

# Laboratory Analysis



## **Analysis of Plastics**

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Moisture & Water Determination

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Density Measurement

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Thermal Values

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## **Measurement Solutions** for the Plastics Industry

**METTLER TOLEDO**

# Increasing Quality and Productivity

## From Raw Materials to Finished Products

Meeting customer needs is the foundation for a successful business. In the competitive plastics industry, customization of your products and processes can set your business apart from the competition. To accomplish this, you need reliable equipment that will help improve production, simplify processes and minimize costs. METTLER TOLEDO offers innovative solutions to suit all applications and budgets.

Let us show you how analysis of incoming raw materials, line material and finished products help ensure a properly performing product, minimizing waste and saving money.

### Applications for the Plastics Industry

Application	Moisture Analyzer	Karl Fischer Titration	Titration Excellence	Thermal Analysis	Analytical/Precision Balances
Density determination of raw materials					✓
Reference method for moisture/water content		✓			
Loss on drying moisture determination	✓				
Oxidation induction time				✓	
Reaction enthalpies				✓	
Compositional analysis				✓	
Moisture content prior to conditioning	✓			✓	
Determination of volatile matter	✓				
Melting point				✓	
Quality of filler material				✓	
Failure analysis				✓	
Contamination testing				✓	
Elongation tests				✓	
Ash content testing				✓	✓
Final quality control tests		✓		✓	
Shrinkage				✓	
Water content in polyols		✓			
Hydroxyl content of polyols and polyether polyols			✓		
Total chlorine in isocyanates			✓		
Acid/base balance of polyols			✓		
Hydrolyzable chlorine content			✓		
Unsaturation/molecular weight polyols			✓		
Acid value of polymers and pre-polymers			✓		
Isocyanate content			✓		
Alkalinity/basicity in polyols			✓		
Sample preparation					✓

# Analytical Solutions for Ensuring Product Quality

## Moisture Determination

### Item

**HR83 Plastic Halogen Analyzer**



### Description

The HR83 Plastic analyzer allows you to quickly measure the moisture content during production and conditioning.

- Fulfills ASTM standards for loss on drying
- Readability of 0.001 % moisture content (0.001 % MC = 10ppm)
- Preprogrammed with plastics application methods for simple operation

## Titration Solutions

### C30 Coulometric Karl Fischer Titrator



Introducing One Click Water Determination™ – METTLER TOLEDO has an easy-to-use solution for creating a moisture analysis reference method, ensuring quality control of raw materials and for determining low water content of polymers with a high degree of accuracy.

- Efficient user training – Daily routines can be set up as icons on the HomeScreen for One Click operation
- Efficient data handling – Export results to spreadsheet or LIMS, generate reports and easily recall archived results with LabX Software
- Efficient automation – Automate the analysis of series of samples with the optional Stromboli Oven Sample Changer and separate temperature programs enable the differentiation of adherent versus total water

### Titration Excellence



One Click Titration™ – Performing many different analyses on polymers and polymer precursors.

- Efficient analysis of challenging applications – Traditionally time consuming and difficult analyses, such as isocyanate content, can be automated with ease thanks to a modular design
- Automation capabilities – Completely automate the preparation and analysis of samples with Rondolino or Rondo, freeing analyst's time
- Short learning time – The HomeScreen allows you to set up and see only what you need to perform daily analyses, reducing training time

## Laboratory Weighing

### Item

#### Excellence Balances



### Description

METTLER TOLEDO is the world-leading manufacturer of analytical and precision balances, and our goal is to make weighing as simple as possible. Our balances assist with the following applications:

- Density & Specific Gravity
- Ash Content tests
- Sample preparation for viscosity measurements
- General sample preparation

## Thermal Analysis Solutions

### Polymer DSC Differential Scanning Calorimeter



Differential Scanning Calorimetry (DSC) efficiently helps to ensure quality during production and processing, minimizing waste and thereby saving money. The Polymer DSC can help you gain control in the following areas:

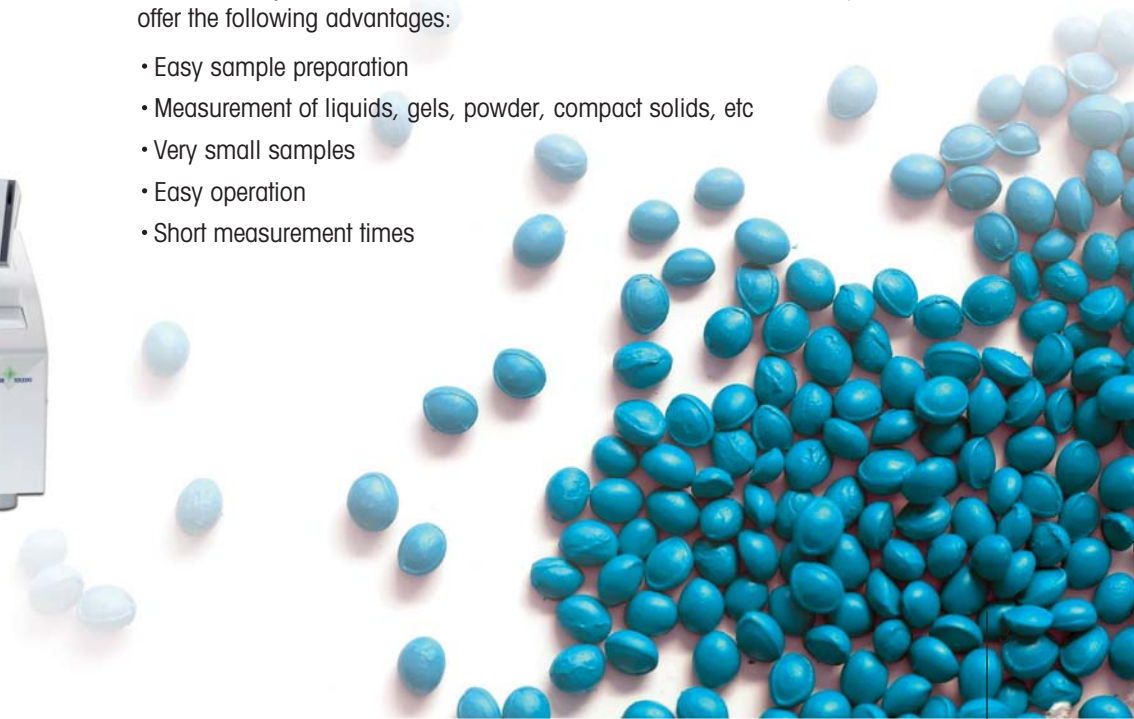
- Receipt of raw materials, additives and chemicals
- Prototypes and tool making
- Process control
- Quality control of finished products

### TGA/DSC1 Simultaneous TGA, DSC Measurements



Thermal analysis includes a number of different measurement techniques and offer the following advantages:

- Easy sample preparation
- Measurement of liquids, gels, powder, compact solids, etc
- Very small samples
- Easy operation
- Short measurement times



## TotalCare Service Solutions

Don't let minor problems become costly repairs, lost man-hours and system downtime! A METTLER TOLEDO TotalCare Service Plan purchased with your instruments gives you all the protection you need to remain profitable and maintain accurate results.

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