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Compression Test - Medistri

Compression Test

Compression tests are used to determine a material's behavior under applied crushing loads, and are typically conducted by applying compressive pressure to a test specimen (usually of either a cuboid or cylindrical geometry) using platens or specialized fixtures on a universal testing machine.

In the context of packaging validation, a compression test is used to evaluate the strength and integrity of a package when subjected to compressive forces, such as those that might be encountered during storage and transportation.

Compression testing is important for packaging validation because it helps manufacturers determine the integrity of the material and ensure that the finished products are of the highest quality and fit for purpose. By performing compression tests, manufacturers can optimize their packaging to protect the cargo during transport and storage, minimizing damage and costs to companies. This type of testing allows manufacturers to determine the packaging's protective capacity and resistance to compression forces, simulating the pressure it could experience during the stacking of goods in a warehouse.

This test is typically performed on complete, filled transport packages to determine their resistance to compression and their ability to withstand stacking during storage and transportation. During the test, a compressive force is applied to the package using a specialized testing machine, and the package is evaluated for its ability to withstand the applied force without breaking or deforming. The results of the test can be used to validate the design of the package and ensure that it meets the requirements for strength and integrity during storage and transportation.

The ISTA® Test Procedures and Projects is a set of guidelines provided by the International Safe Transit Association (ISTA) for selecting and using ISTA test procedures and projects. The ISTA is a global alliance of shippers, carriers, suppliers, testing laboratories, and educational and research institutions focused on the specific concerns of transport packaging. They help their members control costs, damage, and resources during the distribution of packaged-products by creating and publishing laboratory preshipment Testing Procedures, certifying Packaging Laboratories, certifying Packaging Laboratory Professionals, certifying packaged-products, and providing education, training, and support.

At Medistri, we follow ISTA 2A and ISTA 3A on our packaging validation process - these standards provide a framework for ensuring that the packaging is designed to allow sterilization, provide an acceptable microbial barrier, demonstrate strength and integrity characteristics.

✎ ISTA 2A is a partial simulation test for individual packaged-products weighing 150 lb (68kg) or less when prepared for shipment. It is designed to provide a standard set of tests to understand individual package/product performance when evaluated against several handling conditions. The test sequence includes atmospheric preconditioning at ambient temperature/humidity, atmospheric conditioning at controlled temperature and humidity levels based on detailed guidelines, and compression using one of the following methods: machine apply and release (calculated test force x 1.4), machine apply and hold (calculated test force), or weight and load spreader (calculated test load).

✎ ISTA 3A is a general simulation performance test procedure that replicates common transport conditions in order to evaluate the effectiveness of individual product packaging. This type of testing can provide manufacturers with key insights into the performance of packaging systems when exposed to transport conditions. The purpose of ISTA procedure 3A test is to evaluate the effectiveness of individual packaging systems and analyze how well they perform when faced with common transit conditions. As a package makes its way from the warehouse to the consumer, it typically faces stresses that can damage the product if the packaging system is inadequate.

Should you fully validate your packaging system or should you simply test one particular characteristic of your packaging, Medistri laboratory is accredited and highly experienced to work with the ISTA Standards, helping your company avoiding cost overruns, retesting, market delays or not making it to market at all.

🌐 To learn more about Medistri's Compression Test, visit on our website [here](#) or directly contact our team at contact@medistri.swiss.

- The Medistri Team

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