

Gel Time Meter and System Components

The precise, convenient way to determine Gel Time of thermosetting compounds in accordance with ASTM D3056-85



The determination of the gelation point for thermosetting compounds is critical in evaluating the rate of polymerization for materials such as resins, waxes, varnishes, styrenes, monomers, potting compounds, melamine, formaldehydes, unsaturated oils, thermosetting foodstuffs, and other polymerizable materials. The gelation point is usually characterized by a sudden, pronounced increase in material viscosity (thickness).

The gelation point can help determine shelf life of a substance by plotting the log of gel time vs. $1/t$ (absolute temperature). Simply determine gel times at two or more elevated temperatures and extrapolate to ambient. The points should fall into a straight line. A Gel Time meter provides a highly reliable means for measuring the gel time defined as the time for the material under test to reach the incipient gelled state at a constantly, controlled temperature.

- Ideal for production, quality control and research work
- Simple, Intuitive operation
- Determine precise gelation point for thermosetting compounds
- Reproducible results within $\pm 1\%$
- Automatic shut-off at Gel Point for error-free testing
- Audible and visual indication at gel point
- Self-indicating to nearest second
- Fully automatic temperature controller available (Model 2295A)
- Portable Design: Compact and lightweight

Gel Time Meter and Components

A typical system used to measure the gelation point consists of the following items:

- The test sample is placed into a test tube and immersed within a constant temperature bath
- A rotating glass rod spindle is placed into the sample
- The glass rod is attached to a torsion wire being driven by a synchronous motor rotating at 1 rpm
- Timing commences and the Gel time meter monitors the test until the gel point has been reached
- The Gel Time is displayed and a beeper and indicator light provide audible and visual indication of the gel time being reached

SPECIFICATIONS — Model 2295A Temperature Controller

Display	4 1/2 digit LED 1/2" high Two lines of 16 characters. Four-digit process-value. Four-digit setpoint value
Temperature Range	32 to 1,562° F (0 to 850° C)
Accuracy / Resolution	$\pm 1^\circ$ C (0 to 325° C) / 0.1° for Centigrade scale
Input Sensor Type	K Type Thermocouple
Power	120 VAC, 50/60 Hz



Model 2295A Digital Temperature Controller

The Model 2295A provides the ultimate in safe, automatic, variable temperature control. It is the ideal way to provide temperature bath control for gel time testing. Simply set the front panel to the desired set point (up to 315° C) and the 2295A maintains precise temperature regulation to within $\pm 0.2^\circ$ C after temperature stabilization.

Catalog No.	Description
22A	Gel Time Meter, 120V/60HZ
22A/50	Gel Time Meter, 120V/50HZ
22A-240	Gel Time Meter, 240V/60HZ
22A-240/50	Gel Time Meter, 240V/50HZ
2295A	Digital Temperature Controller
2296	Thermocouple Type K with 5 Foot Coil Cord
22A Kit A	Start up Kit-(12) Test Tubes (2232-5),(12) Stirring Rods (2242-1), (12) Plastic Sleeves,large & small (2242-2), (12) Allen Set Screws (2242-5), (1) Allen Wrench Small, (0.035")(2232-31)