How Microplastics / Nanoplastics Are Calculated Using Standard Lab Methods

Particle count is not directly measured; it is derived on assumed spherical bead size.

Water samples are collected and transported to a laboratory, where particles are isolated through filtration and centrifugation (spinning down). The resulting plastic pellet represents the total recovered mass used for downstream analysis.

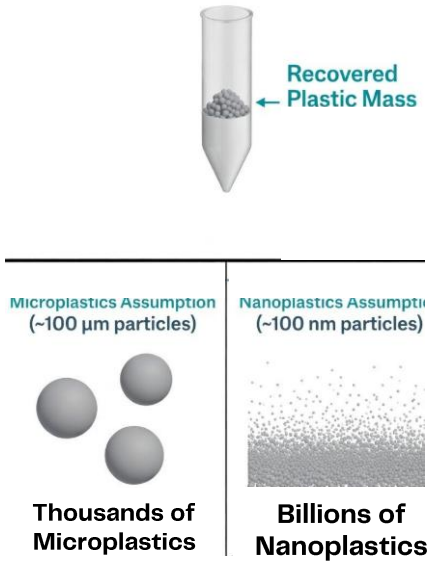
In most workflows**, particle counts are not directly measured.** Instead, they are **estimated from total recovered mass using assumptions** about particle size, geometry, and material density.

Because particle volume scales with the cube of diameter, small changes in assumed particle size produce exponential differences in estimated particle count.

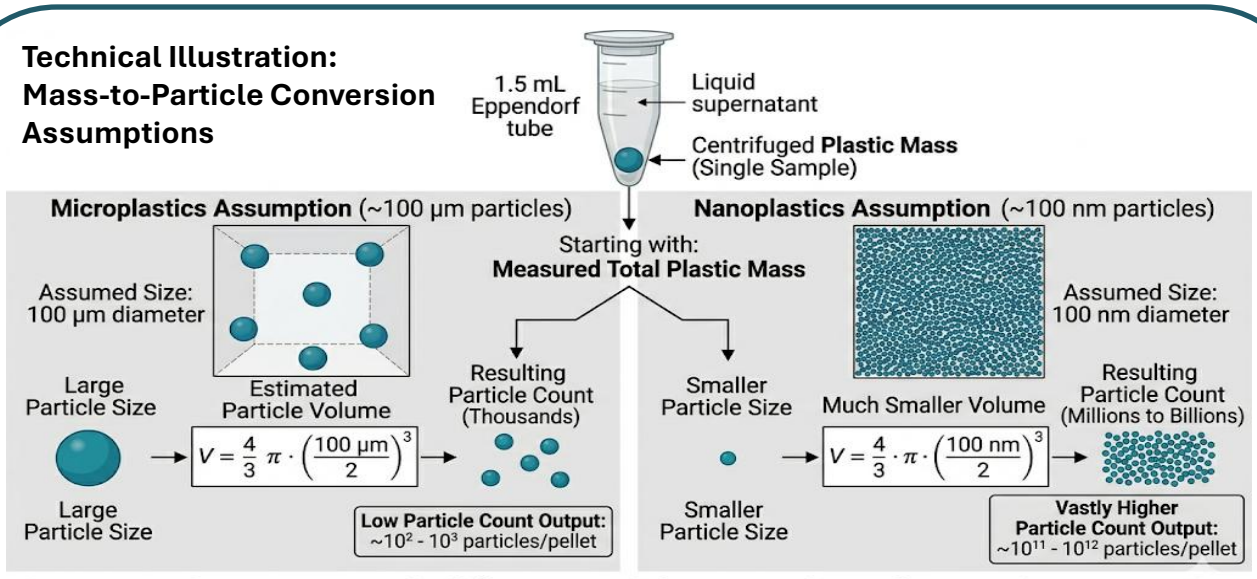
As a result, the same sample mass can be reported as thousands of microplastic particles or millions to billions of nanoplastic particles, depending on the size assumption used.

Note: Standard laboratory calculations typically assume spherical particle geometry. However, real-world microplastics and nanoplastics are often irregular fragments, which introduces additional uncertainty in particle count estimation.

Same sample → vastly different particle counts



Technical Illustration: Mass-to-Particle Conversion Assumptions



Same sample mass → vastly different particle counts depending on size assumption

In contrast, EcoExposure™ detects microplastics/nanoplastics directly in water samples.