

# PREMIER™ ESR

Encapsulated Sample Rheometer

▶ The Premier™ ESR is designed for the composite, thermoset, and thermoplastic industries. The ESR can characterize resins and composite materials in a single test, measuring dynamic mechanical properties before, during, and after cure.



▶ The ESR is an instrument for Quality Control and Research & Development. Data provided includes: viscosity, gel time, cure time, reaction rate, final modulus and glass transition temperature. The ESR's advanced temperature control system allows measurements under isothermal and nonisothermal conditions.

# PREMIER™ ESR

Encapsulated Sample Rheometer



## Performance

Whether evaluating materials from new sources or checking the quality of shelf-aged materials, the Premier™ ESR provides optimum curing conditions for consistent product quality. The instrument provides testing under isothermal conditions, temperature ramp and hold, and can mimic the cure of an oven or autoclave. Users can determine the glass transition temperature (Tg) immediately after cure by measuring the viscoelastic properties during a temperature ramp. In addition, it meets ASTM D7750 Standards and includes pressure transducer for pressure measurement.

## Features

Test under true isothermal conditions

Check quality of shelf-aged materials

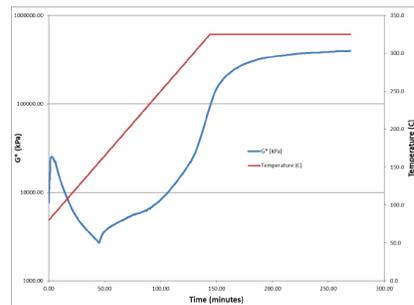
Process Simulation

## Benefits

Important for determining state of cure and optimum viscosity, as many reactions are highly exothermic and require precise temperature control

Reduce waste, improve efficiency, and reduce cost

Testing in tandem with production during long cure cycles can help ensure complete cure in more efficient times



## Specifications

Heating Rate:	0.36 °F/min. (0.20 °C/min.) to 90 °F/min. (50°C/min.) 54 °F/min. (30 °C/min.)	Electrical:	100/110/120/130 VAC ±10%, 60 ±3 Hz, 20 amp single phase 200/220/240/260 VAC ±10%, 50 ±3 Hz, 10amp single phase 80
Max Cooling Rate:	Torque (S', S'', S*), Tan(Delta), Dynamic Viscosity (η', η'', η*),	Air Pressure:	psi (5.6 kg/cm 2551 kPa minimum
Measurements:	Shear Modulus (G', G'', G*), Temperature (°C or °F), Strain (degrees, %, fractional strain), Frequency (cpm, Hz, radians/sec), Pressure (kPa, psi)	Dimensions:	W: 22 in (56 cm), H: 48 in (122 cm), D: 25 in(64cm)
		Weight:	Net 346 lb (157 kg), gross 616 lb (280 kg)
		Sample Cavity:	3.5 ccm
		Sample Dimensions:	41 mm in Diameter, 2.6 mm Nominal Thickness
		Temperature Range:	Ambient to 662°F (350°C)