

Bisphenol A (BPA) Fact Sheet

Why is metal used globally to package food and drink?

Cans and containers with metal closures allow long-term ambient storage of food and drink. The advantages of rigid metal packaging for food and drink include:

- Safety - Metal allows the in-situ elimination of microbial contamination from the environment (by heat-treatment) and through its barrier properties this sterility is retained throughout its long shelf life.
- Quality - Cans preserve the quality and nutritional value of the food because metal provides a complete barrier to oxygen and light.
- Reducing food wastage - The intrinsic strength of metal makes it highly resistant to damage and therefore minimises losses during transport and storage. In general its long shelf life is a major contributor to reducing wastage in the supply chain.
- Recyclability - Metal packaging is infinitely recyclable without loss of quality or performance.

Why is metal used for food and drink packaging coated?

Most food and drink products are naturally aggressive to metals, which is why the majority of metal food packaging has an internal coating. This stops metal being picked up by the food and corrosion of the metal, both of which could lead to failure of the pack.

Why is BPA a component of these coatings?

The main component of a coating is an organic polymer - and this gives it its properties. Over years of research and development, epoxy polymers have been shown to give the best long-term performance in terms of protection of the food and drink and optimum manufacturability of the packaging. They have the best combination of properties, covering application, tooling resistance and flexibility, product and sterilisation resistance and freedom from taint amongst all the available technologies. Commercially available epoxy polymers contain BPA as a tiny unreacted residual.

National authority actions

Health Canada announced, in March 2008 with a two-year transition period, a ban on polycarbonate (PC) baby bottles which polymer has a BPA base. In 2010 France introduced legislation to ban the marketing of PC baby bottles and Denmark to ban the marketing of all BPA-based packaging specifically aimed at 0-3 year-olds. A small number of legislatures in USA are considering or have introduced bans of varying levels. The EU through Commission Directive 2011/8/EU will ban the marketing in EU countries of polycarbonate baby bottles from 1st June 2011.

Is the use of epoxy polymers in coatings considered safe?

The safety of BPA has been thoroughly evaluated by many authorities worldwide. Most recently, both the European Food Safety Authority (EFSA) and the World Health Organisation (WHO) have issued opinions based on reviews of up-to-date toxicological evidence. Neither opinion indicates cause for any action against BPA-based food contact materials and articles at the minute residual levels of BPA able to migrate into the food or the beverage.

The basis for the current European Union maximum permitted migration limit is EFSA's advised Tolerable Daily Intake (TDI) of 0.5 mg/kg bodyweight/day. This was first adopted in 2006 then reaffirmed after further reviews of available studies in July 2008 and September 2010, with no differentiation between young and adult consumers being made in any of the opinions. The European Commission has already added a further 'precautionary' safety factor of 5 in setting their Specific Migration Limit (SML) of 0.6 mg/kg (600 parts per billion), giving an overall 500 times safety factor over the scientifically determined No Observed Adverse Effect Level (NOAEL).

The World Health Organisation have just undertaken a review using thirty-one global toxicologists. Their summary report is available at: http://www.who.int/foodsafety/chem/chemicals/bisphenol_release/en/index.html. A full report will be issued in due course.

Quotations:

EFSA July 2008 - *".....the Panel considers that its previous risk assessment based on the overall NOAEL for effects in rats and using a default uncertainty factor of 100 can be considered as conservative for humans. The Panel concluded that the differences in age-dependent toxicokinetics of BPA in animals and humans would have no implication for the EFSA 2006 risk assessment of BPA"*.

US FDA January 2010 - *".....is not recommending that families change the use of infant formula or foods, as the benefit of a stable source of good nutrition outweighs the potential risk from BPA exposure"*.

AFFSA (French public health authority) February 2010 - *“toxicity studies performed in compliance with international standards have not so far demonstrated any risk to health at doses to which consumers are exposed”*.

Health Canada July 2010 - *“the current dietary exposure to BPA through food packaging is not expected to pose a health risk to the general population, including newborns and infants”*.

EFSA September 2010 - *“Following a detailed and comprehensive review of recent scientific literature and studies on the toxicity of bisphenol A at low doses, scientists on the European Food Safety Authority’s (EFSA) CEF Panel conclude they could not identify any new evidence which would lead them to revise the current Tolerable Daily Intake for BPA of 0.05 mg/kg body weight] set by EFSA in its 2006 opinion and re-confirmed in its 2008 opinion. The Panel also state that the data currently available do not provide convincing evidence of neurobehavioural toxicity of BPA”*.

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