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Methodical considerations for the determination of the seal strength for flexible packages

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The quality assessment of flexible packages includes the determination of the seal strength. Historically it has been required that the seal strength should be at least the same as the strength of the unsealed film, in order to assure a hermetic seal and thus, the integrity of the package. In recent years, this has changed due to difficulties experienced by customers to open the packages. As a result, packages should find a compromise between integrity and being easy-to-open. By easy-to-open it is understood that seal strength should be between 2.5 and 5 N/15 mm. For the determination of the seal strength, there are two international standards available: ASTM F88 and DIN 55529. In both standards, a force vs. extension curve is obtained with the two arms of a sealed specimen pulled at a constant rate. The maximum force/width of a specimen (e.g. 15 mm), is commonly defined as the seal strength. The present work deals with a methodical consideration regarding both standards and the influence of factors such as peel angle, symmetry of the sealed specimen, testing rate, seal bars pattern, and fracture mode. Furthermore, the influence of ageing will be discussed along with storage period and storage conditions (e.g. temperatures according to DIN 10508 and HCCP standards: Temperatures for food hygiene).

Biography

Marta Asturias has completed her studies in Chemical and Industrial Engineering, as well as a Master's in Business Administration (MBA), in Guatemala. In her country of origin, she worked for 7 years in technical and administrative tenures. Furthermore, she finished MSc in Polymer Science in Berlin, Germany and now she is pursuing her PhD in the Martin-Luther University Halle Wittenberg, Germany. Besides her PhD, she is an in charge of lab supervision of master and bachelor students, and contributes in a research project with the Fraunhofer IVV Institute, Dresden.

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