

Pilot-scale continuous processing for research, development and production in the powder coatings industry.

The PRISM TSE 24 Powder Coatings (PC) twin-screw compounders are bench-top units pre-wired with a manual control panel.

The open-barrel design promotes simple screw removal and easy, efficient cleaning.

PRISM TSE 24 PC

Pilot-scale twin-screw extruders and ancillaries



Applications:

- Powder coatings
- Thermosets
- Resin development

Materials:

- Epoxy resins
- Polyester resins
- Polyurethane resins
- Hybrid formulations

TSE 24 PC Twin-screw Extruders

The PRISM TSE 24 PC extruders are designed for bench-top operation. The horizontally split barrels, 20:1 L/D are quick to open, giving easy access to screws and process contact surfaces for cleaning or configuration changes.

A simple, manual control panel houses controls and instruments to operate the extruder and feeders. A plc-controlled version with touch screen operator interface is available for special testing needs.

Low maintenance, brushless variable speed AC motors drive the screws at up to 500 rpm.

Thermo Electron Corporation is a leading supplier of equipment and instruments to the Polymer, Powder Coatings, and Chemical industry, worldwide.

Thermo Electron (Stone) UK has a fully equipped Technology Centre for customer trials on PRISM equipment, and with worldwide representation, Thermo Electron Corporation supports customers globally.

Technical Specifications

PRISM TSE 24 PC

Ancillary equipment

Thermo Electron offers a range of ancillary equipment to integrate with the PRISM TSE 24 PC twin-screw extruder, including pre-mixers, feeders and chill rolls. Thermo Electron has the ability and experience to design other non-standard ancillaries for special applications.

Pre-mixers

PRISM high-speed mixers, are available as bench-top pilot change bowl mixers in 3 or 5 liter sizes or with fixed bowls in 10 to 40 liter versions.

Metering feeders

Volumetric feeders can be integrated into the control system, and gravimetric feeders can be fitted.

PRISM chill rolls

Designed to match the TSE 24 PC, a free-standing Chill Roll is available, with easily removed belt and flaker.



Specifications		Option 1	Option 2
Barrel length	L/D	20:1	30:1
Barrel bore diameter	mm	24	24
Screw diameter	mm	23.6	23.6
Channel depth	mm	5.15	5.15
Centre-line spacing	mm	18.75	18.75
Centre-line to radius ratio		1.56	1.56
Maximum screw speed	rpm	500	500
Power at maximum screw speed	kW	4.0	4.0
Barrel zones		4	5
Heater rating	W	24 x 350	28 x 350
Extruder dimensions			
L x W x H	m	1.7 x 0.6 x 1.75	1.9 x 0.6 x 1.75
Scale-up data			
Internal free volume	cm ³	228	274
Typical output	kg/h	5 to 100	5 to 100
Services			
Electrical power	Volt/ph/Amp	400V/3ph/32A	400V/3ph/32A
Extruder cooling water 20°C	Liter/min	5	5
Chill rolls cooling water 4 - 10°C	Liter/min	25	25

Thermo Electron Corporation

Material Characterization

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