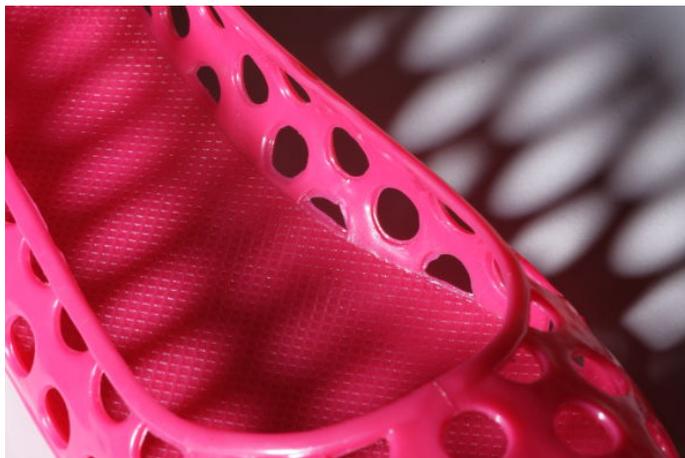


## Phthalate restrictions update

From July 2020, four phthalate plasticisers will be restricted in Europe in all articles under REACH.

by Martin Heels



Phthalates are chemical plasticisers that are added to plastic formulations to change the flexibility and durability of the final plastic. They alter the physical properties of the plastics by weakening the bonds between the polymer chains so they are not as tightly bonded to each other, which results in increased flexibility. Phthalates are commonly used to soften polyvinyl chloride (PVC), combatting the naturally very rigid and hard properties of unplasticised PVC to create a much softer and malleable final material. Their use is not only confined to PVC, as polyurethane (PU), paint, inks and adhesives can also contain phthalate plasticisers. Footwear solings, coatings in leathers and coated textiles are the key components where this updated restriction will be applicable, so companies in the footwear supply chain must be aware of the imminent implementation date of this legislation.

Phthalates are applied to many products, including polymeric footwear solings, plastic packaging and children's toys. The presence of phthalates in these types of products raises concerns as although most phthalates are not classified as harmful, there are four that have been identified under REACH as posing an unacceptable risk to human health. This is due to their endocrine damaging properties: causing a change in hormone levels which can harm unborn children.

Humans can also be exposed to these phthalates through various other routes, the most concerning being ingestion. This makes infants more at risk of being exposed due to their hand-to-mouth behaviour. This is why the previous phthalates entry in REACH (Regulation (EC) No 1907/2006 Annex XVII entry 51 outlined restrictions on toys and childcare items only. However, as a result of more research data this is no longer the case as it has been identified that exposure to these phthalates can be through a number of different routes of exposure, and that children are no longer the only ones considered to be at risk.

### Changes to entry 51

In December 2018, the EU Commission published an amendment to the restriction of three phthalates (DEHP, BBP and DBP – see table 1) under entry 51 of REACH Annex XVII in the Official Journal of the European Union as new information had been gathered by the Committee for Risk Assessment (RAC) and The Committee for Socio-Economic Analysis (SEAC) in support of an amendment. This research stated that not only does exposure occur through ingestion but also via prolonged contact with skin and inhalation of air in indoor environments. They stated that there was a risk not only for the consumer but also the worker; therefore, the European Chemical Agency (ECHA) decided to widen the scope and amend the scope of the REACH restriction from plasticised toys or childcare article to any article containing plasticised materials.

Phthalate	Acronym	CAS number	Restrictions
Bis (2-ethylhexyl) phthalate	DEHP	117-81-7	No greater than 0.1 per cent by mass of plasticised material in articles
Dibutyl phthalate	DBP	84-74-2	
Benzyl butyl phthalate	BBP	85-68-7	
Di-isobutyl phthalate	DIBP	84-69-5	

Another key change was to add an additional phthalate to the list, DIBP. RAC stated that this phthalate has a similar hazard profile to that of DEHP, BBP and DBP, so DIBP could be used to as a substitute for DBP therefore it should be subject to the same restrictions. The amendment to REACH Annex XVII did not come into force immediately when the Regulation was published, instead articles should not contain DIBP, DEHP, BBP or DBP at 0.1 per cent or above by mass after the 7th July 2020. The article should not be placed on the market if either the individual concentration of each phthalate, or the sum of the four phthalates in the plasticised material is greater than 0.1 per cent.

How can we help?
SATRA offers a range of services that include testing products to ensure that they comply with REACH. We have an ISO 17025-accredited laboratory with state-of-the-art instruments and a knowledgeable team able to assist on any testing or queries you may have regarding these changes. Please email <a href="mailto:chemistry@satra.com">chemistry@satra.com</a> for further information.

Publishing Data

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