

# Bisphenol A in infant formula at 'dangerous' levels, says group

12/6/2007 By Ahmed ElAmin

*Bisphenol A (BPA), known as the 'gender bender' chemical, leaches into liquid baby formula from the linings of cans at levels dangerous to infant health, according to new research published yesterday by a US environmental group*

The Environmental Working Group (EWG) said the research reveals that Bisphenol-A, used to line nearly all infant formula cans, was found in at levels "far higher" in the product than those that leach from plastic bottles under normal use.

EWG had previously estimated that one out of every 16 infants fed ready-to-eat liquid formula are exposed to BPA at doses exceeding those that caused increased aggression and significant changes in testosterone levels in laboratory animals.

The new research adds to the mounting consumer fear over products packaged in containers with the chemical. Meanwhile, processors such as Nestle continue to resist removing the packaging additive from their products.

The EWG noted that previous studies showing that the packaging chemical leaches from plastic baby bottles into food had led many parents to switch to BPA-free bottles.

Now EWG claims the baby formula being put into the bottles also contains BPA, which has leached from the original cans the product was packaging in.

"Many parents have switched to BPA-free bottles for their infants," said Sonya Lunder, an EWG senior analyst. "US manufacturers of infant formula and baby bottles can and should do the right thing and remove this harmful chemical from their products."

Processors and can manufacturers have consistently stated that the chemical has not been shown by scientific studies to pose a health risk. Earlier this year the European Food Safety Authority (EFSA) set a maximum limit for human daily intakes of BPA, after assessing the evidence.

Setting a Tolerable Daily Intake (TDI) on BPA provides guidance on the use of the chemical to regulators and processors as this can be used as the basis for scientific risk assessments on whether it can be used, reduced or banned.

BPA is an additive widely used in plastic packaging and the resin linings of food cans, among other applications. Studies have found that the chemical migrates in small amounts into food and beverages from packaging containing the substance.

The EWA said it contacted company officials at Nestlé, Ross-Abbot (Similac), MeadJohnson, (Enfamil), Hain-Celestial (Earth's Best), and PBM, which sells formula under various names at Walmart, Kroger, Target and other stores.

Each company's policy was documented a minimum of three times, twice through phone interviews, and once by an e-mail questionnaire, the EWG stated.

The results reveal that all manufacturers use BPA to line the metal portions of all infant formula containers, including powdered varieties, EWG stated.

"There is mounting scientific evidence that BPA is toxic, especially to children," said Aaron Freeman, policy director with Environmental Defence Canada, which participated in the study. "Governments should be acting quickly, starting with a ban on BPA in food and beverage containers."

Citing previous formula testing by EWG and the Food and Drug Administration (FDA), the organisation said the evidence shows that BPA leaches from the plastic lining of metal cans into liquid formula, exposing formula-fed babies to potentially harmful concentrations that are higher than levels leaching from the bottles.

BPA levels in powdered formula sold in the US haven't been tested, but the formula is diluted with water before being fed to babies, and thus poses less risk to babies, EWG stated.

The EWG is a nonprofit research organisation based in Washington, DC.

Previous scientific research into the chemical has implicated BPA in disease or infant developmental problems. The chemical has long been known to act as an artificial estrogen, the primary hormone involved in female sexual development.

BPA has already been shown to increase breast cancer cell growth. In the January 2005 edition of the journal *Cancer Research*, a University of Cincinnati research team reported that it increased the growth of some prostate cancer cells as well.

Another study released this year by scientists at the same university also indicated that low doses of BPA can damage the development of young brains.

Warnings about other possible long-term health risks associated with fetal exposures to BPA have also been published in recent scientific literature.

BPA was first shown to be oestrogenic in 1938, in a study using rats. In a 1993 study BPA was found to be oestrogenic in the human breast cancer cell. Another 1995 study found that the liquid in some cans of tinned vegetables contained both BPA and the related chemical dimethyl bisphenol-A.

The highest levels of BPA were found in cans of peas. BPA was also found in the liquid from cans of artichokes, beans, mixed vegetables, corn and mushrooms. All liquids which contained BPA were found to be oestrogenic to a human breast cancer cell, scientists reported.

In 1997 researchers Fred vom Saal and others at the University of Missouri-Columbia concluded that BPA was harmful to humans and that its use should be banned. They noted that BPA is also used in the manufacture bottles, from which it leaches at an increasing rate as the bottle ages.

A study from a group of German researchers released in September provided the first direct evidence that human exposure to BPA in Europe is very low and is, at most, in a range similar to the levels reported in other parts of the world, according to a chemical industry site.

The research was sponsored by UBA (Umweltbundesamt), the German Federal Environment Agency.

BPA is used to manufacture polycarbonate, a rigid plastic used to make infant feeding bottles, plates, mugs, jugs, beakers, microwave oven ware and storage containers. It is also used in the production of the epoxy-phenolic resins that form internal protective linings for cans and metal lids. The resins are also used as coatings for water storage tanks and wine vats.

When the European Food Safety Authority (EFSA) set a maximum limit for human daily intakes of BPA in January this year, its stated that its scientific panel on food contact materials concluded that the setting of a full rather than a temporary TDI was needed, including a review of all available new data from the last five years.

Having considered both the pre-2002 and new studies available, the EFSA scientific panel concluded that the no-observed-adverse-effect level (NOAEL) of five milligram/kg body weight/day identified in the previous evaluation in 2002, remains valid.

The panel also concluded that reports of low-dose endocrine effects of BPA in rodents did not demonstrate such activity in ways that were "robust or reproducible".

"New studies have shown significant differences between humans and rodents, such as the fact that people metabolise and excrete BPA from their system far more quickly than rodents, further limiting the relevance of low-dose effects of BPA reported in some rodent studies for human risk assessment," EFSA stated.

"Studies have also shown that mice are particularly sensitive to oestrogens. Given that BPA is a weak oestrogen, the absence of adverse effects at 5 milligram/kg body weight and below in a new robust study on mice and two generations of their offspring adds further confidence to the risk assessment."

The EFSA scientific panel noted that conservative estimates of current daily exposure to the chemical put it at 30 per cent of the TDI in all population groups. "These exposure estimates include BPA migration into canned foods and into food in contact with PC table ware or storage receptacles," EFSA stated.

The estimates do not include either potential migration of BPA from receptacles into food during microwave heating or into drinking water due to the use of resins in water pipes and in water storage tanks.

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