



Clearmark

/ Technology Insight

# BPA Guide

A guide to BPA and upcoming legislation



## A brief summary

### What you need to know

One of the most popular chemicals in the world, traditionally used in food packaging, thermal labels, toys, medical devices and 80% of metal cans has been linked to cancer by some scientists. Leading the EU to restrict the use of it from 2020.

Learn what BPA is, its history, debated links to cancer and how you can protect yourself and your business from the effects of BPA and upcoming legislation.

## Looking for more?

|  |       |       |
|--|-------|-------|
| <a href="#">What is BPA, and how is used in food packaging</a> | —     | 4-5   |
| <a href="#">New EU BPA regulations</a>                         | ————— | 6-7   |
| <a href="#">What does it mean for food manufacturers?</a>      | ————— | 8-9   |
| <a href="#">Replacing BPA</a>                                  | ————— | 10-11 |
| <a href="#">Get in touch</a>                                   | ————— | 12    |



## The chemical breakdown

Bisphenol A commonly known as BPA, is an organic synthetic compound which is widely used in the manufacturing of plastic; creating a tough, clear plastic that is widely used in the food and packaging industry.

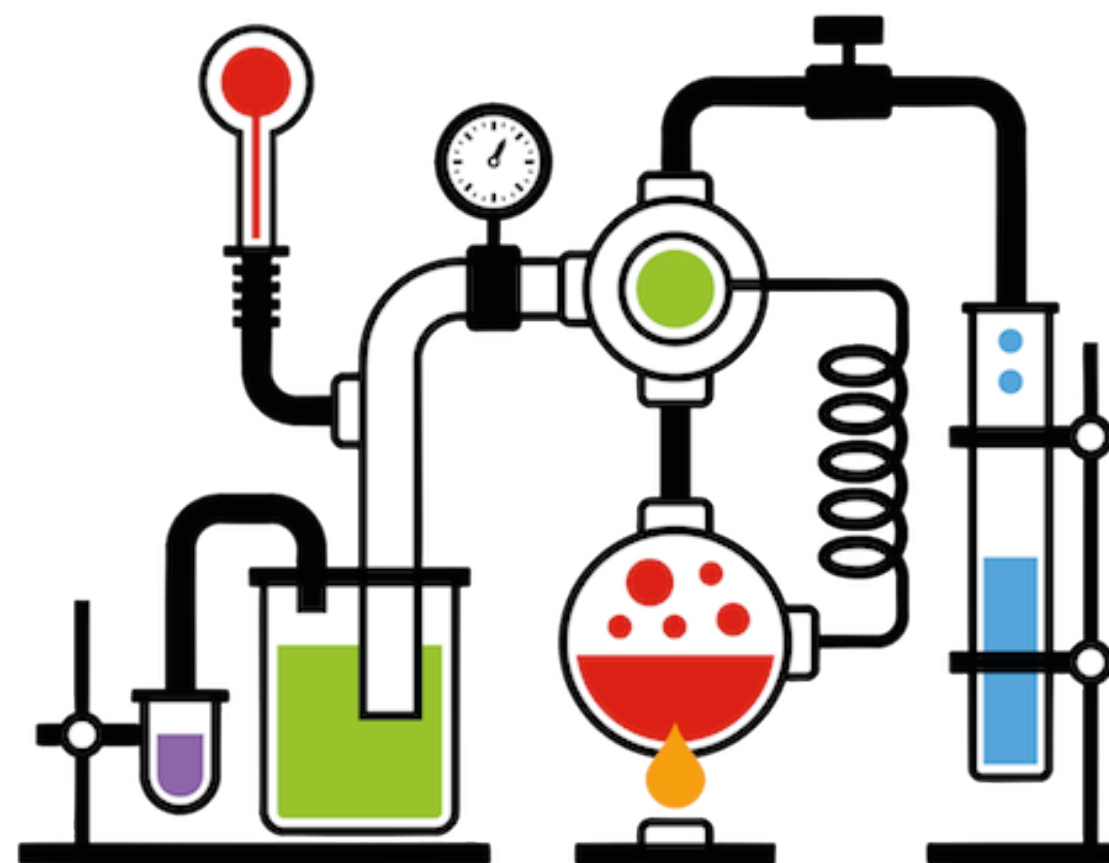
## What is it used in?

It is one of the most popular chemicals in the world and is created in vast quantities with an [estimated 3.63 billion kilos](#) created annually.

BPA is used in [thermal paper, CD cases, toys, medical devices and printer paper](#), and is used to coat the inside of many containers that are used to store food. For example BPA is used in many metal cans, bottle tops and until recently baby bottles.

## Cause for concern?

BPA chemicals can then seep into your food and drink, with the health effects of this [strongly disputed by scientists](#), with some saying it is harmless whilst others linking BPA to a number of diseases and cancers.



## Changes from 2020

The EU is to restrict the use of BPA in food packaging and thermal labels from January 2020, restricting BPA to 0.02% of thermal paper weight and previously limiting the amount of BPA that can be present in food to 0.05mg per kilo of food.



## Justification for the legislation

Both the [European Chemicals Agency \(ECHA\)](#) and [European Food Safety Authority \(EFSA\)](#) agree that there is evidence that BPA has endocrine disrupting properties which led to the decision to strictly limit its use in food contact areas such as food and drink packaging.

This led the [EU to ban the use of BPA in baby bottles](#) back in 2011, and it has recently extended that ban to further items.

In 2017 the [EU member countries unanimously decided to classify BPA](#) as a substance of very high concern due to the potential health impact and “probable serious effects to human health”.

## More detail on the legislation

Following this decision in February 2018 the EU decided to limit “[bisphenol A in varnishes and coatings intended to come into contact with food and in regards to the use of that substance in plastic food contact](#)”. This is now [limited to a maximum of 0.05 mg of BPA per kilo](#) of food allowed to transmit from the packaging into the food, which will severely restrict the use of BPA in metal cans and other food packaging.

## Further investigation

The EU is awaiting results from a BPA study in America and further advice from ESHA expected by the end of 2019, before making a further decision on whether to remove BPA from food packaging all together. [This decision should be adapted in early 2020](#).

Considering the popularity of BPA and its wide use this will have a significant impact on retailers, customers, packagers and food manufacturers, with some expecting significant price increases.



## Metal cans

Following much of the negative press and upcoming legislation many food manufacturers are rushing to replace BPA.

This will cause significant upheaval to the food and packaging industry as one of the most widely used chemicals worldwide looks set to be replaced. As of February [2018 80% of metal cans were lined with BPA](#) demonstrating the enormity of the task to go completely BPA free.

## Thermal papers

EU laws coming into effect at the beginning of 2020 will also require all thermal papers containing BPA to be used up by the end of the year as it is banned from January 2. These thermal papers are used in direct thermal transfer as the paper that changes colour when exposed to heat from the printhead.

Traditional thermal paper looks set to be replaced with BPA free thermal paper, which uses a phenol free chemical called BPS that is also proving to be controversial.

Packagers also have the option to replace their direct thermal printers with [thermal transfer printers](#) which do not use BPA or BPS as the printers print onto ribbon (which does not contain BPA or BPS) and is then transferred onto the product.

## Direct thermal costs

If packagers remain with direct thermal, switching from BPA thermal paper to BPS, it is expected to cause an increase in costs for packagers of an estimated 5% as the new materials are more expensive to source.



# Replacing BPA

## Similar chemicals

One solution for packagers is to replace thermal papers with BPA free thermal paper which uses a similar chemical called BPS. This has many similar properties, however the safeness of this chemical has also been called into question.

Whilst the EU wanted even more stringent regulations banning BPA, they accepted further research is needed into its potential replacements on their [safety and effectiveness before BPA can be completely replaced](#).

Although BPS is phenol free unlike BPA, research on rats has shown that when [exposed to low levels of BPS it affected their oestrogen](#) hormone similarly to BPA.

This led the [European Parliament in 2016](#) to state that “alternatives (to BPA) should not include bisphenol S (BPS) as a substitute for BPA, as BPS may have a toxicological profile similar to BPA.”

## Thermal transfer

However given the nature of thermal paper it may be tricky to find a replacement that can be as effective as BPA or BPS.

Therefore those looking to code onto their food packaging could potentially look to other alternatives such as [thermal transfer](#) which does not use thermal paper and consequently does not include any BPA or BPS, so is not a risk of being outlawed in the future.



# Get in touch

## About us

Established in 2001, Clearmark Solutions Ltd has become one of the UK's leading suppliers of digital coding solutions to a wide variety of end markets including; food and beverage, pharmaceutical, printing and DIY. Today, the company operates from two purpose-built head office buildings in Nottinghamshire.

Clearmark has a strong reputation for innovation in a variety of ICE coding and labelling technologies including; thermal transfer, thermal inkjet, large character marking, print and apply labelling.

Clearmark also custom design bespoke integration of all technologies providing the best possible Overall Equipment Effectiveness (OEE) to customers. This is all supported by comprehensive after-sales service and support. The company has a growing install base of over 2,000 customer sites.

## Give us a call, we're here to help:

 01159 640144

 [enquiries@uk.interactivecoding.com](mailto:enquiries@uk.interactivecoding.com)

 [www.interactivecoding.co.uk](http://www.interactivecoding.co.uk)

Clearmark Solutions Ltd  
Olympic House  
1 Willow Drive  
Sherwood Park  
Nottingham  
NG15 0DP



**Clearmark**