal, South Africa, Sri Lanka, Tanzania, and Thailand. The executive summary of the report indicates that 68% of all enamel paint samples tested had lead concentrations over 90 ppm and 65% had concentrations over 600 ppm. The current standard for new residential paint in the U.S. was recently lowered from 600 ppm to 90 ppm. Average lead levels in the paints tested exceeded 18,000 ppm. For more information see the executive summary of Toxics Link's [study](#).

### **CDC Report on Blood Lead Levels of Lead Battery Industry Workers**

The U.S. CDC released a report in April of this year, summarizing blood lead levels (BLLs) from workers in 34 states in the United States. According to the report, in 2007 2,524 workers involved in the manufacturing of storage batteries had BLLs that were at or above 25 µg/dL and 207 of these workers had BLLs at or above 40 µg/dL. In addition, 447 workers in the battery recycling and secondary smelting sector had BLLs that were at or above 25 µg/dL and 60 workers were at or above 40 µg/dL. For workers with more than one BLL result in 2007, only the highest BLL is included in this data. For more information see: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5814a3.htm#Table>

### **24% of Children in China have Elevated Lead Levels**



**OK International has recently collected and posted a number of lead related fact sheets in various languages. See:**

[http://www.okinternational.org/lead\\_paint\\_resources.html](http://www.okinternational.org/lead_paint_resources.html)

**OK International would like to thank our program funders including:**

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A recent study in China using data from 2004 to 2007 indicates that 24% of Chinese children have blood lead levels (BLLs) above 10 µg/dL, the current level of concern as defined by the U.S. Center for Disease Control (CDC) and the World Health Organization (WHO). The average BLL for those children living in industrial areas was higher than those living in urban and suburban areas. When compared to the previous reporting period of 1995-2003, there is a demonstrated decrease in average BLLs of children which is largely attributed to China's banning of leaded gasoline in 2001. Due to numerous other sources of exposure, including lead battery manufacturing and recycling, lead paint, and e-waste, child BLLs are still alarmingly high.

### **Action on Lowering Recommended Blood Lead Level in Adults**

There is a growing body of research reports demonstrating that low blood lead concentrations in adults are associated with significant health risks, including hypertension, stroke, and kidney dysfunction. Based on this research, the Council of State and Territorial Epidemiologists (CSTE) is recommending a change in the case definition of elevated blood lead levels (BLLs) in adults, from 25 µg/dL to 10 µg/dL. Since 1999, an elevated BLL in an adult has been defined by CSTE and Center for Disease Control (CDC) as 25 µg/dL or greater. The case definition of elevated BLL for children will not be affected by this recommendation.

### **E-bike Sales Grow in China**

Electric bicycle sales in China are far surpassing those of automobiles. In 2008, 21 million e-bikes were sold in China, compared with 9.4 million automobiles, placing China in the lead of the world market for these vehicles. The vast majority of Chinese e-bikes are sold with lead batteries.

E-bikes currently available on the Chinese market today can travel as far as 100 km on one charge and can reach top speeds of 30 mph (although regulations exist on maximum speeds). With an average cost of around \$300 USD, e-bikes present an attractive transportation option. However, the bikes rely on large lead-acid batteries approximately the size of a car battery, which need to be replaced every year. Recent reports of mass lead poisoning incidents in China point to the environmental health concerns with the manufacturing and disposal of these batteries as e-bike sales continue to grow.

### **New Lead Test for Saliva**

A new oral fluid test to screen for lead poisoning is now being marketed for consumer use in the U.S. Despite claims on the company's web site that it is an "FDA Approved collection kit, as reliable as blood lab tests" our investigation has shown that there is no U.S. Food and Drug Administration (FDA) approval for testing lead levels in saliva. The company indicated that the approval was limited to the collection device. The test is being marketed under the name "Lead Confirm" (<http://www.leadtestconfirm>).

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[com/](#)).

Previous studies have demonstrated that saliva analysis is not effective for determining lead exposure, particularly at lower levels. Unpublished results of a recent clinical trial conducted by researchers in Georgia suggest that oral fluid may be a reliable method to screen children for lead exposure. See more information about the clinical trial at: <https://www.gapha.org/gpha-section-chair-develops-revolutionary-lead-testing-procedure/>

## **Advanced Lead-Acid Battery Technology**

In the last edition of BEST News, we covered three companies working to improve the performance of lead batteries. Another company, Applied Intellectual Capital (AIC) of Emeryville, California, is working to design a lead-acid battery that can outperform a lithium-ion battery on both power delivery and cost. Instead of the traditional monopolar design used in lead batteries, AIC's lead batteries are bipolar, which decreases internal resistance, boosts efficiency, and allows the battery to be lighter. With current plans to partner with a Chinese company to begin manufacturing of the bipolar battery, AIC intends to put its batteries to use in China's e-bike market. For more information see the AIC website: <http://www.apicap.com/>.

## **Amendment to BEST Standard Adopted**

To accommodate changes in the industry and issues that have been raised since the standard was released, Board of Directors of OK Environment has reviewed the requirements for the collection of used batteries and has revised the battery take back provisions of the standard. Some of the concerns that have been raised since the release of the standard in 2008 include:

- Companies indicated that price volatility was impacting used battery collection rates. The price of lead on the London Metal Exchange had gone below \$1,000 USD per ton at the beginning of this year. However, in recent months it has rebounded to over \$2,000 per ton.
- The BEST Standard failed to account for differences between companies that manufacture primarily for export, and companies that sell primarily for a domestic consumer.
- Cooperation among bulk and institutional purchasers to revise procedures to return used lead batteries directly to battery manufacturers has been lacking.

The revisions approved at the regular board meeting in May, 2009 still require that battery companies take back used batteries. However, the standard no longer includes specific performance targets for this criterion. Click [here](#) to see the updated version of the BEST Standard 1001.

## How many labor hours does it take to make a lead-acid battery?

Answer: 4 Minutes according to Bob Lutz, General Motors Vice Chairman. Prior to joining GM, Lutz was Chairman and Chief Executive officer of Exide Technologies, one of the world's largest producers of lead acid batteries. See his account on youtube!

[http://www.youtube.com/watch?v=QoYnnSKH\\_6I](http://www.youtube.com/watch?v=QoYnnSKH_6I)

Occupational Knowledge International

[www.okinternational.org](http://www.okinternational.org)

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