



TORONTECH

DENSITY GRADIENT ANALYZER - TORONGRADIENT™ - D1505



ToronGradient™-D1505 Density Gradient Analyzer is engineered for accurate density evaluation of solid plastics. It also enables rapid comparison of slight density variations between similar materials.

APPLICATIONS

Applications

1. Precise density analysis of high molecular weight materials
2. Density assessment of natural and synthetic fibers
3. Density testing of resin-based products
4. Quality control for material density consistency

Standards

1. ASTM D1505
2. ISO 1183-1
3. ISO 11542-2

Density Gradient Analyzer

Principle

A glass test tube is filled with two fully miscible liquids, creating a density gradient—lower at the top and higher at the bottom, varying in a linear pattern. A precisely calibrated glass float with a known density is placed into the column. The float settles and remains suspended at the point where the solution's density matches its own.

FEATURES

Density Gradient Analyzer - ToronGradient™ -D1505 Features

- 1. Density Gradient Analyzer utilizes a high-precision microcontroller for temperature regulation, with integrated heating and cooling systems. The stirring mechanism features an external drive with internal spray mixing, ensuring uniform temperature control within $\pm 0.1^{\circ}\text{C}$ while minimizing vibrations in the temperature bath.
- 2. The bath's inner chamber is constructed from high-transparency resin, offering excellent thermal insulation, clear visibility, and strong resistance to vibration.
- 3. Compared to immersion or float-sink methods, the density gradient technique offers greater accuracy, simplified operation, and a broader measurement range.

TECHNICAL SPECIFICATIONS

Model	ToronGradient-D1505
Measurement range	0.80g to 2.70g/cm ³
Accuracy	0.0001 g/cm ³
Density gradient tube dimensions	ID 50mm, length 900mm
Graduation range	0-850mm, resolution: 1mm

Model	ToronGradient-D1505
Number of test stations	3 (or more)
Temperature range	20°C to 30°C
Temperature accuracy	±0.05°C
Standard glass floats	0.80g to 2.70g/cm ³ , accuracy 0.0001 g/cm ³



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