

## Nonwoven & Textile Analyzer

# TSA

**Multifunctional Measuring Instrument**  
for the Measurement of the “Handfeel” as well as  
■ Softness ■ Smoothness/Roughness ■ Stiffness  
of nonwovens and textiles



### Area of Use

- process optimization
- product optimization
- benchmarking tests
- quality assurance
- R&D

### Main User

- Manufacturers of nonwovens
- Chemical Suppliers for nonwoven & textile industry
- Converters of nonwovens
- Machine builder for nonwoven & textile industry

➔ **Substitution of the subjective hand test by an objective measuring method**

## Features

The “handfeel” is a fundamental quality parameter of nonwovens and textiles. It may be characterized by e.g. real softness (e.g. determined by fiber stiffness and softener chemicals), smoothness/structure, stiffness (e.g. fiber behavior, structure), compressibility and “crumpleability”.

The assessment of the softness usually will be performed by a human panel, consisting of a few persons. This test is very expensive, time-consuming, and the results are subjective and influenced by many factors such as culture, personal preferences, and mood.

The **Nonwoven & Textile Softness Analyzer TSA** is an objective measuring instrument and the only existing device, which fulfills all the according requirements in the nonwoven and textile industry. It simultaneously gathers all single relevant parameters, which have an influence on the haptic characteristics of nonwovens and textiles, which are: Softness, Smoothness/Roughness, and Stiffness. An application for particular nonwoven products is, for example, the detection of equal distribution of pulp fibers in z-direction (“disintegration”).

Parameters for those values will be automatically calculated by high-performance PC software.

**The correlation of the measuring results of the TSA to reliable hand panel numbers, determined by experienced hand panels, is excellent (up to 100 %).**

### Device functions/ Measuring results

**3 basic parameters: Softness, Smoothness/Roughness, Stiffness.**

**Algorithms for the computation of HF values\* can be created by emtec based on customer samples (with known and reliable panel assessment).**

\* The HF parameter is a value calculated by means of the TSA software. It represents the overall handfeel and results from a complex mathematical modelling of the concerning panels.

### Advantages

objective measuring method, high reproducibility of the results  
 menu-driven measurement  
 integrated temperature and humidity sensor  
 easy handling, robust construction

### Software EMS

very user-friendly and easy to operate  
 easy handling in quality assurance, e.g. with special QA Software

### Technical data

sample dimension:  $\varnothing$  112.8 mm  
 dimension of device: 440x190x470 mm (H x W x D)  
 weight: 19 kg  
 power supply: 115-230 VAC, 50/60 Hz