



TECHNOLOGICAL INNOVATION GBPI

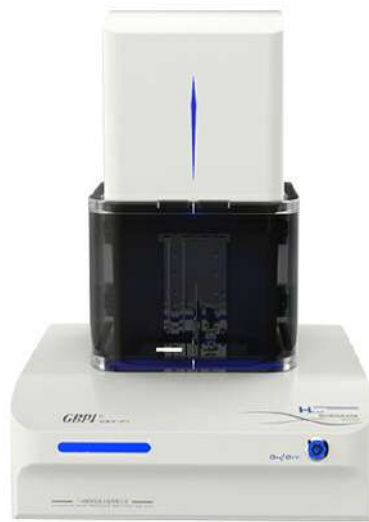
ABOUT US

GBPI is a supplier of flexible packaging testing equipment, mask testing equipment, and testing solutions. It has more than 20 years of experience in the field of testing equipment. The company has a dedicated R&D and after-sales team, which can accept customer testing and on-site teaching machine services. Not only that, we can also help customers with one-stop customized laboratory testing solutions. GBPI has passed ISO 9001 certification, we have become a large-scale testing agency supplier, and cooperate with many international standards organizations. According to customer requirements, we can provide CE, ISO, CNAS calibration certificates, etc. We have established long-term cooperative relationships with large international third-party giants such as SGS, BV, TUV and Intertek. Excellent quality and top after-sales service help GBPI to be recognized by our customers.

CERTIFICATE



GBK-D1 Film Heat Shrinkage Tester



Introduction

Film Heat Shrinkage Tester tests various heat shrinkage properties for the film according to the principle of air heating (air bath). Suitable for heat shrinkable films which produced with polyethylene, ethylene copolymers and their mixtures, such as beverage labels, bottled bundle packaging, sausage shrinkage packaging, outer film of daily chemical products, outer film of cigarette boxes, etc. It is a device that can accurately and quantitatively measure the thermal shrinkage force, cold shrinkage force, shrinkage rate, shrinkage time and other properties of plastic films during thermal shrinkage.

The test results have a variety of data, which can evaluate the heat shrinkage performance of the film from different aspects, contribute to the research and development of heat shrinkable films of different materials, ensure the stability of heat shrinkable films performance of various materials, and meet the requirements of various heat shrinkable films in various industries.

GBPI checks the key thermal shrinkage properties of film products for you. The traditional oven or oil bath equipment only detects the heat shrinkage rate of the heat shrinkable film, and the test results are relatively limited. Our Film Heat Shrinkage Tester GBK-D1 can evaluate the thermal shrinkage performance of films from various data. It is easy to operate, environmentally friendly, with high

Standard

GB/T 34848-2017、ISO 14616-1997、DIN 53369-1976

Test principle

This tester uses the principle of air heating to connect the tested sample to the tension sensor and displacement sensor. After reaching the maximum shrinkage force, it is placed in an external test environment with an ambient temperature of $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ to cool down, the instrument continuously records the reference temperature, shrinkage force, and displacement, the recorded data can be used to determine optimal shrinkage conditions for the film.

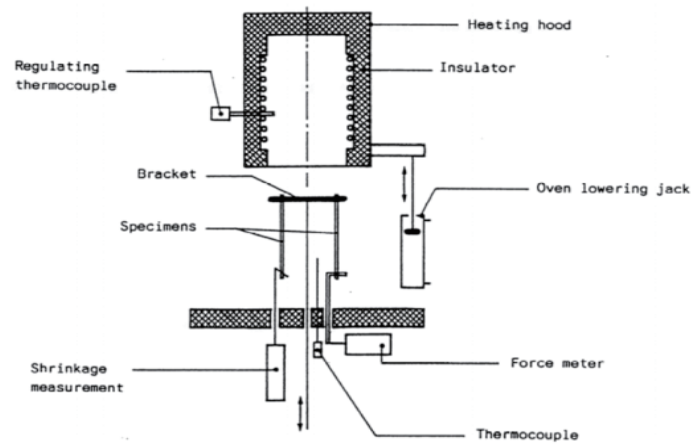


Figure 1 - Example of apparatus

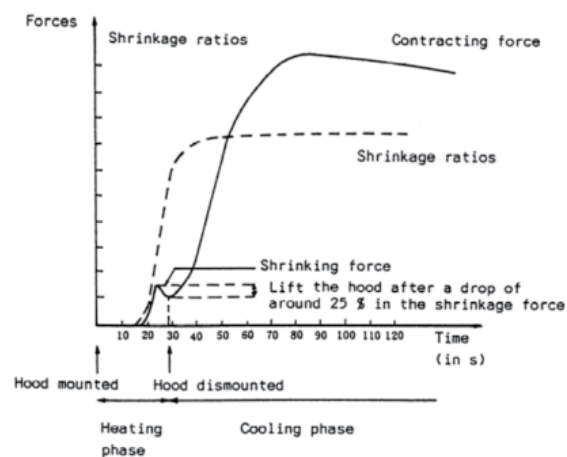


Figure 2 - Measurement of the forces and of the shrinkage ratio - Example of typical kinetics of the phenomena

Application



Beverage film packaging



Sausage shrink wrap



Film packaging



Daily chemical film packaging



Tableware packaging film



Parafilm

Features

- Laser measurement technology, Non-contact precise measurement.
- High-precision force sensor and displacement sensor, can accurately determine the thermal shrinkage performance parameters of the sample.
- Automatic temperature control, intelligent digital PID algorithm.
- The system displays the heat shrinkage force, cold shrinkage force and heat shrinkage rate in real time during the test.
- With built-in system, more safety.
- User hierarchical permission setting, meeting GMP requirements, test record auditing, and tracking functions.
- Support DSM laboratory data management system, which can be maintained and upgraded remotely.

Technical parameters

Item	Technical parameter
Sensor Specifications	5 N (standard) 10 N、 30 N (optional)
Contraction force accuracy	Display value $\pm 0.5\%$ (10%-100% of sensor specification) $\pm 0.05\%FS$ (0%-10% of sensor specification)
Display resolution	0.001 N
Display resolution	0.001 N
Displacement measurement range	0.1 ~ 70 mm
Displacement sensor accuracy	± 0.07 mm
Shrinkage measurement range	0.1%~95%
working temperature	room temperature ~ 210°C
temperature fluctuation	$\pm 0.2^{\circ}C$
temperature accuracy	$\pm 0.5^{\circ}C$ (Single point calibration)