



Let's share our experiences and questions on BPA replacement

There has been plenty of news about Bisphenol A replacement in recent months.

The risk assessment published by ANSES represents a step forward, enhancing our knowledge of sources of human exposure to BPA and the risks associated with such exposure. With regard to thermal paper, France has notified the ECHA of its intention to propose a Europe-wide ban on the use of BPA, and similar bans have recently been, or are in the process of being, implemented in Taiwan and California.

There has been a great deal of activity among industry players, with the subject of BPA covered **by the K Trade Fair for the plastics industry in Germany** (<http://www.k-tradefair.fr/>).

The French National Guidance Service on BPA Replacement offers you the opportunity to submit and share your questions, as well as your contributions and proposed solutions. It is a space where you can share your experiences of replacing Bisphenol-A-based plastics and resins for uses in contact with food products, whether you are a manufacturer, a vendor, or a user of these materials. Through the forum and in other ways, you can contribute to a wide-ranging, open and objective technical debate, which should help us all to find sustainable and effective replacement solutions.

Jean-Marc BRIGNON

Head of the "Economics and Decision-Making for the Environment" Unit, INERIS

BPA news

BPA REGULATION NEWS

France: Last April, the French Ministry for Ecology, Sustainable Development and Energy (MEDDE) announced its intention to propose a Europe-wide ban on BPA in thermal paper (till receipts, bank receipts, etc.). The French Agency for Food, Environmental and Occupational Health & Safety (ANSES) is responsible, in conjunction with INERIS, for preparing the dossier that will be submitted to the European Union. An ANSES study published in April 2013 indicates that the BPA in thermal paper passes through the cutaneous barrier. It therefore constitutes an additional source of human exposure to BPA and poses a risk for the unborn children of pregnant women who handle thermal paper, particularly in the course of their work (cashiers, etc.).

emissions into aquatic environments.

Source: <http://www.developpement-durable.gouv.fr/Vers-l-interdiction-du-bisphenol-A.html>

International: The US state of Connecticut is going to ban the sale of thermal paper containing BPA. This law is due to enter into force on 1 October 2013.

Source: <http://www.ncsl.org/issues-research/env-res/policy-update-on-state-restrictions-on-bisphenol-a.aspx>

In Taiwan, BPA has been banned in thermal paper since 10 January 2011. Following a study published in June 2012 indicating that 18% of thermal paper in Taiwan still contained BPA, the BSMI (Bureau of Standards, Metrology and Inspections) decided to check thermal paper for BPA content from December 2012.

Source: <http://chemicalwatch.com/11368/taiwan-to-analyse-thermal-paper-for-bisphenol-a>

In July 2013, California made it illegal for infant feeding bottles and beakers aimed at children under 3 to contain more than 0.1 ppm BPA. The state is encouraging the replacement of BPA with the least toxic alternative possible, and has prohibited its replacement with other substances that are carcinogenic or toxic for reproduction. Maryland has banned the sale and manufacture of baby milk packaging containing more than 0.5 ppm BPA from July 2014. The state had already banned BPA in infant feeding bottles and children's beakers in January 2012.

Source: <http://www.ncsl.org/issues-research/env-res/policy-update-on-state-restrictions-on-bisphenol-a.aspx>

BPA REPLACEMENT NEWS

German company ACTEGA has developed a new sealing film solution for the lids of glass jars and bottles. According to its producer, this range of resins, called PROVALIN, is made from TPE (thermoplastic elastomers) and contains no BPA, PVC, plasticiser or melamine. It is pasteurisation-resistant. This solution is already being used in the lids of Feinkost Dittmann's Mediterranean products in Germany.

Source: <http://www.actega.com/actega-ds-provalin/about-provalin.html>



Since 2012, Austrian company BOREALIS has offered a new grade of polypropylene, Borclear™ RC737MO, which offers comparable transparency and scratch resistance to polycarbonate (which contains BPA) when used in infant feeding bottles and cosmetics bottles.

Source: <http://www.borealisgroup.com/news-and-events/product-news/archive-2012/20120112RC737MObottles>

SNA FORUM NEWS

A laboratory from the University of Massachusetts, USA, has synthesised an epoxy resin using tetramethyl cyclobutane diol (CBD0) instead of BPA, and is now looking for partners to test this resin on an industrial scale in metallic food packaging applications. For further information, visit the [SNA BPA forum](#) and read the message from Prof. Daniel Schmidt (to read the message and contribute to the forum, you must first register).

Events

PACKOLOGY. Exhibition of Technologies for Packaging and Processing. June 2013. Italy. <http://www.eventseye.com/fairs/f-packology-17476-0.html>

VERPACKUNG AUSTRIA. Trade fair for innovative packaging solutions. June 2013. Austria. <http://www.eventseye.com/fairs/f-verpackung-austria-11841-0.html>

PACKINNOVE EUROPE. Business convention on packaging and wrapping technology. June 2013. France. <http://www.abe-packaging.com/packinnove-europe/accueil.html>

K. World trade fair for plastics and rubber. October 2013. Germany. <http://www.k-tradefair.fr/>

INERIS SURVEY

INERIS has launched a Europe-wide survey on the use of BPA in thermal paper (till receipts, etc.) and its possible alternatives. This survey followed the French Ministry for Ecology, Sustainable Development and Energy's announcement of its intention to propose a European regulation. If this issue affects you and you want to take part, please send an email to survey@ineris.fr.

Publications

In April 2013, ANSES published a review of the possible replacements for BPA in its different fields of application. The contents of the review are taken from a whole range of studies published on the subject, a call for contributions launched in September 2011, and an additional survey among industry players. The toxicity of the alternatives was not assessed, but serious doubt is expressed as to the harmlessness of compounds

utmost caution when replacing BPA with one of these compounds.

For polycarbonate food containers, the report indicates the emergence of new solutions such as Topas IT X1, developed by the company Topas Advanced Polymers GmbH, which is based on a block of styrene-ethylene/butadiene-styrene copolymers, or bio-sourced alternatives such as PLA (polylactic acid). This solution, however, has a fairly low temperature resistance.

As far as water canisters are concerned, the producer Greiner Packaging SAS considers Tritan® Copolyester to be the most probable alternative to polycarbonate. At the time of writing, this material was being tested by customers of the company, the only water canister producer in France.

With regard to the alternatives to epoxy resins containing BPA, the list of potential replacements has been lengthened by the emergence of Verdanol, produced by UK firm Verdex. This material is technically suited to use in drinks cans and food tins, but has not yet been approved for uses in contact with food by the US FDA. The bio-sourced resin UVL-Eco Resin is currently used as an alternative to epoxy resins in applications for sailing, and epoxy resins in which lignin replaces BPA are currently used in adhesives, but the report does not mention applications in the food industry. Finally, the SNFBM (the French union of metallic packaging producers) indicates that acrylic and the PVC Organosol are being tested as replacements for epoxy resins in metallic food packaging.

Water pipes may be lined with polyurethane resins, such as Kemica's Souplethane WP resin, which is authorised for such use by the CRECEP (a research centre specialising in water supply analysis) in France. Other resins are under development, such as the UV-cured single-compound SPR resins of the company Inventive Solutions, which had yet to be approved for this kind of use at the time of the study. A dossier on the subject of water pipe linings is available on the SNA BPA site (<http://www.ineris.fr/substitution-bpa/node/105>).

The report also presents BPS as the most commonly-used alternative to BPA in thermal paper, despite strong suspicions about its harmlessness and the fact that other substances could potentially be used. ANSES proposes the use of dot-matrix, inkjet or heat-transfer printers in order to avoid using BPA for this purpose.

Finally, the report indicates some alternatives to TBBPA (TetraBromoBisphenol A), used as a flame retardant.

The report also presents the regulatory toxicology classifications available in the literature on the alternatives cited.

In April 2013, ANSES also published the results of a study assessing the health risks posed by BPA. It indicated that 80% of human exposure to BPA is through food, half of it due to food tins. Canisters for water coolers may, in some cases, lead to significant exposure.

<http://www.anses.fr/fr/content/bisph%C3%A9nol-1%E2%80%99anses-met-en-%C3%A9vidence-des-risques-potentiels-pour-la-sant%C3%A9-et-confirme-la>