International

ISO 6608-1

# Active and intelligent packaging —

# Part 1: General requirements and specifications of active packaging

*Emballage actif et intelligent —*

*Partie 1: Exigences et spécifications générales relatives à l'emballage actif*

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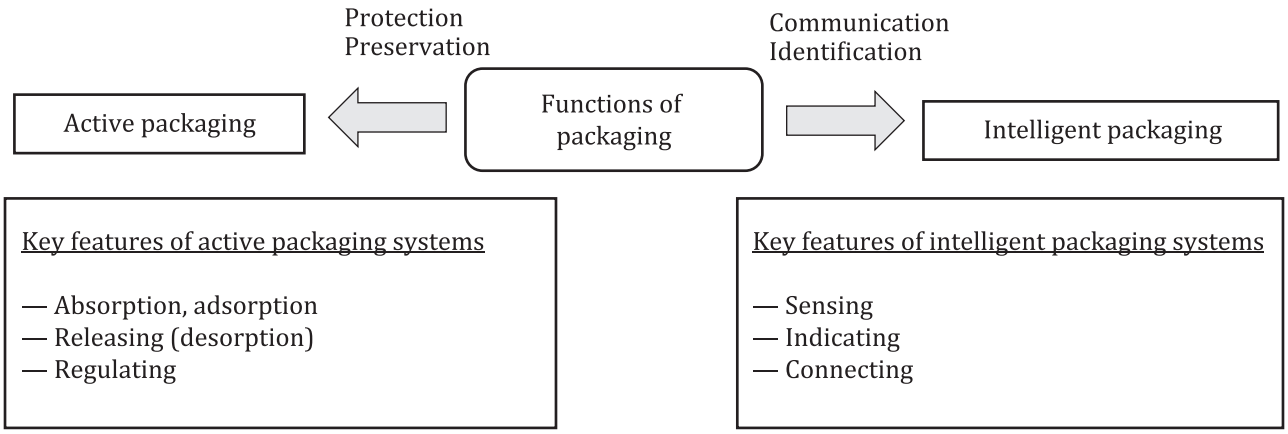
Active and intelligent packaging, frequently referred to as “smart” packaging, is evolving technology that can enhance preservation of contained products and communicate effectively to distributors and users. “Smart packaging” is a general term to describe a large category of packaging that leverages technology to provide enhanced functionality that goes beyond simply housing a product.

The role of active packaging and intelligent packaging is different. Active packaging is intended to sense internal or external environmental change and to respond by changing its own properties or attributes and hence the internal package environment. Intelligent packaging does not change or influence the contained products but is capable of providing information on the conditions of the packaged products. In general, the main function of active packaging is to extend the shelf life of a product while that of intelligent packaging is communication and identification.




As materials and communication technologies advance, more products and packaging involve active, intelligent packaging to enhance the product and user experience it contains. The main industrial sectors are food and beverages, but it is also applied to a variety of product packaging.

From a regulatory perspective, active and intelligent packaging is not subject to any special regulations in many countries, but there are general concerns regarding safety, especially on food contact materials. European regulation (EC) No 1935/2004, concerning a declaration of compliance and the availability of appropriate documentation, states that any active and intelligent material shall provide that the material is safe to be used in contact with food under specified conditions of contact.

Active and intelligent packaging (AIP) helps to optimize for transport and efficiency in logistics by providing interactive and accurate supply chain information. AIP is useful for improving safety and security of perishable and temper sensitive products such as vaccine and pharmaceutical industry. It helps companies in branding and marketing advantages. Ultimately, this technology helps to minimize the packaging and product waste by reducing unnecessary resources and product spoilage during distribution process. This document is intended to be used effectively in the development and use of related products in the future.