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Plastic Waste Reduction through Standards

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Abstract

Standards are one way to address the issues caused by plastic pollution. Standards can help to drive the transition to a circular economy for plastic resources by addressing quality and safety as well as information and measurement, reducing variety and increasing compatibility. The goal of this work was to categorise existing plastic standards within a circular economy framework, identify potential gaps, and highlight areas for future standards development. 95 plastic standards were identified using desktop research on existing standards, only 9 of which are Australian standards. The majority of the standards address recycling as well as compostable or biodegradable plastics. There are numerous opportunities to create standards for higher levels of the plastics waste hierarchy, such as design and reuse.

Keywords: Pollution• Specifications • Standards • Debris

Introduction

Plastic pollution has clearly demonstrated its negative effects on wildlife, the economy, and the environment. As evidenced by the treaty signed at UNEA 5, there is widespread recognition that plastic pollution is a global issue. Solving the problem will necessitate a multilateral approach involving a variety of interventions throughout the supply chain. The implementation of standards is one component of this multifaceted approach that has been shown to be effective. A standard, according to the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), is a "document established by consensus and approved by a recognised body, that provides, for common and repeated use, rules, guidelines, or characteristics for activities or their results, aimed at achieving the optimum degree.

Literature Review

Standards are significant guidelines and codes of practise that are widely implemented by industry and communities on the basis of consensus, balance, and transparency. Standards can benefit society and the economy in a variety of ways, including increased safety, reduced information asymmetry, increased international trade, and improved technology interoperability. Standards can help to identify, solve, and alleviate environmental issues, as well as promote good environmental management practise, either directly or indirectly.

For example, the ISO 14000 series: Environmental Management provides companies and organisations with standards and practical tools to help them manage their environmental responsibilities. Standards can assist governments and policymakers in setting and meeting ambitious commitments to reduce plastic waste by providing relevant guidance, frameworks, and specifications that aid in the assessment of the plastic life cycle and the growth of the market for recyclable and reusable products. Terminology and classification standards, for example, can improve communication, improve information exchange, and facilitate trade among market participants. It is critical to use a common and agreed-upon set of terminology to ensure consistency and reduce confusion for consumers and industry. Information and characterisation standards define various types of plastics and reduce information asymmetry.

Discussion

Methods and measurements Standards can help to spread knowledge by describing the sampling and testing requirements for measuring the environmental and sustainability aspects of plastics. Life cycle assessment standards provide a tool for evaluating the resource efficiency and eco-efficiency of products and organizations, as well as increasing productivity and market efficiency. Quality standards can boost consumer trust and social acceptance of recycled products. They can also improve knowledge diffusion, scale economies, and the infrastructure for low-cost recycling plastics, As a result, standards should be considered as part of the solution to plastics issues. This entails a substantial investment in the development and implementation of standards that address the challenges and requirements of transitioning from the production and consumption of products with low recyclability and reuse potential (such as single-use plastics) to a market with recyclable and reusable products. Given the potential role of standards in the plastic waste reduction campaign, we characterised the existing standards landscape to understand how Australia's current standard deployment compares internationally and to identify opportunities to implement new standards [1-5].

Conclusion

When viewed through a circular economy lens, the majority of existing plastic standards fall within the value chain segments of recycling and recovery/disposal. There are very few early segment standards, such as design or feedstock/raw materials. There are a few standards designated as fitting secondary within the design category, but these primarily concern how to design a product that will be compostable or used for waste to energy. Plastics standards are still relegated to the bottom of the waste hierarchy as a result of this. While standards aimed at avoiding, reducing, or reusing waste could theoretically be applied in the manufacturing context, the standards we see in this space most commonly cover test requirements and labeling. Nonetheless, the total number.

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Conflict of Interest

There are no conflicts of interest by author.

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