



CHEMICAL PRODUCT DEVELOPMENT
AND DEFENSE

MEMORANDUM

Via E-Mail

DATE: December 10, 2009

TO: Clients and Friends

FROM: The Acta Group, L.L.C.

RE: CDC Releases *Fourth National Report on Human Exposure to Environmental Chemicals*

Today the Centers for Disease Control and Prevention (CDC) released the *Fourth National Report on Human Exposure to Environmental Chemicals* (Fourth Report), which provides an ongoing assessment of the exposure of the U.S. population to environmental chemicals using biomonitoring. The Fourth Report presents data for the U.S. population for 212 environmental chemicals over the period 2003-2004, updating CDC's 2005 *Third National Report on Human Exposure to Environmental Chemicals*, which presented biomonitoring exposure data for 148 environmental chemicals over the period 2001-2002. New chemicals included in the Fourth Report include acrylamide and glycidamide adducts; arsenic species and metabolites; environmental phenols, including bisphenol A (BPA) and triclosan; perchlorate; perfluorinated chemicals; polybrominated diphenyl ethers; volatile organic compounds; and some additions to chemical groups previously measured. The Fourth Report is available at <http://www.cdc.gov/exposurereport/>.

According to CDC, the Fourth Report "provides unique exposure information to scientists, physicians, and health officials to help prevent effects that may result from exposure to environmental chemicals." The Fourth Report lists the following specific public health uses of the exposure information:

- Determine which chemicals get into Americans' bodies and at what concentrations;

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- Determine what proportion of the population has levels above those associated with adverse health effects for chemicals with a known toxicity level;
- Establish reference values that can be used by physicians and scientists to determine whether a person or group has an unusually high exposure;
- Assess the effectiveness of public health efforts to reduce exposure of Americans to track levels over time;
- Determine whether exposure levels are higher among minorities, children, women of childbearing age, or other special groups; and
- Direct priorities for research on human health effects from exposure.

The Fourth Report notes that the presence of an environmental chemical in a person's blood or urine does not mean that it will cause effects or disease. The Fourth Report states:

The toxicity of a chemical is related to its dose or concentration, in addition to a person's individual susceptibility. Small amounts may be of no health consequence, whereas larger amounts may cause adverse health effects. Research studies, separate from the National Exposure Report, are required to determine the levels of a chemical that may cause health effects and the levels that are not a significant health concern. For some chemicals, such as lead, research studies provide a good understanding of health risks associated with various blood levels. For most of the environmental chemicals included in the Fourth Report, more research is needed to determine whether exposure at the levels reported is a cause for health concern.

The Fourth Report states that findings indicate "widespread exposure" to the following "commonly used industrial chemicals":



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- Polybrominated diphenyl ethers are fire retardants used in certain manufactured products. These accumulate in the environment and in human fat tissue. One type of polybrominated diphenyl ether, BDE-47, was found in the serum of nearly all of the National Health and Nutrition Examination Survey (NHANES) participants.
- BPA, a component of epoxy resins and polycarbonates, may have potential reproductive toxicity. General population exposure to BPA may occur through ingestion of foods in contact with BPA-containing materials. CDC scientists found BPA in more than 90 percent of the urine samples representative of the U.S. population.
- Another example of widespread human exposure included several of the perfluorinated chemicals. One of these chemicals, perfluorooctanoic acid (PFOA), was a byproduct of the synthesis of other perfluorinated chemicals and was a synthesis aid in the manufacture of a commonly used polymer, polytetrafluoroethylene, which is used to create heat-resistant non-stick coatings in cookware. Most participants had measurable levels of this environmental contaminant.

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We hope this information is helpful. As always, please call if you have any questions.