



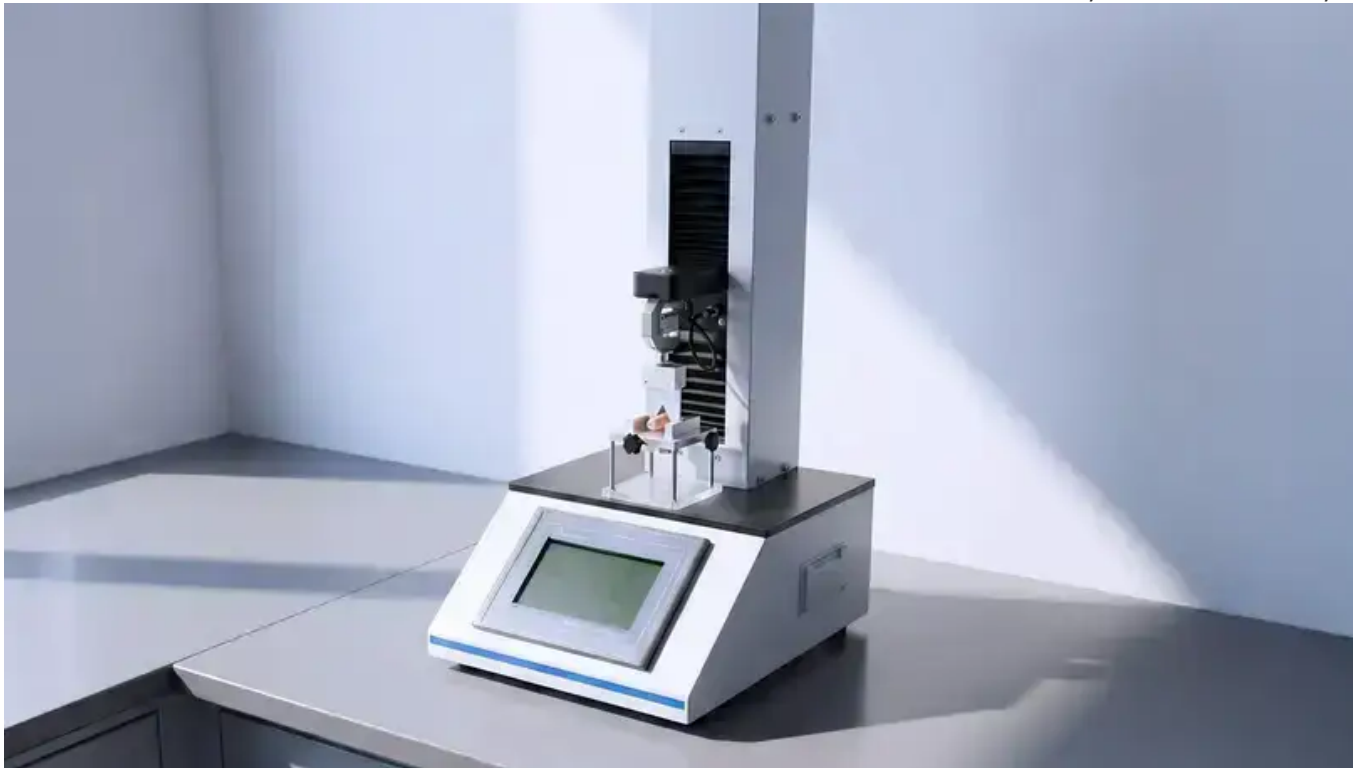
# Texture Profile Analyzer



## Texture Profile Analyzer - QualiTEXA™ -Pro

Texture Profile Analyzer - QualiTEXA™ -Pro is a high-precision texture profile analyzer designed to quantitatively measure the mechanical and structural properties of foods, pharmaceuticals, cosmetics, packaging materials, and industrial products. By applying controlled forces such as compression, tension, shear, and bending, the system converts material behavior into objective, repeatable numerical data.

Equipped with a high-resolution load cell, programmable motion control, and advanced data acquisition software, the QualiTEXA™ -Pro performs full Texture Profile Analysis (TPA) as well as single-cycle and time-dependent tests. It enables laboratories to evaluate critical texture attributes such as hardness, cohesiveness, springiness, adhesiveness, gumminess,



## APPLICATIONS

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### Texture Profile Analyzer - QualiTEXA™ -Pro Applications

Based on the brochure, the QualiTEXA™ -Pro is widely used in:

- Food & Confectionery
  - Evaluation of gel strength, hardness, crispiness, chewiness, elasticity, and fracture behavior in gels, bakery products, snacks, dairy, and meat analogues.
- Pharmaceutical & Medical
  - Products Measurement of tablet hardness, puncture resistance, ampoule break strength, and softgel firmness for quality control and regulatory compliance.
- Adhesives & Packaging
  - Testing loop tack, peel force, seal strength, film stretch, and laminate integrity in labels, tapes, sealants, and flexible packaging.
- Cosmetics & Personal Care
  - Assessment of cream firmness, spreadability, emulsification stability, and gel consistency in lotions, balms, foams, and personal care products.

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## FEATURES

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# Texture Profile Analyzer - QualiTEXA™ -Pro Key Features

- Full Texture Profile Analysis (TPA) capability with two-bite testing methodology
- Wide force measurement range suitable for soft gels to firm solids
- High-precision load cell for accurate force and deformation measurement
- Programmable test modes including compression, fixed load, fixed deformation, creep, and stress relaxation
- High-speed motion control with adjustable test speeds
- Touchscreen and software-driven operation for intuitive method setup
- Supports gel strength and Bloom testing applications
- Compact benchtop design optimized for laboratory environments
- Applicable across food, pharmaceutical, cosmetic, packaging, and materials testing industries

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## **Food Testing**

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## **Adhesive and Packaging Testing**

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## **Pharmaceutical Testing Application**

## THEORY & METHOD

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### Theory and Method (Texture Profile Parameters)

The texture profile analyzer operates by applying controlled mechanical deformation to a sample using a probe, while continuously measuring force and displacement. The resulting force-time or force-distance curves are mathematically analyzed to extract texture parameters that correlate closely with human sensory perception.

#### Key Texture Profile Analysis (TPA) parameters include:

- Hardness - Peak force during the first compression, representing resistance to deformation.
- Fracturability - Force at which the sample structure breaks during compression.
- Adhesiveness - Negative force area during probe withdrawal, reflecting surface stickiness.
- Springiness - Ability of a sample to recover its original shape between compressions.
- Cohesiveness - Degree to which a sample holds together under repeated deformation.
- Gumminess - Energy required to disintegrate semi-solid foods, calculated from hardness and cohesiveness.
- Chewiness - Energy required to chew solid foods, derived from hardness, cohesiveness, and springiness.
  - $\text{Chewiness} = \text{Hardness} \times \text{Cohesiveness} \times \text{Springiness}$
- Resilience - Speed and extent of recovery after deformation during the first compression cycle.

The QualiTEXA™-Pro supports full two-bite TPA testing, closely simulating human mastication behavior to provide reliable, reproducible texture data.

Texture Profile Analyzer - QualiTEXA™-Pro

## TECHNICAL SPECIFICATIONS

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# Texture Profile Analyzer - QualiTEXA™ -Pro Technical Specifications

Parameter	Specification
Model	QualiTEXA™ -Pro
Instrument Type	Texture Profile Analyzer
Test Range	Up to 500 N (other ranges available)
Test Speed	1-500 mm/min (adjustable)
Resolution	0.5% F.S.
Stroke (excluding fixture)	250 mm
Test Modes	Compression, TPA, fixed load, fixed deformation, creep, stress relaxation
Measurement Output	Force-time and force-distance curves
Voltage	AC 110-220 V
Dimensions (L × W × H)	410 × 360 × 820 mm
Typical Applications	Food, pharmaceutical, adhesives, cosmetics, packaging, materials testing



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