Veille Internet sur les phtalates du 5/09/2011 au 18/09/2011

Faits marquants :

ARTICLES EN ANGLAIS		
• Marketwatch.com	**- Eastman Announces Second Plasticizer Capacity Expansion at Estonia Site** *La société "Eastman Chemical" a annoncé une expansion de sa ligne de plastifiants Bensoflex et Admex (sans phtalates) sur deux sites de production, ce qui reflète une augmentation continuelle de la demande pour des alternatives aux produits à base de phtalates.*	p2
• Eurekalert.org	**- Prenatal exposure to phthalates linked to decreased mental and motor development** *Une nouvelle étude menée par des chercheurs de l'école de Santé Publique Mailman de l'Université de Columbia montre que l'exposition prénatale à certains phtalates (phtalate de di-2-éthylhexyle, phtalate de di-isobutyle, phtalates de di-n-butyle et de butylbenzyle) affecte négativement le développent mental, moteur et comportemental des enfants exposés pendant les années préscolaires".*	p3-4
• Environmental healthnews.org	**- Common plasticizer alters an important memory system in male rat brains.** *Selon des chercheurs canadiens, les jeunes rats mâles exposés au phtalate de DEHP, un plastifiant utilisé pour assouplir le plastique, développent moins de connections cellulaires et nerveuses dans une région du cerveau liée à la mémoire.*	p5
• Environmentalhealthnews.org	**- Moms' plasticizer exposure troubling for baby boys.** *Une étude de Sud-Coréene montre que l'exposition des femmes aux phtalates pendant la grossesse est associée à un sous-développement moteur et cognitif de leur bébé à l'âge de 6 mois. Cette association n'a été trouvée que chez les garçons.*	p6

http://www.marketwatch.com/story/eastman-announces-second-plasticizer-capacity-expansion-at-estonia-site-2011-09-08

Retour au début

Sept. 8, 2011, 9:00 a.m. EDT

Eastman Announces Second Plasticizer Capacity Expansion at Estonia Site

Plans Additional Expansions for Kingsport and Chestertown Sites

KINGSPORT, Tenn., Sep 08, 2011 (BUSINESS WIRE) -- Eastman Chemical Company /quotes/zigman/134438/quotes/nls/emn EMN -1.67% today announced a second expansion of its Benzoflex(TM) plasticizer line at the Kohtla-Jarve, Estonia, site. The expansion will increase Benzoflex(TM) capacity at the site by an additional 11,000 metric tons and is expected to be completed by the end of second quarter 2012.

The company also announced plans for expansion of the Benzoflex(TM) plasticizers and Admex(TM) polymeric plasticizers lines at its Chestertown, MD and Kingsport, TN sites. The total capacity for the expansions in North America is approximately 9,000 metric tons and is also expected to be completed by the end of second quarter 2012.

"These expansions reflect the continuing growth in demand for alternatives to traditional phthalate products," said Heidi Barnes, Oxo and Plasticizers business director. "The additional capacity will allow our Performance Chemicals and Intermediates segment to satisfy increasing customer demand for non-phthalate plasticizers."

A benzoic acid derivative, Benzoflex is used in coatings, adhesives, sealants and caulks, and is also used to provide flexibility to PVC in a wide variety of applications, including vinyl flooring. Admex(TM) plasticizers are used to enable flexible vinyl compounds to compete with rubber and thermoplastic elastomers in a variety of applications, including PVC-based adhesive tapes, conveyor belts, gaskets and hoses. Benzoflex(TM) and Admex(TM) plasticizers are non-phthalates for manufacturers who are looking for sustainable alternatives to traditional phthalate plasticizers.

"Around the world, customers continue to preferentially select Eastman's non-phthalate plasticizers," said Joost Berting, managing director, Europe, Middle East and Africa region. "These capacity expansions for our Benzoflex(TM) plasticizer product line are a demonstration of our commitment to grow with our customers in a sustainable way both in established markets as well as fast expanding regions."

Eastman's chemicals, fibers and plastics are used as key ingredients in products that people use every day. Approximately 10,000 Eastman employees around the world blend technical expertise and innovation to deliver practical solutions. The company is committed to finding sustainable business opportunities within the diverse markets and geographies it serves. A global company headquartered in Kingsport, Tenn., USA, Eastman had 2010 sales of $5.8 billion. For more information, visit www.eastman.com .

SOURCE: Eastman Chemical Company

Retour au début

Public release date: 6-Sep-2011

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Columbia University's Mailman School of Public Health

Prenatal exposure to phthalates linked to decreased mental and motor development

These endocrine-disrupting chemicals, which are widely present in the environment, linked to increased behavioral problems at age 3 and may cause changes in the developing brain

A newly published study by researchers at Columbia University's Mailman School of Public Health heightens concerns over the potential health effects on children of a group of ubiquitous chemicals known as phthalates. Phthalates are a class of chemicals that are known to disrupt the endocrine system, and are widely used in consumer products ranging from plastic toys, to household building materials, to shampoos.

Recent studies of school-age children have provided preliminary links between prenatal exposure to phthalates and developmental problems. The study is the first to examine prenatal phthalate exposure and the prevalence of mental, motor and behavioral problems in children who are in the preschool years. The paper, published online today in Environmental Health Perspectives, adds to rising concerns about the risks associated with exposures to phthalates during pregnancy.

The study followed the children of 319 non-smoking inner-city women who gave birth between 1999 and 2006. Researchers, led by Robin M. Whyatt, DrPH, deputy director of the Columbia Center for Children's Environmental Health, measured metabolites of four phthalates in maternal urine as markers of prenatal exposure. The phthalates were: di-2-ethylhexyl phthalate, di-isobutyl phthalate, di-n-butyl phthalate and butylbenzyl phthalate. The study evaluated associations between prenatal exposures to these phthalates and child mental, motor and behavioral development at age 3 years.

The scientists used the Bayley Scales of Infant Development II, a well validated developmental test, to assess the mental and motor development of the children. Behavioral problems were measured by asking mothers to complete the widely used 99-item Child Behavior Checklist (for ages 1½-5 years). Overall, researchers found that higher prenatal exposures to two of the phthalates significantly increased the odds of motor delay, an indication of potential future problems with fine and gross motor coordination. Among girls, one of the phthalates was associated with significant decreases in mental development. Prenatal exposures to three of the phthalates were also significantly associated with behavior problems including emotionally reactive behavior, anxiety/depression, somatic complaints and withdrawn behavior. These effects differed somewhat by child sex but were statistically significant among both boys and girls.

"Our results suggest that prenatal exposure to these phthalates adversely affects child mental, motor and behavioral development during the preschool years," said Dr. Whyatt, who is also professor of clinical Environmental Health Sciences. "The results add to a growing public health concern about the widespread use of phthalates in consumer products."

The actual mechanisms by which phthalates may affect the developing brain are still being explored. Dr. Whyatt points out that phthalates are endocrine disrupters—substances that affect hormone systems in the body. Evidence suggests that they impact the function of the thyroid gland. They also lower production of testosterone, which plays a critical role in the developing brain. "More work is needed to understand the biological effects of these commonplace substances," noted Dr. Whyatt.

"The results are concerning since increasing exposures from the lowest 25% to the highest 25% among the women in our study was associated with a doubling or tripling in the odds of motor and/or behavioral problems in the children," explained Pam Factor-Litvak, PhD, the senior epidemiologist on the study. "However, the number of children with clinical disorders

was small," stated Dr. Factor-Litvak. The authors point out that the phthalate exposures among the women in the study varied widely reflecting the range of exposures found in the U.S. population.

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The study was conducted in collaboration with Dr. Antonia Calafat from the Centers for Disease Control and Prevention, who measured the phthalate metabolites in the maternal prenatal urine. Other members of the Columbia research team included Dr. Xinhua Liu, Dr. Virginia A. Rauh, Allan C. Just, Lori Hoepner, Diurka Diaz, James Quinn, Dr. Jennifer Adibi, and Dr. Frederica P. Perera.

The work was supported by a grant from the National Institute of Environmental Health Sciences.

About Columbia University's Mailman School of Public Health

Founded in 1922 as one of the first three public health academies in the nation, Columbia University's Mailman School of Public Health pursues an agenda of research, education, and service to address the critical and complex public health issues affecting New Yorkers, the nation and the world. The Mailman School is the third largest recipient of NIH grants among schools of public health. Its over 300 multi-disciplinary faculty members work in more than 100 countries around the world, addressing such issues as preventing infectious and chronic diseases, environmental health, maternal and child health, health policy, climate change & health, and public health preparedness. It is a leader in public health education with over 1,000 graduate students from more than 40 nations pursuing a variety of master's and doctoral degree programs. The Mailman School is also home to numerous world-renowned research centers including the International Center for AIDS Care and Treatment Programs (ICAP), the National Center for Disaster Preparedness, and the Center for Infection and Immunity. For more information, please visit www.mailman.columbia.edu

About the Columbia Center for Children's Environmental Health

The Columbia Center for Children's Environmental Health (The Center) conducts community-based research in the United States and overseas to study the health effects of prenatal and early postnatal exposures to common urban pollutants, with the aim of preventing environmentally related conditions in children. We apply the results of our research to interventions that reduce exposure to toxic pollutants; a community education campaign to increase environmental health awareness among local residents, parents, health professionals and educators; and to informing public interest groups, elected officials, and other policymakers who can shape policies to improve the environmental health status of low-income communities. The Center's overall mission is to improve prevention, clinical treatment, and engage community members to work effectively with each other and with elected officials to improve their neighborhood's environmental health.

Retour au début

http://www.environmentalhealthnews.org/ehs/newscience/2011/08/2011-0901-phthalate-rats-hipocampus/

Retour au début

Environmental Health News
Published by Environmental Health Sciences

Common plasticizer alters an important memory system in male rat brains.

Sep 02, 2011

Smith, CA, A MacDonald and MR Holahan. 2011. **Acute exposure to di(2-ethylhexyl) phthalate adversely impacts hippocampal development in the male rat**. Neuroscience http://dx.doi.org/10.1016/j.neuroscience.2011.06.082.

Synopsis by Steven Neese

Male rats exposed to the plastic softener DEHP formed fewer cells and nerve connections in a memory-related region of their young brains, Canadian researchers report.

An ingredient widely-used to soften plastic containers and toys changed brain development in growing male rats when exposure occurs during a sensitive phase. The same exposure did not affect female rats, report researchers in the journal Neuroscience.

The animal study shows that the phthalate DEHP can disrupt the normal development of the hippocampus in young male rats by reducing the number of cells and nerve connections that form. The hippocampus is important to learning as it is involved in the formation of long-term memories. The rat hippocampus matures in the first few weeks after birth while in people, the hippocampus largely develops before birth during the third trimester.

This is the first research to connect phthalate exposure at a critical time of development with these cell and nerve effects in the hippocampus. Although not measured in the study, the brain effects may result in impaired cognitive functioning and could result in significant behavioral changes throughout life. In people, disruptions in development of the hippocampus may result in poorer memory, which can impact learning ability and even IQ.

DEHP is a phthalate added to hard plastics – mainly polyvinyl chloride (PVC) – to make them flexible. It is used to produce and manufacture soft plastics for a number of uses, including children's toys, food storage containers and medical tubing and bags. Prior research shows that infants and children are more exposed than adults to these contaminants. Youngsters are more exposed because of their increased contact with DEHP-containing products and house dust and perhaps, because of their higher metabolic rate.

In the study, researchers injected 16-day-old male and female rats – the prime development time for some regions of the rat hippocampus – with 10 milligrams per kilogram of DEHP for seven consecutive days. The dose is the lowest known to affect testosterone hormone production in male rats. Hippocampus tissue from treated and untreated rats was analyzed for cell and nerve development. The researchers compared exposed to unexposed rats and male to female rats.

The region of the male rat hippocampus – a brain region called CA3 and strongly associated with memory – had fewer cells and less axonal connections between the nerve cells that were there. This loss in connections could results in improper or possibly disrupted communication between cells in the hippocampus.

Female rats showed no developmental changes following DEHP exposure, an effect most likely related to the chemical's anti-androgen hormone properties. The finding reveals a distinct difference in the toxic effects of this chemical between male and female rodents.

These striking results are the first found in rats exposed while the hippocampus cells and nerves are developing. The effects could result in learning and behavior changes with age, although this was not measured in the study. The potential for human impacts will also need further study.

Retour au début

http://www.environmentalhealthnews.org/ehs/newscience/2011/08/2011-0902-moms-phthalates-child-effects

Retour au début

Environmental Health News
Published by Environmental Health Sciences

Moms' plasticizer exposure troubling for baby boys.

Sep 06, 2011

Kim, Y, EH Ha, EJ Kim, H Park, M Ha, JH Kim, YC Hong, N Chang and BN Kim. 2011. **Prenatal exposure to phthalates and infant development at six months: Prospective Mothers and Children's Environmental Health (MOCEH) Study**. Environmental Health Perspectives http://dx.doi.org/10.1289/ehp.1003178.

Synopsis by Aimin Chen

A woman's exposure to commonly used plasticizers – called phthalates – during pregnancy may be associated with suboptimal development in babies, finds a South Korean study.

Increasing exposure to plastic-softening chemicals in pregnant women was associated with poorer development in their baby boys, finds a study that examined mental and motor skills in 6-month-old infants.

The results show that the higher the exposure to phthalates in the moms, the lower the scores of infant development, including both cognitive and motor behavior. However, the association was only identified in sons, not in daughters.

Given that phthalates are short-lived in people, reducing exposure in pregnant women will effectively reduce the possibility of fetal exposure to these chemicals. The study is important because it adds more evidence to the growing human health concerns about these chemicals, especially with boys.

Phthalates have many industrial and commercial applications. Some are commonly used in plastics to make them soft, flexible and less brittle. Medical tubing, toys, food containers, flooring and other plastic consumer products can contain them. They also are added to personal care items such as lipstick, nail polish and shampoo. Although phthalates do not accumulate in people, exposure to these potentially hormone-mimicking chemicals occurs every day through food, air or skin.

Animal studies suggest prenatal phthahate exposure may influence neurodevelopment and contribute to hyperactive and impulsive – ADHD-like symptoms – behavior. Similar conclusions were drawn from a study with school-aged children. Other studies identify links between phthalates and social impairments in children.

Phthalates may function as anti-androgens. That is, they block or otherwise thwart male hormones. There is also concern they may disrupt thyroid hormones and contribute to infant developmental problems. Evidence on whether they influence infant behavior is still scarce.

In this study conducted between 2006 and 2009, a group of South Korean investigators examined 460 mothers during pregnancy and their babies six months after birth. They measured the three main metabolites of DEHP and DBP phthalates – MEOHP, MEHHP and MBP – in the mom's urine sample taken during the third trimester. Metabolites form from the original compounds after chemical changes in the body. They tested infant behavior development using the standardized assessment Bayley Scales of Infant Development. The researchers statisically compared the exposure to phthalates – as measured in the moms' urine – and infant behavior.

Further research is needed to validate these findings and confirm if the behavior patterns persist into childhood.

Retour au début