

Microplastics in printing inks and printed products

In September 2023, the European Commission published measures to restrict intentionally-added microplastics using the term synthetic polymer microparticles. Regulation (EU) 2023/2055, amending Annex XVII of the REACH Regulation (EC) No 1907/2006, prohibits the sale of certain microplastics and products to which they have been added on purpose. The adopted restriction uses a broad definition – it covers all synthetic polymer microparticles below five millimetres that are organic, insoluble and not biodegradable.

In the manufacture of certain printing inks and printing varnishes (especially water-based products), polymer dispersions and certain additives are used, which may possibly fall under the definition of microplastics used in this new Regulation. These polymers serve as film-forming components of the binder, or as waxes (e.g. polyethylene waxes) imparting mechanical resistance to the dried ink or varnish film, or as other additives performing other important functions. There are clear obligations within the legislation for different actors up and down the supply chain to provide information (use instructions, concentration, etc.) and to report on possible emissions in the coming years (from 2026 onwards).

Printing inks and varnishes are derogated (exempt) from the sales ban (according to paragraph 4(a) of the Regulation) as they are exclusively used at industrial sites. Moreover, they are manufactured in industrial installations, which already implement systems and procedures, as required by law, aimed at preventing the release of contaminants into the environment.

When printing inks, printing varnishes or printed products are used as intended and properly processed, no synthetic polymer microparticles are intentionally released from the final film, which is formed by the drying of the inks or varnish. The final layer of ink or varnish does not fall under the microplastics definition. This fact holds true also for any glitter effect materials of synthetic origin which may be used in very rare and specific cases in printing ink applications to achieve a desired special effect.

Printing inks, printing varnishes (like all industrial mixtures), as well as printed products are not intended to enter wastewater systems. At the end of the life cycle of printed articles, they have to be recycled or disposed of properly, within the legal framework established in the European Union and/or in the Member States. Proper disposal processes for residual ink waste are in use to prevent the release of microplastics from printing inks or varnishes into the environment.

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