

## Ash Content Analyzer

# ACA

Fast, easy and accurate determination of

- total mineral filler content
- percentage content of the individual filler components

of typical mineral filler and pigment content in paper and board, for example

- calcium carbonate • kaolin / talcum • titanium dioxide

without combustion



### Advantages

- **Nondestructive measuring method without combustion**
- **Quantitative determination of individual fillers**
- **Availability of the results within seconds** (approx. 30 sec.)
- **High accuracy of measurements** (approx.  $\leq \pm 1-2 \%$ )
- **Easy handling** (self-explanatory operation)
- **Results independent of operator**
- **Easy portable** (in a trolley)
- **Savings in time and energy** (compared to combustion)
- **Optimal process control due to instant availability of measuring results**
- **Efficient calibration of online ash sensors**  
(especially in case of frequent grade changes)

→ **Replacement of the time-consuming traditional combustion method**

## Features

With the combustion method, which is traditionally applied in the paper industry according to ISO 2144, DIN 54370, TAPPI T 413 and 211, the total content and few selected individual fillers can only be determined through an extremely time- and energy-consuming and in routine operation relatively inaccurate combustion of the samples at different temperatures (+/- 5%, operator dependent!). The combustion method is also disadvantageous due to its destructive measuring procedure.

By the use of the emtec **ACA Ash Content Analyzer** with its really new and innovative measuring procedure the total ash content (fillers and pigments) but also the percentage content of the typical fillers in the paper industry can be determined within seconds **without combustion of the samples, i.e. nondestructive**.

The quick measuring procedure leads to an **instant availability of measuring results** and therefore allows for an **indeed immediate reaction to changes in the process**.

- Immense material savings can be achieved through the **reduction of process fluctuations**.
- The **consumption of fillers** can be **reduced**, as the immediate availability of results and the high accuracy of the ACA enables the **narrowing down** of the **specifications** for the filler content in the finished product, resulting in a much more efficiently organized process optimization (e.g. retention optimization).
- **Costs for personnel and energy** for the combustion process can be **saved**.

Thus, the use of the new measuring device guarantees a **fast "return on investment"** by a substantial **reduction of costs in material, man power, time, and energy** with a simultaneous increase of the measuring accuracy compared to traditional methods.

*Display of results:  
Mineral filler content of a  
paper sample (example)*

measurement	setup	information
label	sample 1	
comment		
grammage	80.1	
Start		
total filler content	<div style="width: 27%;"></div>	<b>27 %</b>
calcium carbonate	<div style="width: 12%;"></div>	<b>12 %</b>
titanium dioxide	<div style="width: 5%;"></div>	<b>5 %</b>
clay / talcum	<div style="width: 10%;"></div>	<b>10 %</b>
barium sulfate	<div style="width: 0%;"></div>	<b>0 %</b>
status	<b>1.1 ready</b>	

## Technical Data

<b>Measuring principle</b>	X-ray fluorescence analysis
<b>Measurable mineral fillers</b>	calcium carbonate, titanium dioxide, kaolin / talcum, barium white
<b>Accuracy of Measurement</b>	approx. $\leq \pm 1-2 \%$
<b>Measurement time</b>	approx. 25 sec. Simultaneous recording of ambient temperature and humidity at each measurement
<b>Grammage</b>	maximum 1000 g/m <sup>2</sup>
<b>Dimension</b>	approx. 315 x 400 x 280 mm (width x height x depth) Depth with opened display: approx. 415 mm
<b>Weight</b>	approx. 14 kg
<b>Power supply</b>	100 - 240 VAC (50/60 Hz)