

Checking packaging for leaks - test methods from Witt of-fer safety for production

Leaks in modified atmosphere packaging have serious consequences for the shelf life of food. Therefore, leak tests are essential as part of a holistic packaging concept. For this purpose, Witt-Gasetechnik offers various procedures - from random sample testing in a water bath to a vacuum test chamber that detects leaking packaging. Following packaging in a protective atmosphere, this ensures that only flawless products leave the production line.



With the Leak-Master Pro 2, checking is carried out with CO₂ as a tracer gas. (Photo: Witt-Gasetechnik)

Non-destructively inspecting MAP packaging

Modified Atmosphere Packaging (MAP) is an effective concept for preserving food. The appearance, texture and nutritional value are preserved without the addition of preservatives. Responsible for the MAP effect is a defined gas mixture precisely matched to the contents of the packaging. It displaces the unwanted oxygen, one of the major causes of spoilage in unopened packages. Growth of microorganisms and ageing processes are delayed.

The best-before date of many foods can be extended in this way - provided the packaging is intact. Therefore, leak tests are indispensable as part of a holistic packaging concept. Witt-Gasetechnik offers various processes for this purpose. With the Leak-Master Pro 2, control is carried out with CO₂ as a tracer gas. This is already included in most inert gas packaging and is also much cheaper, for example, than helium. The acrylic glass test chamber is evacuated. Due to the pressure difference between the test product and the chamber, gas is drawn out of the packaging in the event of a leak. Highly sensitive gas sensors detect this gas within a few seconds. The product is not damaged and can be put on sale.



For leak testing of packaging in a water bath, Witt offers the Leak-Master Easy Plus.
(Photo: Witt-Gasetechnik)

Less time per test

The latest product generation of the German MAP specialist is designed for intuitive operation and economic efficiency. Food producers can therefore ensure product quality and improve their packaging process. Other features are the optimised chamber size and compressed air instead of a vacuum pump to generate the vacuum. As a result, depending on the packaging and the test conditions, the device also finds microleaks of ten micrometres or more with high precision and, above all, even faster.

The quality inspector therefore needs less time per test. In practice, just eight seconds of testing time is sufficient for many types of packaging. The compact design also scores points with its low space requirement. Another advantage: The venturi nozzle used for vacuum generation is low-maintenance and durable, which significantly reduces operating costs. If no compressed-air connection is available, a version with an electric vacuum pump is also available as an option.

Ethernet interface to the network

Optical feature of the new generation: All-round LED lighting provides a clearly visible signal. During the measurement, the device lights up blue, and after the test is completed, it lights up either red or green, depending on the result.

The device manages up to 1,200 products as well as the names, passwords and barcodes of 60 users. The measurement data documentation is carried out with the help of software. Measurement results including date, time, product details and name of the inspector can be digitally archived and additionally analysed, for example with MS-Excel. The unit can be integrated into the company network via the Ethernet interface.

The easy-opening lid with springs supports simple, effort-saving filling. Operation is via touchscreen with graphic interface. Optionally, product selection and user registration can also be carried out using a barcode reader, which speeds up the processes even further.

Simple leak test in a water bath

Another solution from Witt for leak testing packaging that traps air or gas inside is the Leak-Master Easy Plus. The test method in a water bath has the advantage that the weak point of the packaging is obviously recognisable, as air bubbles rise to the surface of the water in a clearly visible manner in the event of a leak. In many cases, this defect localisation makes it possible to optimise the packaging or manufacturing process, therefore reducing the defect rate.

The test procedure is as follows: After logging on to the unit and selecting the test product, the user places the packaging in the test chamber filled with water, closes the lid and starts the test program. The preset vacuum is then automatically generated and maintained for the defined period. The user carries out a visual inspection as usual and after the test procedure must enter on the device whether the packaging was leak-proof or not. The end result is a standardised test sequence that can be reproduced at any time.

Additional information and contact

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