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Microplastics

WHAT ARE AND WHY ARE SO POPULAR?

In the last months there was a lot of buzz around microplastics: the name already suggests small fragments of polymeric material. But exactly what are microplastics and why are so widespread?

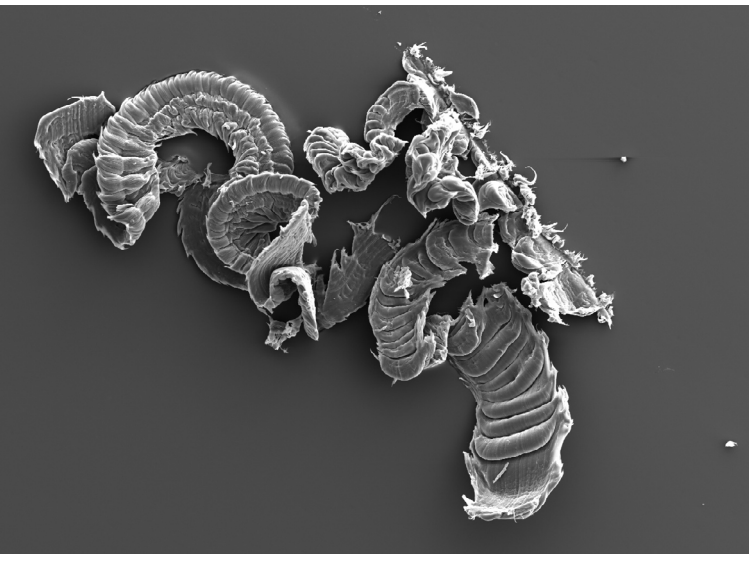
Microplastics are defined as polymeric particles with dimensions generally less than 5 mm; it can have different origins, according to which it can be classified primary or secondary microplastics.

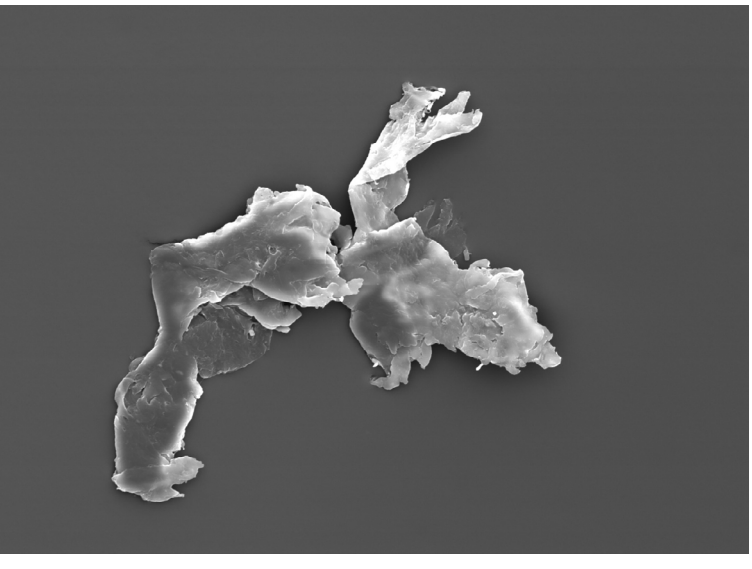
Primary microplastics are microplastics released directly into the environment and constitutes between 15% and 31% of the microplastics present in the oceans. Among main recognized sources there are microplastics intentionally added in products for *cosmetic use (about 2%); abrasion of tires while driving (about 28%) and washing of synthetic garments (about 35%)*.*

On the other hand, secondary microplastics are particles originated from the processes of wear and deterioration of various objects and structures, and this typology represents *between 68% and 81% of microplastics in the oceans**.

Thanks to water washout, wind transport and different ways of diffusion, microplastics contamination is now extremely widespread and there are several studies that demonstrate the accumulation of this kind along food chain.

**data from the European Parliament portal*





As reported by ECHA (European Chemical Agency) microplastics are intentionally added in many products such as plant protection products, cosmetic products, household and industrial detergents as well as paints and other products for industrial use.

It is estimated that about 50,000 tons of microplastics are used in the European Union every year, of which 42,000 tons are released into the environment. The contribution of secondary microplastics must also be added to this value.

Despite these numbers, to combat plastics and microplastics contamination, there are numerous worktables at European and International level that aim to limit the intentional addition of microplastics, to reduce the use of plastics and to push towards the use of alternative materials.

From an analytical point of view, there are different information that can be helpful in the study of the microplastics:

- **Quantity of microplastics: this information is of primary interest in the study of the contamination and in terms of release from devices under investigation**
- **Dimension of microplastics: this particles characteristic can support the evaluation of the origin and the possible blast chilling technology**
- **Composition: using state-of-art analytical instrumentation is possible to reach information on the typology of the polymer which originated the microplastics**
- **Particle shape: since the morphology of the particles, it is possible to observe filaments, scales, splinters and other structures**

Labanalysis and Laser Lab laboratories are active in the research and typification of microplastics as a contamination phenomenon in different matrices, it is also possible to create ad hoc protocols for monitoring the potential release by food and catering equipment.

If you are interested in our services and receive more information, please write to

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