Stable Micro Systems

innovation • education • application

world
leading
texture
analysis

TA.XT.plus
Texture Analyser

TA.HD.plus
Texture Analyser

*sophisticated
full-featured
texture analysis*

Food

Pharmaceuticals

Cosmetics

Personal Care

Adhesives

TA.XT.plus
Texture Analyser

world leading texture analysis

Texture is an important attribute of products in that it affects processing and handling, influences habits, and affects shelf-life and consumer acceptance.

Texture analysis is the mechanical testing of food, cosmetics, pharmaceuticals, adhesives and other consumer products in order to measure their physical properties. Because of its adaptability, texture analysis has become commonplace in many industries to measure a specific or range of characteristics or properties relating to the way a material behaves, breaks, flows, sticks, bends etc. Major manufacturers routinely apply texture analysis techniques both in new product development and as part of quality control in all stages of manufacture, carrying out a wide range of measurements to analyse raw materials or excipients, semi-finished goods, packaging and finished products. It is a cost-effective method to determine the effects of raw material or excipient quality or the adjustment of formulation or processing variables on end product acceptability – whether this is to measure the 'mouth feel' properties of food, the flow properties of creams and pastes, the break or bend of a product or the tackiness of adhesives.

Where problematic textural issues occur during storage or transportation, texture analysis can provide a useful assessment. It may also prove to be an effective means of comparison with competitive products, or where claims substantiation is necessary to take a technical pro-active stance in your market. It will certainly provide an indispensable tool when you need to quantify the texture or overall physical properties of your 'gold standard' product for future comparison in manufacture – the key to maintaining consistent textural quality!

Stable Micro Systems offers the most universal Texture Analysers available today – the TA.XT*plus* and TA.HD*plus* 'World Standard' instruments – to completely satisfy the increasing demands for accurate, repeatable and quantifiable textural information. They assess textural properties by capturing force, distance and time data at high speed – data which is then displayed graphically by *Exponent* software.

Our range of Texture Analysers use different probes and fixtures according to the required test method. Each probe or fixture is designed for a specific group of applications, and can be quickly and easily attached. Samples are either placed on the base of the instrument or on the lower fixture, or held between two fixtures. In a simple test, the arm of the texture analyser containing the loadcell moves down to penetrate or compress the product, and then returns to its initial position whilst measuring forces in both directions.

Take your choice of *plus* instrument

The TA.XT*plus* presents a small portable solution for your texture analysis testing, measuring up to 50kg in force, and is consequently the most popular choice for universal texture analysis. Alternatively, the TA.HD*plus* Texture Analyser offers a maximum force capacity of 750kg (7.5kN), and a family of intelligent, factory calibrated loadcells down to 0.5kg. It can perform precision testing to a few grams without compromising accuracy, whilst providing the required rigidity to accommodate measurements of considerably higher force for heavy duty applications. The greater testing bed area and height range offer the ability to test much larger samples within a twin column frame, making this instrument the obvious choice for users testing a wide range of products, or for those who have an uncertain future product testing requirement.

Stable Micro Systems' range of instruments can measure and analyse fundamental, empirical and imitative tests covering those relating to texture analysis, materials properties as well as effects of rheology of solid, semi-solid, viscous liquid, powder and granulate materials across a wide range of industries. The list below is a representative selection of physical properties that may be of interest.

Adhesiveness	Extensibility	Break Strength	Hardness	Peel Strength	Brittleness	Consistency
Firmness	Burst Point	Stiffness	Springiness	Fracturability	Tensile Strength	Toughness
Swelling	Disintegration	Spreadability	Cohesion	Friction	Elastic Modulus	Resilience
Tear Strength	Relaxation	Flexibility	Setting/Curing	Tackiness	Compressibility	Puncture Force

TA.XT.plus
Texture Analyser
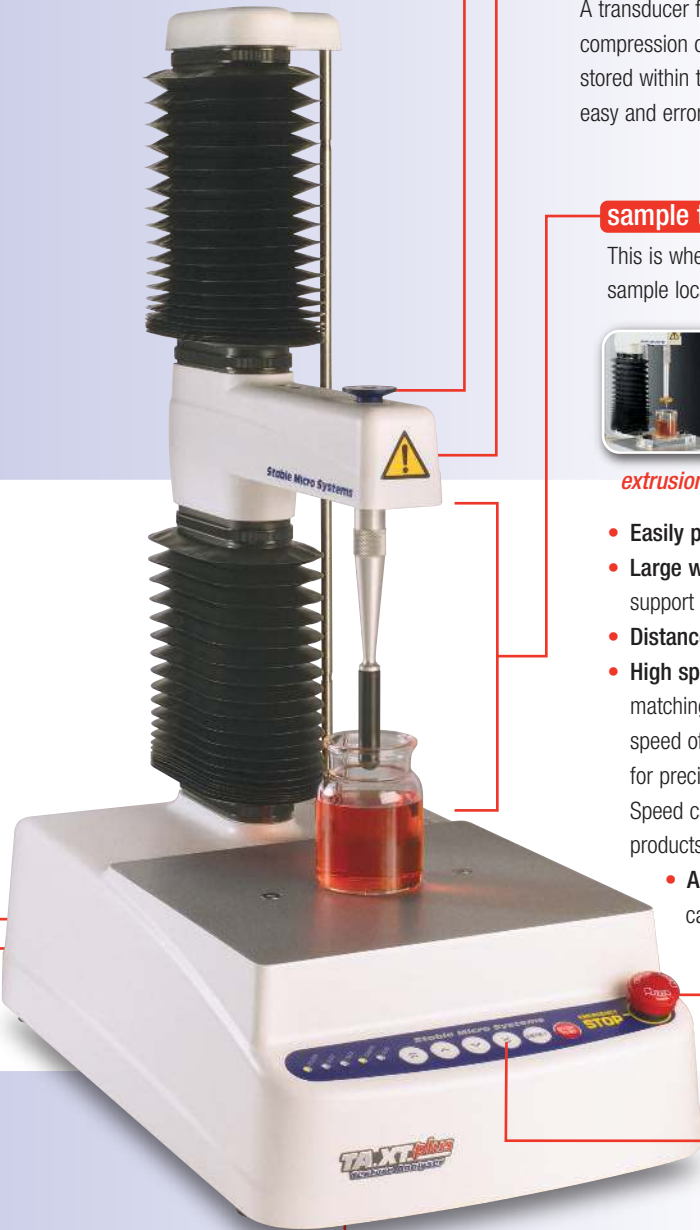
calibration platform

A platform on which reference weights can be positioned for simple calibration of the installed load cell. All load cells are factory calibrated but may also be calibrated with any weight up to the loadcell capacity installed in the Texture Analyser, to provide optimum accuracy at the force range of specific interest to the user.

loadcell

A transducer fitted in the arm of the Texture Analyser which measures force in compression or tension. Information including capacity, calibration and serial numbers is stored within the loadcell and automatically detected upon installation. This enables rapid, easy and error-free loadcell changing.

sample testing area

This is where the appropriate probe or fixture *(examples shown below)* is attached for sample location and testing.

extrusion   *shearing*   *tension*   *bending*   *puncture*   *compression*

- **Easily portable** due to small instrument footprint and manageable weight
- **Large working area** providing superior flexibility of fixture positioning and sample support
- **Distance range** allows for location of additional devices such as thermal cabinets
- **High speed testing** up to 40mm/s can be reached. This will be of interest when matching specific operating conditions or imitating real-life situations. A minimum speed of 0.01mm/s and fine distance resolution permit accurately controlled approach for precise location of the sample surface and the testing of thin or fragile samples. Speed can also alter in proportion to the instantaneous height of the sample so that products can be tested at a constant strain rate in compression or tension.
    - **Arm movements** are totally programmable so that customised test sequences can be defined.

emergency stop button

Combined with mechanical stops, increases safety.

control panel

Enables easy up and down movement of the texture analyser arm for precise alignment of samples and probes.

usb pc link

Computer cable connection for software control and analysis. See pages 5-8 for software explanations and options.

firmware upgrades

Electronics (firmware and hardware) for sophisticated control of the instrument are housed in the base of the instrument. New firmware can be downloaded ('flash upgraded') by a quick and simple software interface so that new features can be added to enhance the instrument's capabilities. This allows access to latest developments and improvements even after your initial instrument installation.

peripheral attachment

Multi-channel data acquisition ports for plug-in peripherals allow for many other measuring devices, such as temperature and humidity modules, to be used in conjunction with the Texture Analyser and their data simultaneously collected. See page 9.

world leading attachments and applications

## Typical applications – the possibilities are endless...

Many texture analysis tests, such as the Bloom Strength test for gelatin gels, are International Standards, whereas others are recognised as standard tests within an industry, such as Texture Profile Analysis for many food products. To be successful, all of these tests depend upon the integrity of the Texture Analyser and the selection of the correct testing method, the manufacturing precision of the probe or attachment used and the accuracy of the analytical software to provide the results in a clear, concise format. The TA.XT*plus* Texture Analyser with its wealth of application methods and the range of over 200 probes and attachments are the result of decades of experience in the design and manufacture of this equipment.

The choice of probe or fixture that you use will depend upon the sample's form, the property that you wish to measure or the action that you wish to perform. Fixtures are available to provide the required action of compression, extrusion, cutting, extending or bending on the sample or to support, anchor or deform the sample in a customer-specific way.

The main goal of many texture studies is to devise one or more mechanical tests with the capacity to replace human sensory evaluation as a tool to assess texture. Measurements that yield both fundamental and empirical product characteristics are well developed, whilst wide-ranging imitative test procedures are also becoming increasingly important. Their relevance is in imitating a real-life situation, which permits far simpler data interpretation.

Typical real-world applications are emulated by special attachments on a TA.XTplus Texture Analyser
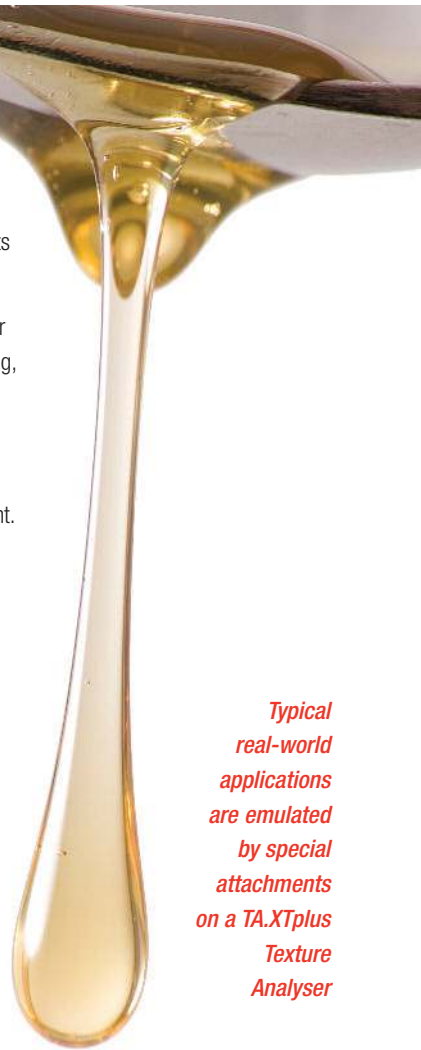
No-one can design the solutions to your testing challenges like we can...

Probes and fixtures are attached to a Texture Analyser to allow a particular action or test to be performed. They are in everyday operation worldwide, testing a wide range of products, materials and properties in both Research and Quality Laboratories, as well as being integrated into many production lines.

Only the finest quality materials and the best quality finishes are used in the manufacture of our probes and attachments; food quality or better Stainless Steels (polished and mirror finish), aerospace quality aluminium alloys (micro finished and hard anodised) and ICI or GE engineering plastics.

Every probe and attachment is rigorously inspected for dimensional accuracy, profile and finish during manufacture, again both during and after assembly and finally before despatch to the customer. Where applicable, optical inspection is also utilised.

Above all, we listen to you, the user, and constantly work to improve our products to suit your requirements. We are always enthusiastic to hear from users with suggestions on how we could improve or extend our range of accessories. In-house mechanical, electronic and software engineers also provide us with the ability to design bespoke probes and fixtures to solve new testing requirements or according to customer specification.

As a Texture Measurement professional, you may notice how frequently the inventions and innovations of Stable Micro Systems are copied by our imitators. However, such imitations often lose the subtlety and elegance of the original design and in all cases lack the application background and development understanding required for successful implementation. That is why, since 2007, all of Stable Micro Systems' original probes and fixtures have been filed as European Community Registered Designs.

world leading software

Giving you the choice of software to drive your instrument

At Stable Micro Systems we have long recognised the need to constantly expand the wealth of possibilities of testing, presentation formats and analytical solutions in our *Exponent* software. However, we also recognise that a considerable percentage of users require a simple test and data analysis solution, that users may be testing in a high-throughput production environment at varying skill levels, or that users require a quick, easy to operate method on an infrequent basis. For this reason we offer two software options:

Offers Sophistication and Flexibility

This fully established software package is set to continue to be the software of choice for: the professional or advanced texture analyst, those users requiring long-term flexibility of operation and analysis and those users requiring additionally synchronised data measurement alongside their traditional texture analysis data.

Exponent software will maintain its ongoing expansion of testing procedures, presentation formats, data analysis features and enhanced security options. The aim – to provide the most powerful and flexible testing analysis solution available which is of particular importance for those in Research and Development.

Offers Simplicity

This 'lighter' version of *Exponent* software is well suited for simple texture analysis testing offering flexibility and simplicity of use without loss of instrument performance. Users at all levels will appreciate the minimum learning and training required, whilst the package provides all of the general capabilities you need to run tests quickly and efficiently to achieve maximum productivity.

Exponent Lite provides the same basic functions as *Exponent* but the complex features required by advanced users or necessary for sophisticated operation have been removed – straightforward texture analysis without the 'bells and whistles'! Upgrading to *Exponent* is possible at a later date if required.

	Exponent	Exponent Lite
Enhanced **Security** – provides extra security and logging features	•	
Reporting – provides templates or user-customisable layouts for reports	•	
Full **Macro** Functionality and Graph Calculation Ability for Data Analysis	•	
Projects and Automated Project Loading	•	•
Help Files providing Applications Support	•	•
Sequence Writing Functionality – allows customisation of library tests	•	
Testmaker – provides ability to devise user-specific tests	•	
Full **Results** Functionality – for manipulation of data and charting	•	
Basic Results Functionality – for manipulation of data		•
Full **Automation** Capability	•	
Multi User Licence	•	•
Additional **Data Capture** options*	•	

e.g. Temperature, Acoustics, Dough Inflation System, Powder Flow Analyser, Resistance, Video Playback etc.

Both software packages provide a flexible graphical user interface to choose test settings and acquire test data in a real-time graphical display with free download of upgrades throughout the life of your instrument. Macro and spreadsheet facilities are built-in to aid automated data collection and analysis. The following presents a few highlights of the software which can only be fully appreciated by a live demonstration.

Calibration and Force Verification
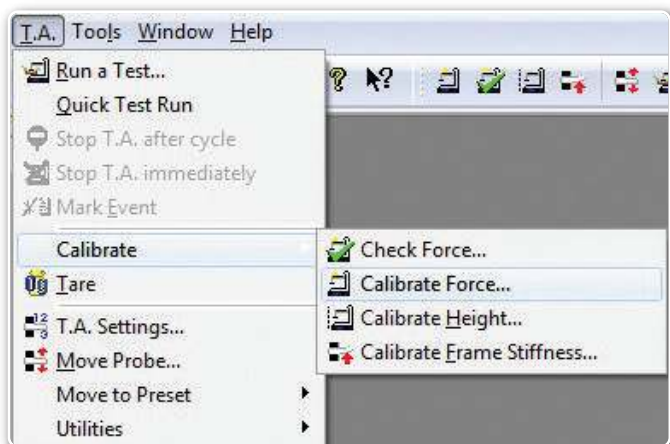
*As with all good instruments, calibration and verification are standard practice*

Making measurements with any analytical method or instrument requires calibration to ensure the accuracy of the measurement. *Exponent* and *Exponent Lite* provide for the calibration of Force, Height and Stiffness and Force Verification – simple procedures which take only a few minutes.

Calibration of both force and distance is carried out in-house at the end of the manufacturing process.

Customers can easily re-calibrate the instrument in their laboratories depending upon their good laboratory practice.
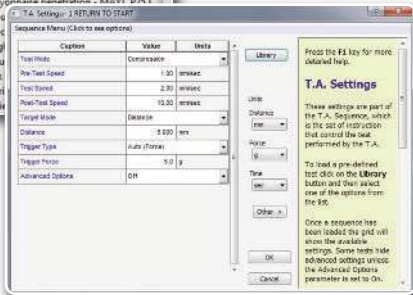
The accuracy of all of our instruments can easily be checked in terms of speed, distance and force measurements to meet the more demanding regulations of certain industries.

world leading software

Test Setup and Design
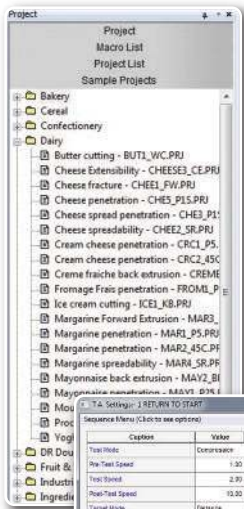
Projects can be automatically loaded from Help files

TA Settings

Testing starts with your choice of settings. This will depend on the type of test you wish to perform and the properties which you wish to investigate. There are several options for specifying the way in which the texture analyser is to test a sample.

Automatically Loading a Test Project

The *Samples* directory contains an ever increasing range of over 180 projects from which users can select as a test starting point. At the click of a button your chosen sample project can automatically transfer the required test settings to the instrument and load the associated macro, spreadsheet and report ready to analyse and display the results once the test is performed.

Test Settings and analysis Macro routines can be optimised to suit your particular applications and if routinely required they can then be saved as user-specific *Projects*. A *Project* combines all of the components required to initiate a complete test and analysis procedure and is the basis on which a user can centralise all files required for a specific product test.

Alternatively it is very easy for you to write your own method for the particular analysis required.

Choosing from a Test Library

A series of classical Texture Analyser tests are included from which simple or 'enhanced' versions are available for selection. A *TA Settings* window is displayed which allows the user to specify such parameters as speed and test distance required for the test procedure. Advanced features within a test can be hidden for simplification. All *TA Settings* parameters have a caption which explains what each parameter does.

Running Tests and Collecting Data
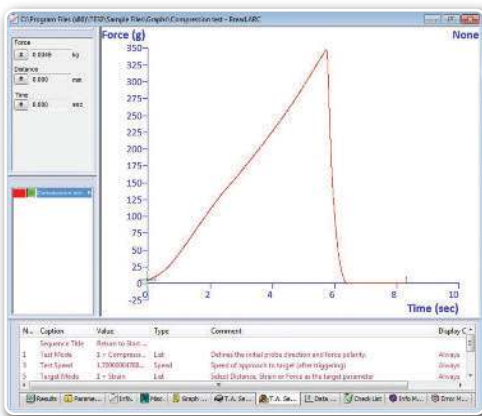
Graphs

Before testing, a *Run a Test* window establishes test options and post-test parameters (e.g. file name, probe used, etc.) Sample and attachment details can also be specified for further analysis.

Data can be captured at high speed which is a particularly important aspect when testing products that fracture or require high speed separation such as during the testing of adhesives.

The ability to plug-in peripheral instruments is present in the instrument design to provide multi-channel data acquisition. This allows for many other measuring devices to be connected to the Texture Analyser and their data simultaneously collected, such as acoustic emission, temperature, humidity via *Exponent* software.

Graphs

During testing of your sample, force, distance and time values (and additional peripheral data values if attached) are collected and the real-time data displayed in a *Graph* window.

The Graph can be annotated to highlight the areas of interest and its axes can be changed to display the data in different X and Y combinations. Logarithmic and second Y axes are also available to allow synchronous display of additionally collected data such as temperature.

Graph files can include photos of the sample tested, and can also be exported as .bmp or .jpg.

EMPLOY YOUR TEXTURE ANALYSER TO:

- Assess raw materials or excipients, semi-finished goods, packaging and finished products

- Provide an objective quantifiable result which can be archived and retrieved for future viewing

- Determine the effects of formulation or processing variables on end product acceptability

Data Analysis
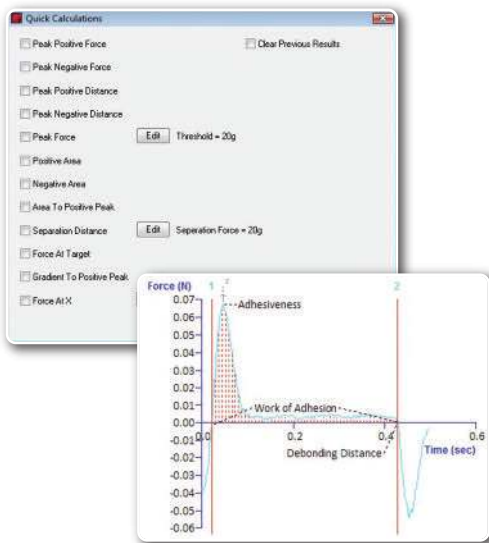
Macros automatically analyse the relevant portions of the graph to calculate the important parameters and can be set up to annotate the areas of interest on each test curve.

So your tests are done – now let's make sense of it all

Once data has been collected and is displayed in a *Graph* window, there is likely to be a requirement to analyse it in order to interpret the results and draw conclusions. *Exponent* provides a wealth of analytical tools, from the most basic option of collecting a single force value to more sophisticated methods of curve smoothing or detection of inflection points. Almost any feature of a data characteristic can be recognised and recorded. Icons for the calculations of such parameters as Area, Gradient, Time Difference, Mean, Count Force peaks, Force Maxima/Minima etc. are quickly accessible on the toolbar or minimised to only those required by the user via the *Customisable Toolbar* option.

Quick Calculations are a selection of popular calculations that you can choose from that will analyse the data to provide results in just a few steps.

Macros

A *Macro* simplifies repetitive analysis and display. A set of instructions are listed and executed which automatically collect data from the graph. Tests can be automated with either intricate or simple macros, the latter being ideally suited to a production environment. At the end of each test, an operator need only concentrate on the positioning of their sample and starting their next test whilst the previous data is analysed in the background.

Exponent not only provides an extensive library of macros that are ready to quickly analyse your data once your tests have been performed, but enables the writing of macros that can quantify almost any aspect of the data resulting from the test. The flexibility to perform such a wide range of sophisticated additional mathematical functions within the software is unrivalled.

Managing Results

Data collected from macros is dropped into a spreadsheet

The analysed data is displayed in a results window in customised spreadsheet format and if necessary extra calculations are made by the addition of more columns to further manipulate your data or produce other parameters using either your own or stored Formulae e.g. Standard Deviation, Average etc. Multiple worksheets are available to separate product parameters from results and user data.

Exporting Data

Spreadsheets, text or images can be exported to other Windows applications for further specific manipulation/presentation if required.

Once your range of tests are performed the collection of parameters you have obtained can be collated into a 'fingerprint' of each sample.

• **Assess changes during storage or transportation**
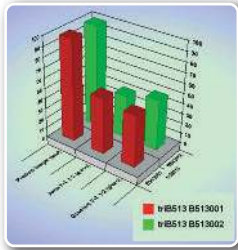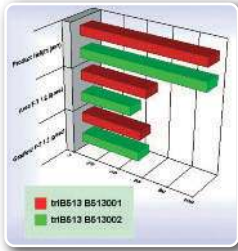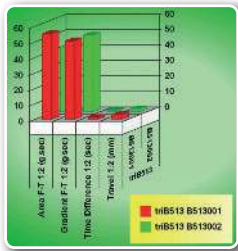
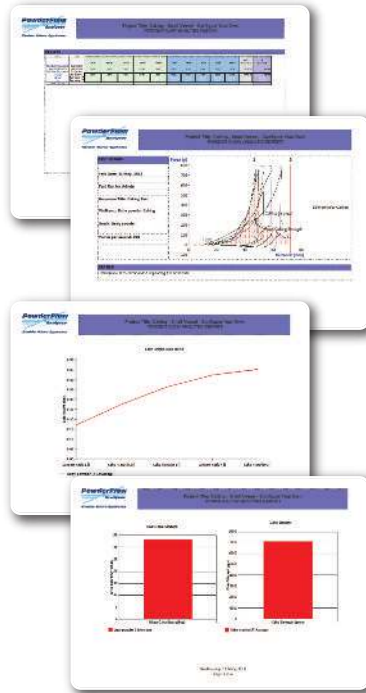• **Substantiate your product claims**

• **Compare with competitive products**

• **Determine the physical properties of your 'gold standard' product for future consistent quality control**

world leading software

Presentation and Layout Options: *Exponent* only

Charts

Reports

Charts

Once data is collected in a spreadsheet, charts in a multitude of formats can be automatically displayed or designed to suit your data comparison needs.
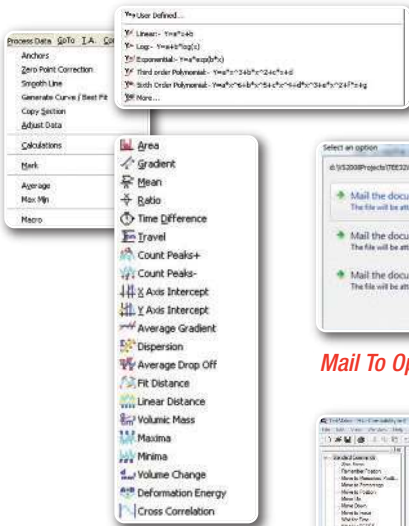
A chart gives a visual representation of the data from the *Results* window to allow easier comparison and interpretation. The *Chart Designer* allows selection from 27 chart types (2D and 3D) and define rotation, position, 3D lighting properties, legend styles, base and wall styles, and axes types (stacked, normal and %).

Reports

A *Report* is a great way to establish a strict format for presenting information for others. For example, reports allow users to present hourly online test results to their managers or to present well-formatted reports to marketing and customers. Reports may include graphs, results files, charts, pictures, logos, text, test settings, test preferences, batch numbers, information about the products tested, etc.

A Report can be a user formatted composed presentation of the complete analysis using the WYSIWYG word processor type interface. Alternatively reports can be automatically generated from active objects and fields when a report template is open which can be set-up to print, save or email when tests are complete. A Spell Checker, Thesaurus, adjustable fonts and styles and support for tables, OLE objects and export to HTML are also included.

Additional Features: *Exponent* only

Advanced Data Analysis

Mail To Options

Programmable Sequencing

Programmable Sequencing: This allows total flexibility in the programming of the Texture Analyser arm movement. New test sequences can be written to accommodate sophisticated arm movement requirements, data capturing options and control of peripheral measurements such as temperature modules.

Test Maker: This is a useful facility which allows a user to simply build a customised test from a selection of standard arm movements.

Sax Basic Macro Language: Access to advanced *Exponent* data and commands provides the ability to automate certain actions or tests.

Advanced Data Analysis: *Exponent* provides a wealth of sophisticated analytical tools which are available for immediate use and quick interpretation.

OLE Automation: This offers an interface for easy integration into many programming languages allowing total automation within a bespoke system such as automated sample loading or complex data collection systems.

Mail To... At the end of your test, you can send your data directly from *Exponent* to your colleagues – a great feature for multiple location synchronisation which simplifies the distribution of *Exponent* files from one site to another.

Add pictures to Graph files: The Project and the Graphs have a place to enter notes to describe a test method or setup. Why not add a photo of your test setup so it is easy to see how it was or should be configured?
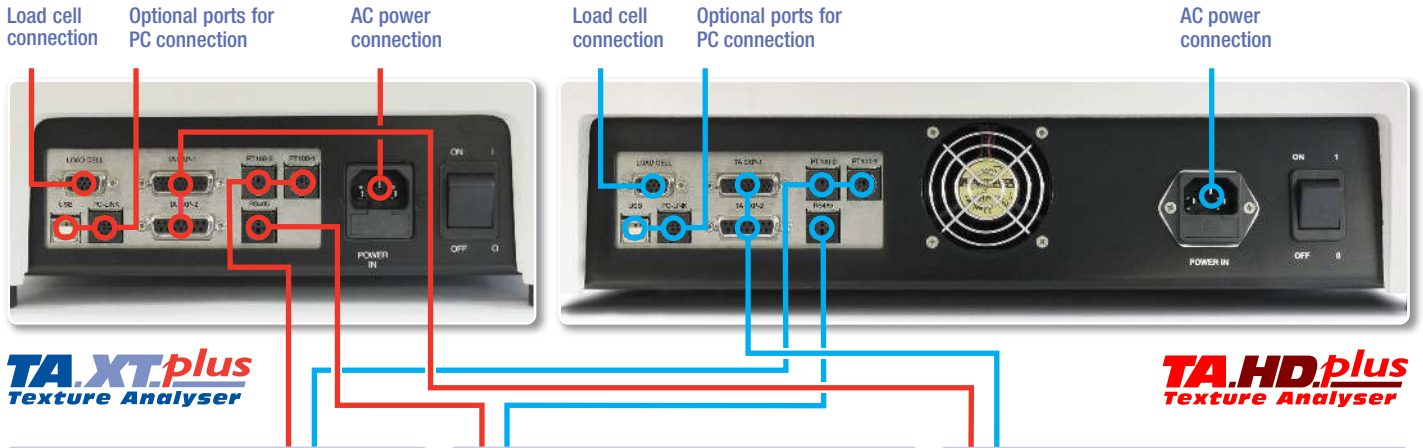
Test History Database: This feature tracks when tests were run and where they have been saved in the event that important data is misplaced.

LIMS: *Exponent* can simplify the sending of analysis results to LIMS from most companies. It comes in the form of a Macro command that can be easily configured to export the selected results of the current product to a file that a LIMS can read and delete.

Enhanced Security Module: This additional module provides additional security such as electronic record and signature management if you need it or wish to run your instrument in accordance with FDA CFR21 Part 11 guidelines.

peripheral options

innovation • education • application

Load cell connection **Optional ports for PC connection** **AC power connection**   **Load cell connection** **Optional ports for PC connection**   **AC power connection**

TA.XT plus
Texture Analyser

TA.HD plus
Texture Analyser

Connected to: PT 100 (1 & 2)†

PT100 Temperature Probe

A platinum resistance thermometer probe giving direct measurement over the range -50 to +250°C.

Additional Data Collection Options

Vernier*

Allows linear distance measurements to be directly fed into *Exponent* as part of the test sequence.

Barcode Scanner*

A product barcode can be scanned to automatically select the correct project ready for testing.

Remote Switch

The USB User Programmable Remote Switch replicates any desired key stroke combination.

Operational Safety Option

Safety Interlock Cabinet

The TA.XT *plus* fits inside the cabinet and operates only when the door is safely shut.

Connected to: RS485

Humidity Temperature Module

Has an operating range of 0-100%RH /-30°C to +100°C. For air measurement only.

Relay Module

For the control of an external device that can be electrically operated.

Peltier Plate

Provides a stable surface temperature for testing small or thin products.

Peltier Cabinet

Provides a temperature controlled environment with an operating range from 80°C to 20°C below ambient.

Thermal Cabinets

Liquid nitrogen cooling and electric heating provide an accurately controlled environment over the range of -40°C to +180°C.

Major Peripherals

Dough Inflation System

Complete system for the measurement of bi-axial extension properties of dough.

Connected to: EXP (Auxiliary ports)

Acoustic Envelope Detector

Enables measurement of absolute acoustic levels calibrated to National Standards.
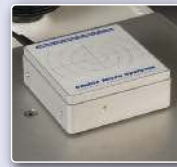
Video Capture & Synchronisation System

Aids synchronising of video/force data, even while using other data capture devices.

Automated Linear Indexing System

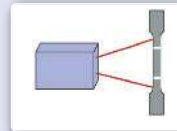Testing can be automated for linear sample presentation.

Dynamic Integrated Balance

Sample weight can be fed directly into *Exponent* as part of a test procedure.

Milliohmeter

For the measurement of electrical resistance over a choice of three ranges.

Extensometer*

This device can be employed to measure absolute strain in testing.

Powder Flow Analyser

For the measurement of powder flow properties, e.g. caking, cohesion, flow speed dependence.

This chart gives examples of the peripherals which may be used with the TA.XT *plus* or TA.HD *plus* Texture Analyser for additional data capture or instrument control when used in conjunction with *Exponent*.

† When either PT100 port is in use, the corresponding EXP port will not be available.
* Third party product not supplied by Stable Micro Systems

unrivalled built-in advice and assistance

No-one knows more about Texture Analysis than we do... introducing the Education Zone.

Help files are available to guide you through your testing and analysis and provide the background support material you need to get the best from your instrument.

Probe and Fixture Guide

Our existing range of probes and fixtures are shown and their set-up and testing instructions explained with links to relevant application studies and video clips to demonstrate the device in action.

Which property do you wish to measure?

Examples of different ways to measure a specific textural property, the fixtures to use and the typical regions of a curve to analyse to obtain your relevant parameters.

If you prefer the standard approach

A selection of methods that are suited to using a Texture Analyser according to a Standard.

Do you wish to measure more than Force?

An explanation of additional measurements that can be collected and displayed in *Exponent* to provide more than just a measurement of Force if necessary.

Providing an Education

If you are new to Texture Analysis, you may need a background understanding of its principles.

Tutorials

These are written to guide new users through basic procedures of using the software step-by-step. They can also be printed out for ease of viewing.

Published Papers

Abstracts and citations of papers published that refer to the use of Stable Micro Systems' Texture Analysers. Read about other users' experiences and their collected data.

Application Studies

Starting point test procedures and projects available to automatically load in *Exponent* – grouped by product type. No-one knows more about how to measure texture than we do – so challenge us!

Data Analysis Techniques

Guidance on understanding the ways to analyse your curves and the calculation options available to you. The range of data analysis techniques is unmatched anywhere in the world.

Video Clip Library

A comprehensive collection of video clips demonstrating certain tests or fixture arrangements. You may also wish to include these in presentations – be our guest!

Keeping you connected

The opening screen of *Exponent* will provide connection to us – once again extending our service to you in a multitude of ways throughout the life of your instrument.

the complete service

Unrivalled application support and development

FREE technical support throughout the life of your instrument

Stable Micro Systems are totally dedicated to scientific texture analysis. Our range of Texture Analysers is internationally recognised as the 'complete' instrument and your passport to the advancing world of texture analysis.

At Stable Micro Systems we do not just manufacture texture analysers; we strive to provide our users with continual information to enhance their instrument understanding and increase the background knowledge available to them. Through our continued co-operation with universities and research establishments involved in texture analysis, and our in-house product testing and method development laboratory, we aim to provide you with the most up to date applications information and to offer you the most comprehensive range of attachments and analytical techniques available.

Application Studies

Our Application Studies library is perhaps of primary importance to you. These studies demonstrate a viable test method for a wide range of specific products, and also act as an ideal starting point for studying similar products. Detailed reports present typical results and interpretation.

Test methods can be chosen by **Product Type**, by **Probe/Fixture** available, by **Textural/Physical property** or according to a **Standard Method**.

As well as offering a design service for new attachments, users benefit from free software updates and a dedicated applications support team that will endeavour to exceed your expectations.

Our software is written in-house, giving us the ability to rapidly add required features suggested by our users, providing unmatched, continuously enhanced software, dedicated to texture analysis. We constantly strive for improvement and pride ourselves on our quality of customer support throughout the world.

Our customer satisfaction speaks for itself

Our simple to use philosophy has benefitted users engaged in activities ranging from routine product quality assurance to fundamental research.

Multiple instrument set-up at the Danish Technical University

Gel testing at Leatherhead Research

Lipstick testing at the London College of Fashion

Melon testing at the Agricultural Research Institute in Cyprus

The Food Technology Centre in Anglesey, UK – assessing physical characteristics of food products

Worldwide in-depth support from Stable Micro Systems. Not available elsewhere.

ONLINE TESTING ADVICE SERVICE

We would like to help you to get the most from your Texture Analyser by enabling direct contact to our in-house application laboratory from which useful testing advice can be given confidentially and free of charge. We are confident that our laboratory services demonstrate our commitment to the 'complete' system philosophy.

SOFTWARE TROUBLESHOOTING

Often customers have a requirement to train new staff and, coupled with the rapid advancement in computers and their operating systems, customers have the need to call us for technical advice. Our team of Software development and support engineers are available to troubleshoot your software problems.

MACRO / SEQUENCE WRITING SERVICE

If you would like us to help you to write a macro or special sequence for your Texture Analyser, our online form will enable you to supply us with your bespoke analysis requirements.

WORLDWIDE SALES / TECHNICAL SUPPORT

Handpicked distributors are specifically trained to meet your testing and analysis needs.

technical specification

24 month warranty

Scientific Texture Analysis provides quantifiable, repeatable and accurate data on the physical properties of food, cosmetic, pharmaceutical and chemical products.

It is now an established procedure in research, and a valuable tool in the quest for improved quality control methods.

Whether you require routine measurements or undertake fundamental research, Stable Micro Systems provide you with an unmatched array of precision accessories and the most comprehensive texture analysis software package available to ensure the validity of your test results.

	TA.XT*plus*	TA.XT*plus* **Extended Height**	TA.HD*plus*
Force Capacity	50kg.f (500N)	50kg.f (500N)	750kg.f (7.5kN)
Displayed Force Resolution	0.1g	0.1g	0.1g
Loadcell Options	0.5, 5, 30, 50kg.f	0.5, 5, 30, 50kg.f	0.5, 5, 30, 50, 100, 250, 500, 750kg.f
	Loadcells are directly interchangeable by the user. Loadcells store factory calibration and may be calibrated by the user using a precision weight		
Loadcell Accuracy	0.5% of reading down to 1% of loadcell capacity		
Speed Range	0.01 – 40mm/s	0.01 – 40mm/s	0.01 – 20mm/s (13mm/s @ 500–750kg.f)
Speed Accuracy	Better than 0.1%	Better than 0.1%	Better than 0.1%
Maximum Aperture	370mm	590mm	550mm
Distance Resolution	0.001mm	0.001mm	0.001mm
Net Weight	14.9kg	16.5kg	39.2kg
Dimensions	650 x 280 x 540mm	900 x 280 x 540mm	967 x 545 x 475mm
Sample Testing Area	247 x 228mm	247 x 228mm	320 x 298mm
Width between Columns	–	–	320mm
Measuring Units	g, mm, s (Metric) or lb, in, s (Imperial)		
Pre-Test Speed and Distance	Ability to set quick positioning markers for sample throughput efficiency		
Test Types	Library tests: Cycle, Hold, Return to Start, Repeat (all in Compression & Tension), Adhesive Test. Apply distance or Apply force options.		
	Totally programmable arm movement sequencing when used in conjunction with software		
Data Channels	Filtered force at 20 bit; Distance at 24 bit; Unfiltered force at 16 bit.		
	Two linear analogue inputs: (range +/- 4.5v @ 16 bit) or PT100 temperature probe inputs (range -50°C to +250°C)		
	Bi-phase digital encoder input at 24 bit suitable for any compatible linear or rotary extensometer		
Data Acquisition Rate	Up to 500 points per second (PPS) for each data channel		
Overload Protection	Automatic overload protection for operator safety and load cell protection. Data safeguarded in the event of overload		
Filtered Force	Oversampled at 8000 samples per second and digitally filtered to 500pps at 20 bit resolution		
External Instrumentation Channels	Four channels of RS485 for the simultaneous collection of additional data.		
	Each channel logs at one sample per 10 seconds at 16 bit and is suitable for external sensing of e.g. temperature, humidity, etc.		
Operating Temperature	0°C – 40°C		
Operating Environment	Laboratory conditions. Dust and splash resistant		
PC Interface	Interface to PC through a standard USB port		
Power Supply	Universal mains input voltage		
Firmware Updates	FLASH update of firmware via PC		
Attachment Options	Unrivalled range of probes and fixtures for sample testing. Design facility to manufacture bespoke probes and fixtures		

RECOMMENDED PC SPECIFICATION FOR SOFTWARE

- 2GHz CPU
- 4Gb RAM
- 1024 x 768 x 24 bit graphics
- 1Gb of free hard disc space (5Gb if video clips installed)
- DVD-ROM (required for *Exponent*)
- Windows Vista, Windows 7, Windows 8 or Windows XP(SP3)

- RS232 @ 115,200 Baud port (if connected to TA.XT*plus*) or USB 2.0
- Mouse
- Sound card*
- Internet access for updating purposes*
- Printer*

* Optional

Stable Micro Systems
innovation • education • application