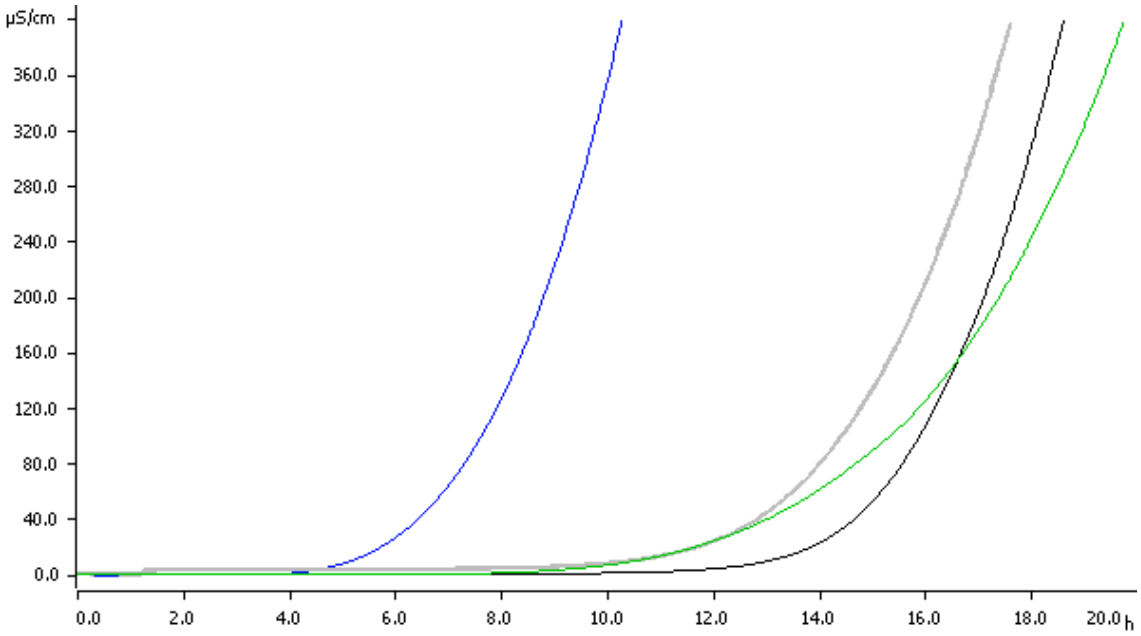
Titration Application Note R-026

Thermostability of PVC Pellets

Rapid and safe thermostability determination of polyvinyl chloride (PVC) using the dehydrochlorination procedure at 200 °C.



The thermal stability of raw or processed PVC provides information about the quality of the plastic. Higher stability times can be correlated with longer lifespans. With the 895 Thermomat, the dehydrochlorination rate at elevated temperatures can be determined within a short time. Quality deviations in the purchased raw material as well as in the end products can be detected (e.g., the usage of higher process temperatures or a longer residence time in the extruder). The measurement is based on the standard EN ISO 182-3. The 895 Thermomat has been optimized for this application regarding three important points:

- Safety: Maximum user safety thanks to an aluminum heating block instead of an oil bath.
- Handling: The control as well as the evaluation is done automatically on the PC.
- Time-saving: Eight samples can be measured in parallel.

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Method description

Sample

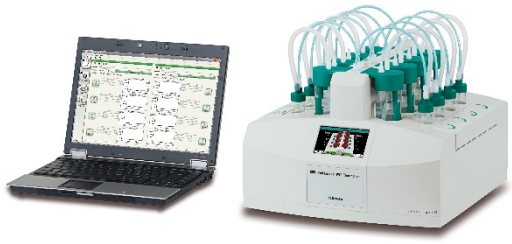
PVC Pellets

Sample preparation

No sample preparation is required.

Configuration

895 Professional PVC Thermomat	2.895.0010
Equipment for the determination of the temperature correction	6.5616.100
Measuring vessel cover with built-in conductometric measuring cell	6.0913.130 (8x)



Analysis

The sample (0.5 g ± 0.05 g) is first weighed in the reaction vessel. Then, the tubes are connected, inserted into the heating block, and the analysis can be started.

Parameters

Sample size	0.5 ± 0.05 g
Measuring solution	60 mL
Temperature	200 °C
Temperature correction	auto
Gas flow (air)	7.0 L/h
SOP criteria conductivity	Endpoint and 400 µS/cm
Evaluate stability time	yes
Conductivity change	50 µS/cm

Results

Sample	Mean value / h	n	s(rel) / %
Pellets green	13.55	4	2.02
Pellets blue	6.66	2	0.57
Pellets grey	13.33	2	1.1
Pellets white	14.81	4	0.72

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