



Heating Block PL2 according to DIN ISO 8130-6 (DIN 55 990)

Determination of the gel time of powder coatings



Heating block PL2



Temperature Controller with Stopwatch and Surface Sensor Input

The gelation of powder coatings in accordance with DIN ISO 8130-6 (DIN 55 990) is defined as the amount of time required to transfer a specific volume of a powder coating upon melting under defined conditions to a non-deformable state.

To determine these gel time of Powder coating, our Heating Block PL2 is used according DIN ISO 8130-6 with a spherical depression (trough).

With the temperature control unit with integrated stopwatch TCT-1, the temperature of the heating block is optimally controlled. In a heated block PL2 is a security - temperature limiter installed with 270°C.

Testing procedure using the Heating Block PL2

The Heating Block PL2 should be protected against drafts, ideally with a fire-proof cabinet that is open to one side. The Heating Block PL2 is then heated to the desired temperature (typically 180°C or another suitable temperature, which normally should be divisible by 10 min.) using the TCT-1 temperature control system. Using a spatula, a resin sample of 0.25 ml is placed into the depressions and a stop-watch is started. Stir the resin in circular manner from the outside towards the inside of the depression. The stirrer should regularly be pulled upwards to test if the resin still follows the rod and forms threads. The gel-point/gel-time is reached, when the resin breaks in a rubber-like fashion instead of forming threads or if the sample detaches from the depression. At this stage, the stop watch is halted and the time is recorded in minutes and seconds, along with the temperature at which the test was performed. To control the accuracy of the temperature in the depression of the Heating Block PL2 and to calibrate the system melting salts should be used.

According to the standard d-camphor can also be used at 180°C as the test substance.

Release agent, such as an aerosol dispersion of polytetrafluoroethylene.



Technical Data

Heating Block PL2

Heating Block PL2 according to DIN ISO 8130-6 Art-No. 200.30.50	
Temperature range	30.0°C ... 200.0°C (on request 250.0°C)
Power supply	230V / 50 Hz or 115V / 60 Hz, $\pm 10\%$
Heat power	400W
Dimensions	Diameter 130mm, height 85mm
Weight an about	~ 1.66 kg
Melting salts Various	e.g. 140 - 180°C

Temperature control unit TCT-1 with stopwatch

TCT-1 Item No.	200.41.01
Power supply	230VAC, 50/60 Hz or 115VAC 50 / 60 Hz
Power consumption	600W with connected heating block PL2
Connectors	8 Pole Binder connector for connecting the heating block PL2
Sensor	Pt100, EN60751
Temperature range	30.0°C ... 200.0°C (on request 250.0°C)
Accuracy	$\pm 0.5^\circ\text{C}$
Additional measurement	1 x type K, EN 60584, for the surface temperature
Main switch	on the rear panel
Fuses	2 pieces F3,15A L250VAC
Dimensions	257 x 271 x 103 mm
Weight	~ 3.4 kg
Electrical safety	2006/95/EC, 2004/108/EC, EN 61010-1:2001 61010-2-010:2003 EN, EN 61326-1:2006

Integrated stopwatch

Range	0 ... 99H: 59M: 59S
Accuracy	± 1 second / 2 hours



Order numbers

Heating Block PL2	Art. No. 200.30.50
Temperature control unit TCT-1	Art. No. 200.41.01
Thermocouple type K	Art. No. 200.41.32

The devices are supplied with an electrical test and a factory calibration certificate.