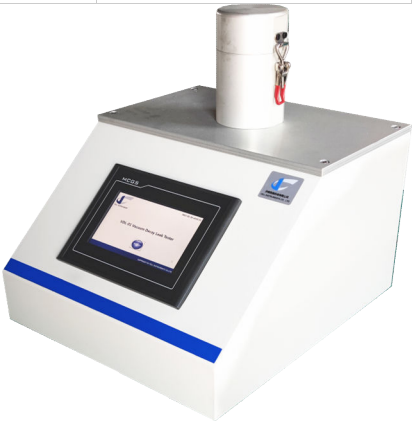
CELL INSTRUMENTS
| Material Testing Solutions

MLT-01 Micro Leak Tester

Various Ways of Leak Test

ASTM Norm	Method	Used For	Our Solution
D3078	Bubble Emission	MAP,gas filled,liquid filled, etc	LT-01, T-02, LT-03
D4991	Bubble Emission	Empty Rigid Containers	LT-01,LT-02,LT-03 modified
F2096	Pressurization	Gross Leaks	GLT-01
F2338	Vacuum Decay	Flexible pack, rigid containers	MLT-01
F2054/F1140	Pressure Decay	Flexible, rigid, tube, etc	LSST-01

About Vacuum Decay Method



The vacuum decay test is a nondestructive, quantitative measurement approach for detecting leakage in nonporous, rigid or flexible packages. Leakage in the package headspace gas region and/or below the product-fill level may be detected given appropriately designed test parameters and if product properties allow.

Vacuum decay leak tests are useful in all phases of the product life cycle. Tests require anywhere from a few seconds to a few minutes to perform. Longer test times are necessary for testing larger-volume packages or for detection of the smallest leaks.

Test Principle

Utilizing dual sensor technology, the vacuum decay method operates on the principle of a dual circulation system. The primary unit of the vacuum decay leak detection tester is linked to a custom-designed test chamber intended for accommodating the package under scrutiny. The apparatus evacuates the test chamber, establishing a pressure differential between the interior and exterior of the package. Subsequently, due to this pressure variance, gas within the package migrates into the test chamber via any existing leaks. The dual-sensor technology monitors the correlation between time and pressure, subsequently comparing it against predetermined standard values to ascertain the presence of any leaks in the sample.

Test Process

1. Secure the sample in the MLT-01 micro leak tester's chamber and apply negative pressure in the FILL stage.
2. When the desired negative pressure is reached, the SETTLE stage begins to accommodate component stretching or flexing.
3. After settling, the vacuum decay TEST phase starts, measuring any pressure increase.
4. In the VENT stage, release remaining negative pressure to the atmosphere.
5. Pressure compression with non-leak samples and system judges PASS or FAIL.

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MLT-01 Micro Leak Tester

Applications

Vials, ampoules, prefilled needles, infusion bottles/bags, etc.

Benefits

1. Suitable for detecting small leaks while also capable of identifying larger leaks, providing clear pass or fail judgments.
2. Operated via a PLC system and a 7-inch color HMI human-machine interface.
3. Utilizes non-destructive testing methods for leak detection on finished packaging, ensuring samples remain intact after testing.
4. Utilizes high-quality vacuum components from reputable brands, ensuring stable performance and durability.
5. Equipped with a mini printer, and supports PC software(optional) for monitoring and control operations, with the ability to switch between mbar and Pa units.
6. Dual-sensor dual-cycle technology, high-quality absolute pressure sensor and differential pressure sensor equipped.
7. Different user-level authority settings meet GMP requirements.
8. Automatically prints test results upon completion of the experiment, eliminating the need for manual intervention and ensuring data accuracy and objectivity.

Standard: ASTM F2338, YY-T 0681.18, USP<1207.2>

Configuration:

Standard: Main machine, vacuum pump, high-precision gas flowmeter, test chamber and 3 sets of positive and negative control (customized according to requirements)

Optional: software, more customized chambers

Main Parameters

Absolute Pressure Range	(0~300) kPa
Differential Pressure Range	(-2~2) kPa
Sensitivity	1 ~ 2 μm
Balance/Test time	1 ~ 3600 s
Vacuum Time	1 ~ 3600 s
Set Flow Rate	0 ~ 3 mL/min
Test System	Dual Sensor Technology / Dual Cycle Test
Test Chamber	Customized according to samples

Similar Models

LT-02 Leak Tester
LT-03 Leak Tester
LSST-01 Leak and Seal Strength Tester

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