



Polycarbonate Products

Lightweight, Shatter-resistant, and Accepted as Safe for Use by Worldwide Reviews

Polycarbonate products have been safely used by consumers for decades. Because it is lightweight and shatter-resistant, polycarbonate is used to make a wide variety of products ranging from CDs, cell phones and safety glasses to food contact products such as baby bottles, water bottles and food storage containers.

Q: Is polycarbonate plastic safe?

Polycarbonate plastic has been authorized for use in food contact applications by government agencies worldwide and has a 50 year safety track record. During that time, polycarbonate and BPA have been extensively studied and tested for health and safety by both manufacturers and government agencies. Such tests have demonstrated that consumer exposure to BPA poses only a negligible risk to human health.

Q: Does BPA leach from polycarbonate food containers?

During polycarbonate production, BPA is incorporated into the polymeric structure of the plastic. While there is some potential for trace amounts of BPA to migrate from polycarbonate, the level is far below safety-based standards set by government bodies such as the European Food Safety Authority (EFSA). In fact, the human body rapidly metabolizes and excretes BPA, and exposure to such low levels of BPA poses only a negligible health risk. The U.S. Food and Drug Administration (US FDA) and

other regulatory agencies worldwide authorize the use of polycarbonate in food contact applications.

Q: Why would I have heard about BPA?

There has been an ongoing debate about the hypothesis that some substances may disrupt natural hormonal systems and cause adverse health effects (“endocrine disruption”).

For BPA, this debate originated in the mid-1990’s with the publication of small-scale studies that reported reproductive and developmental effects from low doses of BPA. However, the effects were not found when those experiments were repeated by other researchers. Reproducibility is a hallmark of science; results that cannot be reproduced cannot be accepted as valid.

Many additional studies on BPA have since been published that vary in size, scope, quality, and relevance to human health. The weight of evidence from this extensive scientific database has been systematically evaluated by many scientific and government bodies worldwide. For example in 2004, an expert scientific panel was convened by the Harvard Center for Risk Analysis at the request of the plastics industry. After a comprehensive review, this panel of independent experts concluded that the weight of the evidence does not support claims of low-dose effects from BPA. Updated evaluations in 2006 and 2008 reached a similar conclusion after reviewing the most recent scientific data.

These scientific panel conclusions confirm what many government bodies worldwide have concluded upon review of the evidence: the “low-dose hypothesis” for BPA is just that – an unproven hypothesis – and low levels of BPA pose only a negligible risk to human health.

The endocrine disruption debate has led to many scare stories and urban myths suggesting that use of products made from polycarbonate may cause adverse health effects, including birth defects, sterility, premature puberty, genetic damage, and cancer. None of these adverse health claims have been proven, and extensive research conducted over almost 50 years of safe use provides strong reassurance that there is no scientific basis for human health concerns from exposure to low doses of BPA. Polycarbonate plastic is safe for use in consumer products.

Q: Where can I find more information?

Additional information about polycarbonate plastic and BPA is available at www.bisphenol-A.org. For further inquiries, please contact Dr. Steven G. Hentges of the Polycarbonate/BPA Global Group at 703.741.5588 or steve_hentges@americanchemistry.com.

Extensive research conducted over almost 50 years of safe use provides strong reassurance that there is no reliable scientific basis for human health concerns from exposure to low doses of BPA.

Weight of Scientific Evidence Supports the Safety of Bisphenol A

Government and scientific bodies worldwide have comprehensively evaluated the weight of scientific evidence and support the conclusion that bisphenol A poses only a negligible risk to human health at the extremely low levels to which consumers might be exposed.

2008

Low risk of BPA to human health was reaffirmed in an update to a **European Union** risk assessment. After critical review of the original 2003 assessment, the **Scientific Committee on Toxicity, Ecotoxicity and the Environment** stated “The CSTE agrees with the conclusion of the RAR [Risk Assessment Report] that there is no convincing evidence that low doses of bisphenol A have effects on developmental parameters in offspring.”

Health risk assessment from **NSF International** (a not-for-profit public health and safety organization) based a safe level in drinking water on the most robust data from multi-generation studies in laboratory animals; low-dose studies were not considered valid.

A 2004 scientific evaluation by an expert panel convened by the **Harvard Center for Risk Analysis** concluded “[T]he panel found no consistent affirmative evidence of low-dose BPA effects for any endpoint.” Updates in 2006 and 2008 reviewing the latest scientific information reaffirmed that conclusion, stating “[T]he weight of evidence does not support the hypothesis that low oral doses of BPA adversely affect human reproductive and developmental health.”

2007

The **US FDA** stated: “FDA has confidence that no safety concern exists for BPA in regulated food contact materials. Furthermore, FDA has determined that the use of polycarbonate-based baby bottles and BPA-based epoxy coated cans used to hold infant formula is safe.” This position was affirmed in a 2008 letter that FDA provided to the US Congress.

Key Studies that Support the Weight of Evidence

Bisphenol A is one of the best studied substances with a large scientific database available to assess human health concerns. Included are three large-scale studies that were specifically designed to look for reproductive and developmental effects at low doses over multiple generations. These robust studies, in mice and rats, were conducted in accordance with Good Laboratory Practices (GLP, the accepted quality standard for scientific research) and published in peer-reviewed journals. No adverse health effects from low doses of BPA were found in these studies.

An expert panel evaluation by the **Center for the Evaluation of Risks to Human Reproduction** (part of the US National Toxicology Program) found no serious or high level health concerns.

EFSA released a comprehensive scientific assessment from a panel of independent experts. The panel increased by a factor of five the safe intake level set by the **EU Scientific Committee on Food** in their 2002 assessment.

2006

The safety of polycarbonate baby bottles was affirmed by the **German Federal Institute for Risk Assessment** – “The BfR does not recognize any health risk for babies that are fed from baby bottles made of polycarbonate.”

2005

A comprehensive risk assessment by the **Japanese National Institute of Advanced Industrial Science and Technology** concluded “[C]urrent exposure levels of BPA will not pose any unacceptable risk to human health.”

Based on their own testing, the **Japanese Ministry of Environment** concluded that there were no clear endocrine disrupting effects found at low doses of BPA.

2001

A **National Toxicology Program** (NTP) scientific peer review of low-dose effects noted “the inability of other credible studies in several different laboratories to observe low dose effects of BPA, and the consistency of these negative studies [showing no reproductive or developmental effects from low-dose exposure].”