OUR VIEW

Institute of Packaging Professionals®

THE STATUS OF RIGID PACKAGING

Rigid packaging must protect the medical device that it encloses, so that the user has confidence in the product.

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The medical device industry requires rigid packaging with specific characteristics, based upon tight specifications, due to the sensitivity of most medical devices and how they must be protected and packaged according to industry standards.

Some of the physical properties required in packaging are: transparency, stiffness, resistance to impact and puncture, resistance to shatter and stress, low absorption of water, high impermeability to gas transmission and water vapor and the ability to be thermoformed or extruded without difficulty.

Some of the chemical properties required in a rigid package are: chemical resistance, oil and grease resistance, minimum use of plasticizer in formulation and a minimum amount of release agents and possible silicon coatings.

STERILIZATION

The rigid medical package must have the ability to withstand various types of sterilization procedures to prevent the potential for physical or chemical degradation of the product or package. The method used depends upon the materials used in the fabrication of the package and the polymers used in the construction of the medical device.

The various polymeric materials used for medical packaging must be carefully tested, and a review of the polymer specifications is mandatory to prevent future problems. All phases of development of the package must be carefully monitored, so that the finished package can meet the protocol of federal regulations. Non-polymeric materials must also go through the same scrutiny and meet certain standards.

Many new polymers are used for rigid medical packaging. For example, a new acrylic-based multi-polymer can be thermoformed and extruded (with minimum difficulty in processing) into a variety of configurations, with the objective of creating a high-integrity, defect-free, rigid medical package.

ALUMINUM TRAYS

Aluminum smooth wall containers have come into their own as an ideal rigid package to enclose various medical devices. Aluminum offers a high degree of protection, so that less material is required. Aluminum, which is 100 percent recyclable, can be recycled and used many times over, without degrading or reducing the quality of the material.

The aluminum package has an extremely low oxygen transmission rate and almost a zero percent moisture vapor transmission rate. It can also be designed into various configurations and will accept heat-seal coatings for lidding stock.

BETTER PACKAGING

Source reduction, down-sizing and the use of recycled and recyclable materials for rigid packaging are all important factors that have become the foundation for coping with environmental issues that must be addressed.

Fabricators of rigid packaging are expending large amounts of capital to meet the customer's needs, through developments in new materials, new engineering technologies and innovations in package design and research. There remains one objective—the creation of better products and packaging for the ultimate consumer.

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