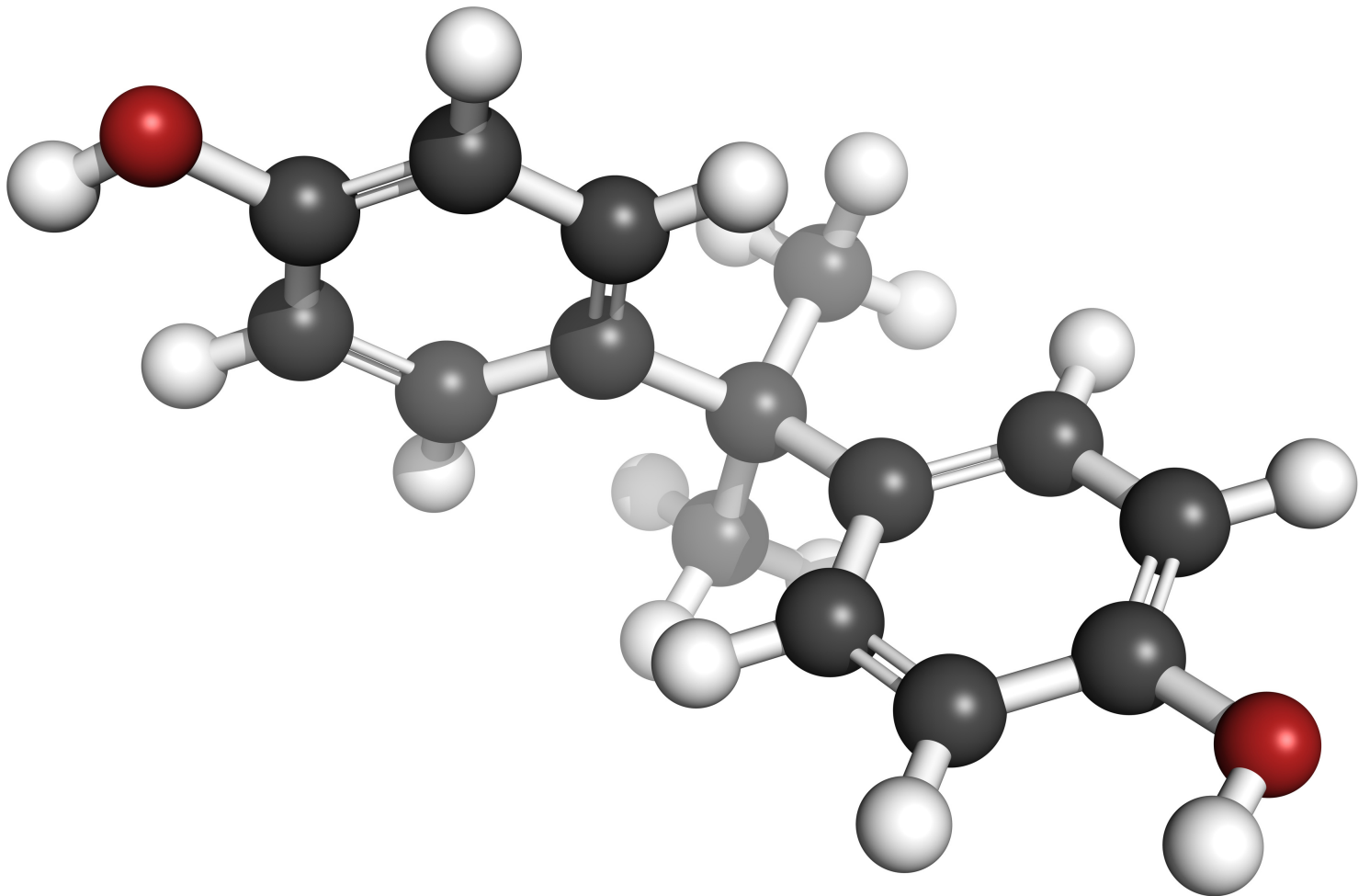




Netherlands Institute
for Sustainable Packaging

FACT SHEET

Bisphenol A in packaging



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Since the 1960s, the chemical Bisphenol A (BPA) has been used to manufacture plastics and resins. The European Chemicals Agency (ECHA) classifies BPA as a hazardous substance (1, sd). However, BPA can be used in packaging materials. How this can be done safely is explained in this fact sheet. The fact sheet provides information about the origin of the substance, for which applications BPA is used, what the possible food safety hazards are and which legal migration limits for BPA have been set.

What is Bisphenol A

BPA is used as a so-called starting material in - among others - (epoxy) resins and polycarbonate plastics. A starting material is a chemical that is converted into an end product during a reaction (during the production process). BPA in epoxy resins ensures that the material becomes flexible and can be used as a coating in, for example, cans. BPA in polycarbonate plastics, from which food containers are made, ensures that the plastic is transparent and can withstand high temperatures better than other types of plastic.

When used in food packaging, an excessive amount of BPA can migrate from the packaging to the food. Whether this poses a risk to people's health depends on the amount that passes into the food (2) (3, sd).

Applications in packaging and materials

Plastics

Products made of polycarbonate plastic that are used in the food sector are for example reusable plastic tableware such as cutlery, plates, cups and bowls, but also bottles for drinks. Examples of non-food materials that may contain BPA are medical devices such as IVs and catheters (2) (4).

Metal

Epoxy resins containing BPA are used to coat the inside of storage tanks and (water) pipes. Examples of a packaging material in which an epoxy resin is used are tin cans or the metal lid of a glass packaging. The inside of the can or the outer bottom of the metal lid of a glass container is

coated to prevent erosion. BPA serves to make the coating flexible, so that any cracks are prevented (2) (4).

Paper and cardboard

BPA has also been used to develop dye (inks) in thermal paper for receipts, public transport tickets and newspapers. Since January 2020 it is no longer allowed to market this within Europe. This application of BPA is not used in food (4).

Health

De European Food Safety Authority (EFSA) has established that a person may ingest 0.004 milligrams of BPA per kg of body weight per day (5). This is the temporary tolerable daily intake (t-TDI) that a person can consume every day for life, without this being bad for one's health. Excessive BPA intake may have harmful health effects. The EFSA reports that a very high dose of BPA (hundreds of times above the established daily intake) is likely to cause damage to the liver and/or kidneys. With current exposure through food, no health risk for BPA is expected. This also includes the release of BPA from the packaging material into the food. To keep this exposure within safe levels, limits have been drawn up per kilogram of product.

Migration Limits

The release of components of the packaging material into foods is called migration. The amount of material that is allowed to migrate from the material to the food is defined in migration limits. These are included in European legislation. The migration limits are based on EFSA risk assessments, based on available literature. Specific migration limits have also been set for BPA, so that exposure remains within safe levels.

For plastics, the limits are stated in Regulation (EU) 10/2011 Annex 1 (6). For the coatings, the limits are included in Regulation (EU) 2018/213 (7). A specific migration limit has been set for BPA at 0.05 mg per kilogram of product. The migration limits for Bisphenol A, like all other migration limits, also apply to packaging materials that use recycled materials (8, sd).

If the established migration limits are met, the packaging materials containing BPA can be used safely. In addition to the established limit, additional measures have been set for the use of BPA in food contact materials for infant formula. It is not permitted to use BPA for the manufacture of polycarbonate feeding bottles for infants. Nor is it permitted to use BPA for the manufacture of polycarbonate drinking cups or bottles, which are intended for infants and young children because of their leak-free properties.

Legislation

European Union

Packaging materials must comply with European legislation. The following legislation includes specific requirements regarding BPA in packaging materials:

- The European Regulation 10/2011 contains a list of permitted monomers and additives for the production of plastic food contact materials, including requirements for BPA. This legislation also contains migration limits and other restrictions [\(6\)](#).
- Regulation (EU) 2018/213 on the use of BPA in varnishes and coatings intended to come into contact with food.
- Regulation (EU) No 10/2011 on the use of BPA in plastic food contact materials [\(7\)](#).

EU member states national legislation

In addition to the applicable European legislation for BPA, there are EU Member States with national restrictions (Compliance Gate, 2020):

In Sweden, Denmark and Belgium there is national legislation restricting the use of BPA in food packaging materials for children aged 0-3 years.

France has legislation restricting the use of BPA in all food packaging materials that come into direct contact with food.

For these EU member states, the food packaging materials must comply with both European and national legislation. Producers have their own responsibility to comply with this. The other EU member states follow the European legislation, without further restrictions on the use of BPA.

Control measures

A producer of packaging material containing BPA must demonstrate compliance with the migration limits by means of adequate documentation (Supporting Documents). This can be demonstrated, for example, with a migration test.

The results of this must be stated in the so-called Declaration of Compliance (DoC). The DoC is a written statement showing that materials intended to come into contact with foods comply with legal requirements.

For example, the DoC contains information about the type of food intended to come into contact with the material, legislation with which the material complies, substances with specific migration requirements and the appropriate conditions of use. (8)

A buyer of packaging materials must assess whether the materials comply with the applicable migration limits. For this, the DoC of the packaging material can be checked for the presence of BPA. If BPA is included as a present substance, it must be stated that the specific migration limits are met. If this is not clear, ask the suppliers for additional information.

If you want packaging materials without BPA, you can discuss alternatives with the supplier. Alternative chemicals are available to replace BPA (European Chemicals Agency (ECHA), sd). However, the health effects of alternatives are often insufficiently researched and it is not known whether they are safer than BPA. Which alternative substance is suitable also depends on the application.

Interesting links

- [Bisphenol A | ECHA](#) (Background information)
- [Bisphenol A | EFSA](#) (Background information and developments EU)
- [BPA \(Bisphenol A\) | Voedingscentrum](#) (Background information)
- [Bisphenol A | Food packaging Forum](#) (Background information)

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KIDV fact sheets Food Safety

This fact sheet is part of a series of KIDV fact sheets on food safety. There are fact sheets on the following subjects:

- Mineral oils in packaging materials
- Bisphenol A in packaging materials
- Microplastics in packaging materials
- Heavy metals in packaging materials

- NIAS – Not-intentionally added substances
- Legislation on food contact materials

See also our [dossier page on Food Safety](#) on the KIDV website.