

AUTOMATIC NEEDLE PENETRATION FOR WAX



Automatic Needle Penetration for Wax TT-1321Z

Automatic Needle Penetration for Wax TT-1321Z conforms to ASTM D1321, the Standard Test Method for Needle Penetration of Petroleum Waxes.

This method provides an empirical estimation of the consistency of waxes derived from petroleum by measuring the extent of penetration of a standard needle. It is applicable to waxes with a penetration of no greater than 250.

APPLICATIONS

The Torontech TT-1321Z is used to automatically determine the needle penetration of petroleum waxes as per ASTM D1321. This test provides a precise, empirical measure of a wax's hardness and consistency, which are fundamental physical properties that directly influence its processability, performance, and suitability for its final application.

This critical consistency measurement is essential for quality control and formulation in:

- **Cosmetics & Pharmaceuticals:** For controlling the formulation of lipsticks, creams, and ointments, where wax hardness dictates product structure, stability, texture, and application feel.
- **Packaging & Coatings:** To ensure waxes used for coating paper and cardboard have the correct hardness for scuff resistance and to prevent blocking (sticking) during storage and transport.
- **Food Industry:** For quality control of waxes used to coat cheeses, fruits, and other products, ensuring the protective layer has the desired consistency and integrity.
- **Inks, Polishes & Adhesives:** As a key parameter in formulating specialty products, where the wax hardness influences the final characteristics like rub resistance, gloss, and viscosity.

FEATURES

- The tester features an integrated design composed of a laser detection system, electric lifting system, LCD, thermostatic water bath, and other components.
- Detection mode: Automatically detects the penetration value using laser non-contact detection, eliminating the need to manually adjust the needle tip to place it accurately on the sample surface.
- Laser sensor: Uses laser components.
- LCD display: Allows setting the test time and temperature based on requirements, and provides automatic measurement, average value calculation, and test result storage.
- Electric lifting system: Enables electronic adjustment of the lifting speed.
- Uses a DC low-voltage locking device, ensuring safety and reliability.
- The support can self-lock at any time and securely stop at any position.
- Equipped with a manual release mechanism.
- Thermostatic bath: Features a digital display, adjustable bath temperature, and is made of organic glass with both cooling and heating functions.
- Equipped with a cold light source and amplifier for easy operation.
- Includes level screws and a gradienter.

TECHNICAL SPECIFICATIONS

1. Measuring range: 0~600
2. Release stroke: over 60mm
3. Timing range: 1~90s, adjustable
4. Timing error $\leq 0.02s$
5. Stability: $\Delta u \leq 0.2$
6. Temperature control range: 23~35°C

7. Temperature accuracy: 0.05°C

8. Dimension:

Main Unit: 340*260*660mm (L*W*H)

Bath: 230*300*200mm (L*W*H)



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