

The aim of the United Nations Stockholm Convention is to protect human health and the environment from persistent organic pollutants (POPs). However, we are also trying to move towards a circular economy where materials are recycled back into new products. There can be a conflict between these two aims if under the Stockholm Convention and Basel Convention very low limits are set for Persistent Organic Pollutants (POPs), which prevent products from ultimately being recycled. This is why the British Plastics Federation (BPF) is asking for realistic levels to be agreed, allowing products to be recycled back into long life products with minimal exposure risk for the public



Background

- Under the United Nations Stockholm Convention, chemicals are nominated as POPs and then investigated to see if they should be banned in products. If they are banned, a limit is set for Unintentional Trace Contamination (UTC), which is the trace level of that chemical allowed in any new products or articles.
- Once listed as a POP, the chemical is normally also listed under the Basel convention, which is focused on the movement and disposal of hazardous waste. This will also set a contaminant limit called the low POPs limit (LPL) and any waste above this will have to be treated as hazardous. This both adds to disposal costs and will mean restrictions on exports.
- When a POP is in a long-life product it will take time to become part of the recycling stream and by this point its minor chemical additives may technically render it 'hazardous'.

Products containing POPs may not be able to be recycled.

Concern for recyclers

- Stockholm Convention – if the levels set for unintentional trace contaminations (UTC) are too low then this will prevent recyclers from being able to sell back their material for use in new products.
- Basel Convention – if a low POPs limit is set within a waste stream, the waste may be classified as hazardous and therefore restrict the disposal options available. Very low limits would also mean that material would need to be externally tested for specific UTCs rather than using quicker, more general tests (i.e. X-ray fluorescence (XRF)) that recyclers can do themselves (e.g. XRF can notify you of general bromine content but not whether your waste contains specific bromine-related POPs). This may ultimately make it economically unviable to recycle these products and in effect produce more waste whilst eliminating recycling opportunities

What does this mean for the Circular Economy?

- If low levels are set under the Stockholm Convention and Basel Convention for a particular POP, then any product containing this chemical may not be able to be recycled and can therefore not become part of the Circular Economy. Although reduction of hazardous chemicals in the environment is desirable, pragmatism and risk assessment must be utilized to ensure that long-life, low-exposure applications of POP-containing products can continue to contribute towards a truly circular economy whilst steadily reducing the presence (and subsequently the potential impact) of hazardous chemicals.

Action needed

- Sensible levels should be set for restricted POPs under the Stockholm convention to maintain access to this market for recycled plastics. 1000ppm, as per REACH requirements, is realistic. If a POP is no longer being produced the level will naturally reduce in recycle as well over time.
- Sensible levels should be set under the Basel Convention to prevent waste from having to be treated as hazardous — in particular relation to REACH/Stockholm convention, this ensures that something that is not hazardous as a product does not then become 'hazardous' as waste.
- There are end markets for recycle containing POPs that would leave it safely locked in a polymer matrix, away from humans, which would therefore present a minimal risk. These exposure risks, as well as the length of application and ability to recover the product, should always be considered to ensure support and growth for the circular economy.

Example - DecaDBE

DecaDBE is a flame retardant that was widely used in electrical and electronic goods, in vehicles and in some textiles and fabric. Under the UN Stockholm Convention it was added as a POP to be eradicated in 2017. The level of UTC for this is currently being set.

As it was such a widely used flame retardant, if the limit suggested is too low it will prevent a significant amount of material from being recycled and could put some recyclers out of business.

Under REACH, recyclers have a 1000ppm limit for hazardous contaminants and this would be also be a sensible level to set under the Stockholm Convention.

Furthermore, decaBDE itself does not pose an environmental risk (rather the potential degradation of products after its breakdown). It is also present in applications that are easily recoverable and therefore present a very low risk to consumers, the environment and workers. Due to its restrictions in new products, we would see a reduction in decaBDE content in recycle anyway, which would allow for recycling to occur as well as the ultimate eradication of this POP.