

{rokbox title=| Annual consumption of processed bivalve molluscs (dried, frozen, salted or in brine) per region according to EUMOFA (2023) :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-microplastic-contamination-ready-deudero-2025-thumb-et-al.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-microplastic-contamination-ready-deudero-2025-et-al.jpg{/rokbox}

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[Microplastic Contamination from Ready-to-Cook Clams: Implications for Food Safety and Human Exposure](#)

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Abstract: Microplastic contamination in seafood has emerged as a significant concern for public health and food safety. Bivalve molluscs are especially vulnerable because of their filter-feeding behaviour, leading to the accumulation of different substances in seawater, including contaminants like microplastics. This study examines microplastic contamination by comparing commercially available ready-to-cook frozen and deep-frozen clams, assessing particle morphologies, dimensions, colours, and chemical identities. The Polymer Hazard Index (PHI) derived from the proportions of polymers in the samples and their hazard scores, whereas the Estimated Average Daily Intake (EADI) was determined based on per capita consumption and microplastic counts. The results indicated a significantly higher prevalence of microplastics in deep-frozen clams compared to frozen clams, with 2.58 ± 0.87 and 0.43 ± 0.13 , respectively. EADI was estimated at 0.47 and 0.76 MP/kg(bw)/day for deep-frozen clams and frozen clams, respectively (before cooking). Our findings highlight the influence of industrial processing on microplastic contamination, other than the environmental contribution, with considerable implications for human exposure, underscoring the necessity for monitoring initiatives and regulatory policies to reduce microplastic exposure in seafood, thereby safeguarding food safety and public health.

Keywords: microplastics, ready-to-cook seafood, food safety, public health, risk assessment.