



## Story & Products

## 1995

On the 6th of December 1995 founded Franz Silbermayr the company PTI (Paper Testing Instruments Ltd.) in Pettenbach, Upper Austria, with headquarters in the residence of the Silbermayr family and lays the foundation of today's company PTE – Pulp Test Equipment Ltd. / Xell & Einlehner Instruments (PTE Austria).



## 1996

Under the leadership of Franz Silbermayr, a new sheet former on basis of the Gockel sheet former is developed and sold in the following years for over 300 times. The device is now in use in many paper- and pulp laboratories all over the world.

## 1997

A new Schopper Riegler Freeness Tester in high-quality stainless-steel design and digital display for reproducible measuring values is developed and becomes another success.

## 1998

The production area of the company is relocated and more pulp testers e.g. Laboratory Hollander, Equalizers, Disintegrators, Freeness Testers, Sheet Formers, Speed Dryers, etc. are developed and manufactured.

## 2000

Franz Silbermayr acquires the German company Karl Frank Ltd. and founds Frank Prüfgeräte GmbH. With material and rights bought, spare and wear parts can be continued to be delivered and the manufacturing of laboratory test machines now takes place on two locations.

## 2002 - 2004

Due to the good business situation, the Austrian company moves into a larger building and continues research, development as well as production now on 700 m<sup>2</sup>.

The German branch moves into a larger company building and the production and development continues on 800 m<sup>2</sup> production and administration area.

## 2006

In the following years, further machines are manufactured, developed and modernized.



## 2012

Franz Silbermayr sells PTI to an interested party and pursues his second passion in life, the real estate business.

### 2013

Sons of Franz Silbermayr found the company Xell GmbH in Upper Austria, where the manufacturing and development of pulp, paper, board and tissue laboratory devices continues together with a team of experts.



### 2017

Xell GmbH obtains the rights of the company Einlehner and starts the production of the renewed Einlehner AT 1000 Abrasion Testers with integrated touchscreen.

### 2020

After seven thriving years, the new founded company PTE Austria successfully acquires the knowledge, technical drawings and resources from Xell GmbH and continues as PTE - Pulp Test Equipment GmbH - Xell & Einlehner Instruments.

The company re-enters the market under the leadership of Michael Silbermayr, accompanied by his father Franz Silbermayr, a highly motivated and an experienced team as well as long-standing business partners.





## 2021

Franz Silbermayr, passionate developer und salesman, always friendly and happy person, proud father and grandfather, passes on unexpectedly on the evening of the 8th March, 2021 after an intensive, successful and fulfilled life.



*We liked knowing you very much.*

*We find it difficult to let you go.*

*But thinking of you again and again  
will always give us joy.*



After this tragic loss to the Silbermayr family and the Pulp and Paper Laboratory Equipment branch, and with the toughest conditions due to the global COVID pandemic, PTE Austria continues to develop and manufacture in highest quality and supplies to customers worldwide.



*PTE Austria* is a newly established business, on the grounds of the former Xell GmbH, developing, manufacturing and trading laboratory testing instruments for paper, board, tissue and pulp with main focus of manufacturing and developing pulp testing machines and customer specific special devices.

The experienced team is constantly improving in order to meet the high expectations of *PTE Austria's* customers and to deliver the best quality. Although the company is still young, the team consists of experts who all have acquired many years of experience in developing and manufacturing pulp and paper testing equipment.

*PTE Austria's* supplies and products are subject to detailed and strict internal quality control —from the tiniest bolt up to the complex machine.

The manufacturers at the workshop are equipped with the latest and best tools and they are hard working in order to build and assemble devices of precision and refinement never attained before.

*PTE Austria* owns all rights of the former Xell and thus is able to continue to manufacture and further develop the world famous and successful Einlehner devices based on the knowledge of Mr. Hans Einlehner as well as to provide spare and wear parts of Xell devices.

The new base software of *PTE Austria* was matched to the new devices from an external team and is continuously developed further in order to ensure a smooth and user-friendly operation of the *PTE Austria* machines.

*PTE Austria* offers service & maintenance for own, former Xell, Einlehner and third-party devices.

*PTE Austria* cares, stays with the customer from the start and helps in installing, training, troubleshooting, maintaining, optimizing, upgrading or even disposing of the product.



Michael  
Managing Director

Anton  
Director of  
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**Because you can only measure quality with quality.**





### PFI Laboratory Mill

for beating of chemical pulps under standardized conditions and for the defibration of semi-digested raw materials.

#### Applicable Standards:

ISO 5264-2  
TAPPI T248  
SCAN C24  
PAPTAC C7  
DIN-EN 25264-2

Article Code: E.504



### Jokro Mill

for grinding pulp in a laboratory scale according to standards (6 x 16 g).

#### Applicable Standards:

ISO 5264-3  
DIN 54360  
EN 25264-3  
Zellcheming Merkblatt 105/5/60

Article Code: P.107.x



### Laboratory Beater Type „Valley“

for beating of pulp according to standardized conditions.

#### Applicable Standards:

ISO 5246-1  
TAPPI T200m, T205m  
SCAN C25  
CPPA C.2

Article Code: P.505.xxx

## Laboratory Pulper

to dissolve dry samples in suspension on a laboratory scale.

**Applicable Standards:**  
n/a

**Article Code:** P.950.xxxx



## Disintegrator 3l

for disintegration of pulp suspensions according to standardized conditions.

**Applicable Standards:**  
ISO 5263-1  
TAPPI T 205  
SCAN C18/M2  
PAPTAC C.6

**Article Code:** P.401.x



## Equalizer

for stirring permanently and homogenizing disintegrated pulp samples.

**Applicable Standards:**  
Zellcheming Merkblatt V 6/61

**Article Code:** P.402.x







### Freeness Tester „Schopper Riegler“

for determination of freeness and drainage properties of fiber and pulp suspensions.

#### Applicable Standards:

ISO 5627-1

Article Code: P.403.x-xxx



### Freeness Tester „Canadian Standard“ - CSF

for measuring the freeness of pulp suspensions according to the Canadian Standard.

#### Applicable Standards:

ISO 5267-2  
TAPPI T227  
SCAN C21/M4

Article Code: P.404.x



### Sheet Former Rapid Köthen

for the production of laboratory hand sheets of pulp according to the Rapid Köthen method.

#### Applicable Standards:

ISO 5267-2  
DIN 54358

Article Code: P.405.xx

### Sheet Former Rapid Köthen — white water circulation

for the production of laboratory hand sheets of pulp with the Rapid Köthen & white water circulation system.

**Applicable Standards:**

ISO 5269-2  
DIN 54358

Article Code: P.405.Cx



### Sheet Former square or rectangular

for the production of square or rectangular laboratory hand sheets of pulp.

**Applicable Standards:**

ISO 5269-2  
DIN 54358

Article Code: P.506.xxx.xx



### Sheet Former TAPPI

for the production of laboratory hand sheets of pulp according to the Tappi method.

**Applicable Standards:**

TAPPI T205  
ISO 5269/1  
SCAN C26

Article Code: P.506.xxx.xx







### Sheet Press

for dewatering and pressing laboratory hand sheets.

#### Applicable Standards:

ISO 5269-1  
TAPPI T205  
PAPTAC C.4

Article Code: P.104.xxx



### Speed Dryer

for drying paper or pulp sheets or for mass determination of sludge.

#### Applicable Standards:

TAPPI T205

Article Code: P.101.xxx



### Fiber Classifier „Bauer McNett“

for determination of the fiber length of pulp by classification.

#### Applicable Standards:

TAPPI T233  
SCAN M6  
PAPTAC C5V

Can be combined with Somerville!

Article Code: P.503.x

### Shive Content Analyzer „Somerville“

for determination of the fiber length of pulp by classification.

#### Applicable Standards:

TAPPI T275  
TAPPI UM242  
PAPTAC C.11P

With BauerMcNett combineable

Article Code: P.109.xxx



### Haindl Fractionator (original Einlehner)

for determination of splinter content and fiber fractionation.

#### Applicable Standards:

FAK Merkblatt 201  
Zellcheming Merkblatt VI/I/66

Article Code: P.300.xxx



### Chip Classifier

for quick and reproducible sorting of wood chips into classes.

#### Applicable Standards:

SCAN CM 40:01  
TAPPI UM21  
SCAN CM47:92

Article Code: P.100.xxx





### Viscometer

for determination of limiting viscosity of pulps with cubri-ethylenediamine (CED) solution .

#### Applicable Standards:

ISO 5351

Article Code: A.913.xxx



### Tissue Water Absorption Tester

for determination of the water absorption and suction time of tissue samples.

#### Applicable Standards:

ISO 12625-8

Article Code: P.700



### Suction Height Tester „Klemm“

for determination of the suction height of tissue and paper.

#### Applicable Standards:

ISO 8787

Article Code: P.701



## Burst Tester

for determination of the burst strength and the burst energy absorption (BEA) of paper or board.

### Applicable Standards:

Papier:	Karton:
ISO 2758	ISO 2795
TAPPI T403, T807	TAPPI T810, T807
PAPTAC D19P	PAPTAC D29P
SCAN P24	SCAN P25
	FEFCO No.4

Article Code: E.204.xxx



## Universal Micrometer

for measuring the thickness of paper, tissue, board, leather or other material.

### Applicable Standards:

ISO 534, 12625-3  
TAPPI T411  
SCAN P7  
EN 20534  
DIN 53105

Article Code: E.203.xxx



## Tear Tester „Elmendorf“

for measuring the tearing resistance of paper and similar materials.

### Applicable Standards:

ISO 1974  
DIN 53128  
EN 21974  
SCAN P11  
TAPPI T414  
BS 4468

Article Code: E.208.xxx





### Tensile Tester vertical

for determination of the force, tensile resistance, elongation and tensile energy absorption (TEA) in paper, board, tissue or other materials

#### Applicable Standards:

ISO 1924-1/ -2/ -3  
TAPPI T456, T494  
PAPTAC D34  
BS4415/2  
etc.

Article Code: E.202.xxx.xxx.x



### Tensile Tester horizontal

for determination of the tensile resistance in dry or wet state, elongation and tensile energy absorption (TEA) in paper or tissue.

#### Applicable Standards:

ISO 1924-2  
UNE-EN ISO 12625-4 / 5  
TAPPI T456, T494  
PAPTAC D34  
BS4415 / 2  
etc.

Article Code: E.207.xxx



### Bending Stiffness Tester

for determination of the bending resistance and stiffness of paper and paperboard.

#### Applicable Standards:

ISO 2493  
SCAN P29  
DIN 53121  
BS 3748  
TAPPI T556  
NFQ 03-048  
IS 3748

Article Code: E.119

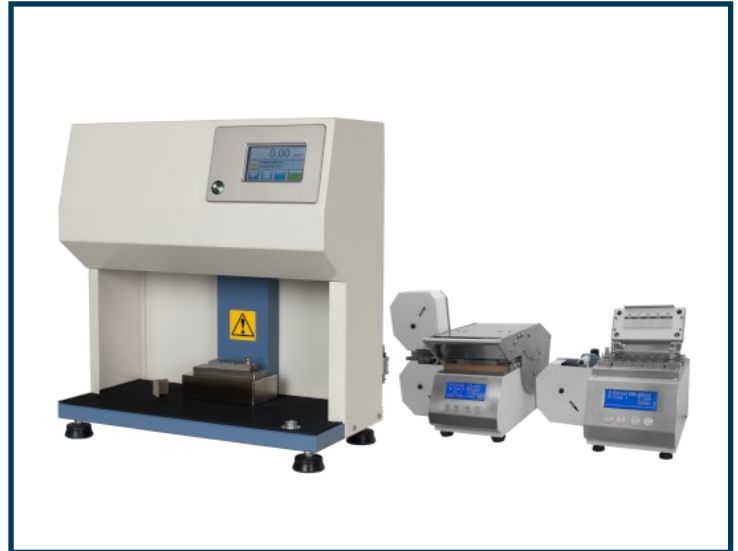
## Internal Bond Tester

for determination of the internal bonding force of paper.

### Applicable Standards:

TAPPI T569 om-09  
TAPPI T833

Article Code: E.201.x.xxx



## Smoothness Tester „BEKK“

for determination of the smoothness of paper or cardboard according to the BEKK method.

### Applicable Standards:

ISO 5627  
DIN 53107  
TAPPI T475

Article Code: E.206



## Roughness & Air Permeability Tester „Bendtsen“

for measuring the roughness and air permeability according to the Bendtsen method, Gurley porosity is calculated from the measured values.

### Applicable Standards:

ISO 5636, 8791  
TAPPI UM535  
SCAN P21, P60

Article Code: E.205.xxx





### Static Friction Tester bidirectional

for measuring the static friction between two materials in two directions.

#### Applicable Standards:

TAPPI T503, T815, T549  
ASTM D202  
NF Q03.083

Article Code: P.108.100.x



### Twin/Double Folding Endurance Tester

for determination of the folding resistance of paper according to the Schopper principle.

#### Applicable Standards:

ISO 5626  
TAPPI T523  
NF Q03-062  
NF ISO 5626  
IS 1060

Article Code: P.103



### Spectrophotometer

for determination of the optical properties such as brightness, opacity, fluorescence, color, color differences and whiteness of tissue, paper, cardboard or similar materials

#### Applicable Standards:

ISO 2469–2471, 3688, 11475/11476,  
ISO 12625-7, 12626-15  
TAPPI T519, T527, T534  
DIN 53145–53147, 54500  
etc.

Article Code: N.306.xx



## Gloss Meter

for determining the gloss properties of paper and board according to Lehmann.

### Applicable Standards:

TAPPI T480  
DIN 54502

Article Code: D.902.STGLxxxx



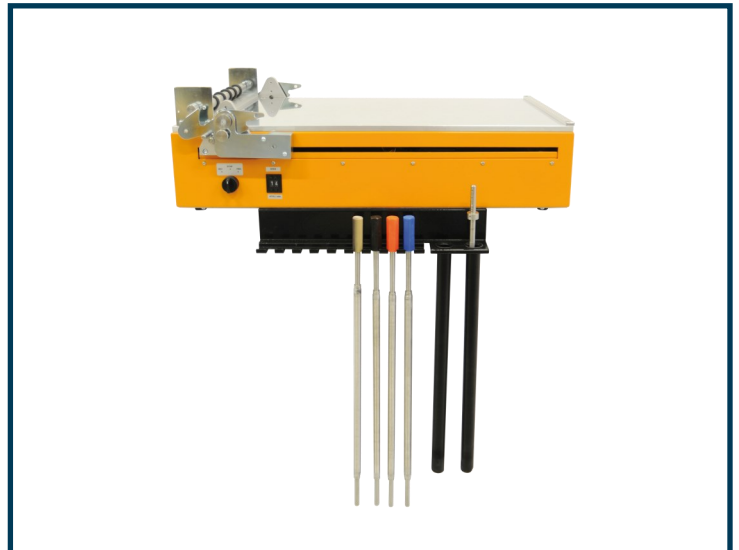
## Metering Bar Coater

for preparing coated samples.

### Applicable Standards:

n/a

Article Code: P.114



## Luminous Table

for the visual examination of dirt specs and shives in paper & board samples by transmitted light.

### Applicable Standards:

ISO 5350

Article Code: D.806.xxx





### Water or Oil Absorption Tester „Clamp Cobb“

for measuring the water or oil absorption of sized samples.

#### Applicable Standards:

ISO 535  
TAPPI T441  
SCAN P12  
EN 20535  
DIN 53132

Article Code: P.307.100-K



### Water or Oil Absorption Tester „Cobb Unger“

for measuring the water or oil absorption of sized samples.

#### Applicable Standards:

ISO 535  
TAPPI T441  
SCAN P12  
EN 20535  
DIN 53132

Article Code: D.511.xxx



### Dennison Waxes

for measuring the dust and surface adhesion of paper and cardboard samples.

#### Applicable Standards:

TAPPI T459

Article Code: P.900.xxx

### Short Span Compression Tester

for measuring the compression strength on paper or board samples.

**Applicable Standards:**

ISO 9895  
TAPPI T826  
SCAN P46  
DIN 54518  
APPITA/AS 1301.450

**Article Code: E.215**



### Crush Tester table model

for measuring the compressive strength of board and corrugated board.

**Applicable Standards:**

ISO 3035, 3037, 13805, 13192  
TAPPI T808, T809, T811, T818, T821, T825, T893  
FEFCO N° 6-8 & 11  
AFNOR 23035  
etc.

**Article Code: E.200.TM**



### Box Compression Tester

for measuring the compressive strength of corrugated boxes and other types of packaging.

**Applicable Standards:**

ISO 12048  
TAPPI T804  
DIN EN 22872  
UNE 57163/5  
FEFCO N° 50  
AFNOR H13-00

**Article Code: E.212.xxx**





### Concora Medium Fluter

for preparing fluting samples for the CCT or CMT.

#### Applicable Standards:

ISO 7263  
TAPPI T809  
SCAN P27  
PAPTAC D29  
APPITA/AS 1301.434s

Article Code: P.216.xxx



### FCT Cutter

for preparing corrugated board samples for the flat crush test (FCT).

#### Applicable Standards:

ISO 13821, 1924-2, 3035, 3037, 534, 7263  
DIN 3035, 7263  
EN 3035, 7263  
FEFCO 8, 11

Article Code: E.226.xxx



### ECT Cutter Type „Billerud“

for preparing samples for the edge crush test (ECT) pneumatically.

#### Applicable Standards:

ISO 3037

Article Code: D.312.xxx



## ECT Sample Saw

for preparing very precise and exact corrugated board samples for the edge crush test (ECT) automatically.

### Applicable Standards:

ISO 13821  
DIN EN ISO 3037  
DIN 53149  
TAPPI T811, T823, T838, T839  
FEFCO No. 8

Artikel Code: P.302



## Circular Cutter

for preparing circular samples for grammage determination.

### Applicable Standards:

ISO 13821, 1924-2, 3035, 3037, 534, 7263  
DIN 3035, 7263  
EN 3035, 7263  
FEFCO 8, 11

Artikel Code: D.513.xxx



## Round Sample Punch manual

for preparing round tissue, paper or board samples for grammage determination.

### Applicable Standards:

ISO 536  
TAPPI T410

Artikel Code: P.102.xxx





### Sample Punch

for the fast and practical pneumatic preparation of paper or board samples.

#### Applicable Standards:

ISO 536, 1974, 2493, 5626  
TAPPI T414, T556

Artikel Code: P.105.xxx / P.106.xxx



### Sample Punch –large dimensions

for fast and practical pneumatic preparation of large dimension samples or A4 (210 x 297 mm) samples.

#### Applicable Standards:

DIN A4 (210 x 297 mm)  
etc.

Artikel Code: P.101.xxx



### Double Blade Cutter

for preparing sample stripes with a size of 12.7, 15, 25 mm and 50 mm (especially for tissue tensile tests).

#### Applicable Standards:

ISO 1924, 5626, 9895, 12625  
TAPPI T456, T494, T549

Artikel Code: E.209.xxx

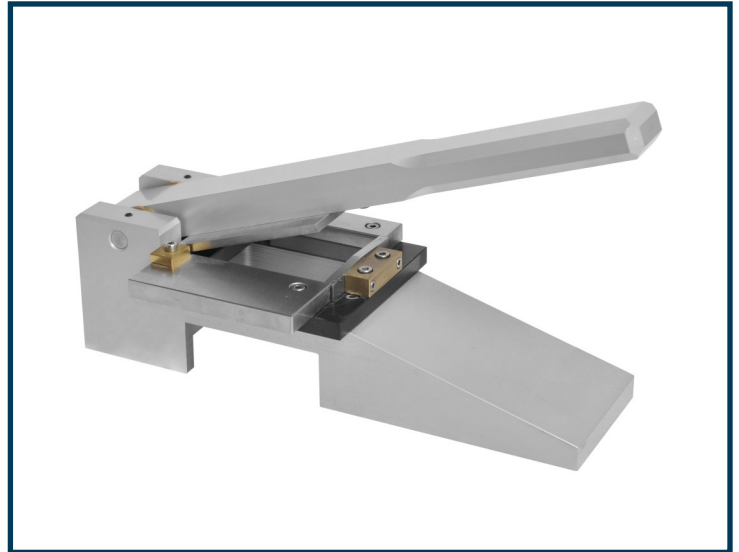
### Hand Cutter for Elmendorf Tear or Bending Stiffness Tester

for preparing samples for the Elmendorf Tear Tester or for the Bending Stiffness Tester.

**Applicable Standards:**

n/a

Artikel Code: P.301.xxx



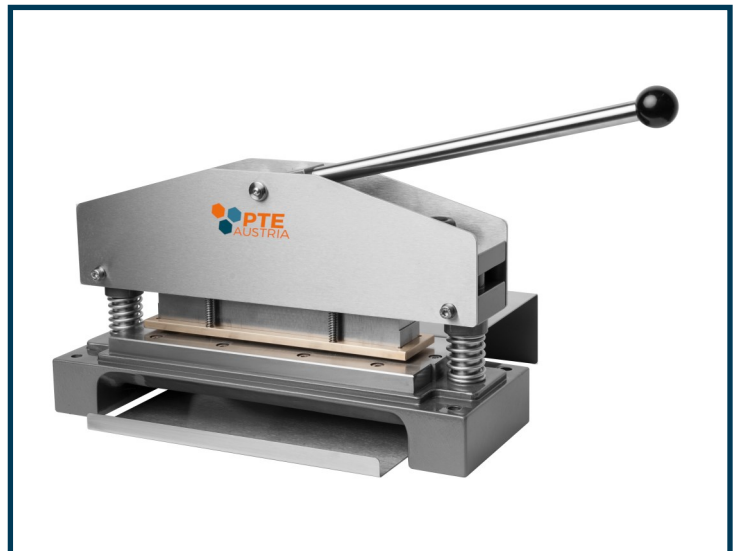
### Punch & Die Cutter

for preparing sample strips of paper or board for e.g. tensile tests, CCT, RCT, CMT, IBT, etc.

**Applicable Standards:**

n/a

Artikel Code: P.501.xxx



### Double Wheel Cutter

for preparing sample stripes of 12.7, 15, 25, 50 mm or 76 mm (especially for wet tissue absorption tests)

**Applicable Standards:**

ISO 1924  
SCAN P38

Artikel Code: N.303.xxx / N.304.xxx





### Guillotine Cutter

for generally preparing paper or board samples.

#### Applicable Standards:

n/a

Artikel Code: D.311.xxxx



### Muffle Furnace

for determination of the ash content of paper or pulp samples.

#### Applicable Standards:

ISO 2144:1997

Artikel Code: L.803.xxx



### Drying Cabinet

for drying of samples under standardised temperature.

#### Applicable Standards:

ISO 5630-1:1991

Artikel Code: L.801.xxx



### Precision Balance

for precise weighing of samples in laboratories.

**Applicable Standards:**

n/a

Artikel Code: C.963.xxx



### Analytical Balance

for accurately analyzing samples in laboratories.

**Applicable Standards:**

n/a

Artikel Code: C.963.xxx



### Platform Balance

for weighing different material e.g. initial chip content after the chip classifying process.

**Applicable Standards:**

SCAN-CM 40:01

etc.

Artikel Code: D.963.xxx





### Moisture Analyzer

to determine the moisture content in small samples.

#### Applicable Standards:

n/a

Artikel Code: C.963.xxx



### Humimeter for paper & cardboard

to determine the moisture content in e.g.: paper stacks, paper rolls, etc.

#### Applicable Standards:

n/a

Artikel Code: A.971.xxx



### Humimeter for biomass

to determine the water content of biomass, e.g. wood chips.

#### Applicable Standards:

n/a

Artikel Code: A.971.BMA2

## Desiccator

to check samples for moisture during the cooling process.

**Applicable Standards:**

n/a

Artikel Code: A.938.xxx



## Büchner Funnel Set

to determine the consistency of pulp.

**Applicable Standards:**

n/a

Artikel Code: P.935.xxx





### Laboratory Pulper 1000 I

to dissolve dry pulp material in large pulp suspension volumes (1000 l).

**Applicable Standards:**  
n/a

**Artikel Code:** P.950.1000



### Luminous Table, special ergonomic design

to visually examine dirt and splinters in paper and cardboard samples in transmitted light.

**Applicable Standards:**  
ISO 5350

**Artikel Code:** P.806.700



### Luminous Wall

to visually assess protective particles and formation of profile samples over a large area.

**Applicable Standards:**  
n/a

**Artikel Code:** P.806.500



### Chip Classifier, semi automatic

to sort wood chips into classes.  
Semi automatic process with electronic control panel and weighing balance.

#### Applicable Standards:

SCAN CM 40:01  
TAPPI UM21  
SCAN CM 47:92

Artikel Code: P.100.SEMI.xx



### Flotation Cell

to determine the flotation behaviour of secondary pulps contaminated by printing color, coating particles, stickies, etc.

#### Applicable Standards:

n/a

Artikel Code: P.802



### Disintegrator 10 l

to disintegrate pulp suspensions in large quantities (10l)

#### Applicable Standards:

ISO 5263-1  
TAPPI T 205  
SCAN C18/M2  
PAPTAC C.6

Artikel Code: P.401.10x





### Resin Tester

to determine the "caking capacity" of resin for the paint and lacquer industry.

#### Applicable Standards:

n/a

Artikel Code: P.601



### Rapid Köthen Move

to prepare laboratory sheets from pulp rapidly for at various locations for quality testing.

#### Applicable Standards:

ISO 5269-2

DIN 54358

Artikel Code: P.405.MOB-xx



### Abrasion Tester AT 1000 TS (original Einlechner)

to determine the abrasion of fillers and pigments with platelet-shaped components for comparison and quality control.

#### Applicable Standards:

Zellcheming-Merkblatt V/27.5/75

Artikel Code: P .111.xxx

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