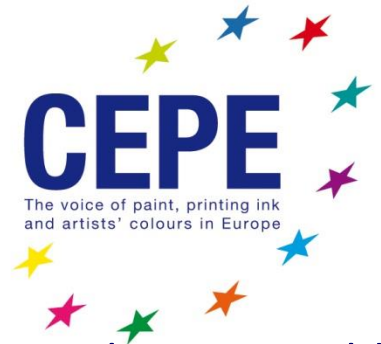


• Situation of Microplastics and Paints



Microplastics and paints



With regard to mixtures such as paints the issue of microplastics would appear in two forms according to the sources where they may emit from.

The source being:

- **the paint in its *fluid* form**; from which the intentionally added microplastic (or microbead (fully polymer)) would be separated and found back in waters as the original (pristine) microplastic. A.k.a. 'primary microplastic'

or

- **the 'wear and tear' of the *dried* paint**; where during the use phase small particles (partly polymeric structures and other materials) would find a pathway to water. These are being known as 'secondary microplastics'.

**Intentionally added microplastics
in Paints for consumer and
professional use.**

ECHA, Helsinki
May 30, 2018

Use

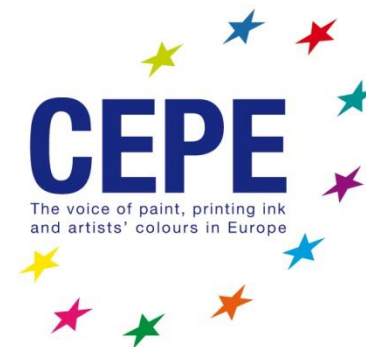


The use is with Water Borne (WB) building paints. Whereby the intentionally added microplastics:

- only are used for a small part (< 1 %) of the volume of the portfolio of Decorative waterborne paints.
- only make up <2% of weight of the paint composition ('additive' category).

Note: the use in solvent borne paints is not relevant while no emission route to water is opportune.

Identity of intentionally added MPs in paints



Microplastic	Polymer (non-soluble)	Size distribution	Melting point C	Density Kg/ L
Bead or sphere (hollow)	Polyacrylic	5 till 80 microns (> 90% of the weight)	Approx. 200.	0.200
Fibre	Polyacrylic	Length: 4 till 6 mm Diameter: 30 microns	190--240	1.150
Fibre	Polyamide	Length 4 till 50 mm, Diameter 10 microns	Approx. 250	1.140
Fibre	Polyacrylonitrile	Length: 0.5 mm Diameter: 30 microns	Approx. 250	1.180

Function



The addition of these micro-plastics in Waterborne building paints is done to obtain:

With microspheres:

- Weight reduction of the paint contents
- Ease of paint application; thicker layers
- Unique dried paint properties like elasticity, scratch resistance

With microfibers:

- Toughness of the applied coating
- Bridging cracks and seams in walls or ceilings
- Increasing the thixotropy of the wet paint

Pathways for release



WB paints (like all other paints) are intended to protect and decorate substrates and their release to water is not intentionally.

Potential release may occur when a consumer habitually cleans his brush or roller with tap water - estimated emission 1.0% (Reference: CEPE's Specific Emission Release Categories).

Estimated size of such emission volume:

No more than 2 to 3 Tonnes / annum from the relevant volume of WB decorative coatings in Europe.

- *Note: brushes and rollers for solvent based paints cannot be cleaned with water.*

Alternatives



Not using the microplastics at all would lead to:

- more maintenance paint cycles (=more paint volume).

Non-desirable from the point of sustainability.

Alternatives



For replacing plastic beads:

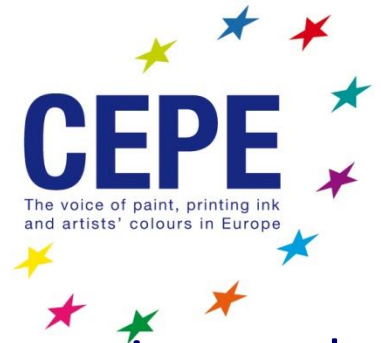
- Glass beads
- Cellulose based beads

For replacing plastic fibres:

- Natural materials e.g. Cotton fibres

Alternatives would be most probably only be partial solutions and not cover the spectrum of properties as with the plastic ones.

Alternatives



The mentioned alternatives are untested alternatives and would need to be incorporated into new formulations and then evaluated for each application to see if no impaired properties would come out.

Reformulating till the same technical level is achieved involves product development and customer evaluation for which it is not unusual to take a period of at least 2 years before a product is ready for sale.

Impacts of restriction



Product Category: Waterborne building paints.

When no good working alternatives available it would mean a reduction in choice of some special paint characteristics as mentioned under answer 3.

Important unknowns



CEPE is at this moment not aware of any studies on marine pollution whereby the found microplastics could be linked to the intentionally added micro-plastics that find their use in WB paints.

From what level upwards would an exposure to intentionally added microplastics have an adverse effect on organisms.

Key message



For PAINT concerning intentionally added microplastics:

Very small use in paints and hardly any emissions from paints.

This gives a final estimated emission volume of no more than 2 to 3 Tonnes / annum from decorative coatings. This raises the question if any restriction on the uses of intentionally added micro-plastics should include the use in waterborne paints.

Intentionally added MPs in paints



Any questions?