

SURFACE WORLD

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SEPTEMBER 2026

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DON'T GET STUCK MONITORING PTFE CURE

Designed for PTFE / Teflon® coating applications, the PhoenixTM high temperature Finishing System travels through the oven with your product to measure the exact temperature profile of the substrate and the atmosphere within the product vicinity.

Compared with conventional paint or powder coating cure applications the challenge of PTFE cure monitoring is the significantly higher cure temperatures employed. Obviously different formulations of PTFE will vary in exact cure requirements but typically curing will require 30 to 60 mins @ 350 to 450 °C.

To protect a data logger passing through the oven at temperature up to 450 °C it is unlikely that standard paint or powder coating thermal barriers, offered on the market, will be up to the task. To address the thermal challenges of the PTFE cure application PhoenixTM can offer a variety of thermal barrier options to suit.

The stainless-steel thermal barriers protect the data logger safely at oven temperatures up to 450 °C maintain the data logger operating temperature at less than 80 °C. This protection

obviously prevents thermal damage but also maintains the measurement accuracy via the thermocouple using the data logger's accurate cold junction compensation feature. Even with changing temperature of the data logger thru-process, which is a given, the accuracy of the data logger will remain ± 0.3 °C.

A typical thermal barrier offering is the TS01-120-1 which is 120 x 196 x 350 mm (HxWxL) and 6.4 kg. Dual phase thermal protection is achieved through combining high performance microporous insulation with a phase change heat sink. The thermal barrier provides an impressive thermal protection of 1.5 hours @ 300 °C or 30 mins @ 450 °C.

The thermal barrier is compatible with the PTM1210 allowing monitoring from 10 Type K Thermocouples with the option of RF telemetry allowing real time live monitoring of product temperature direct from the oven as the PhoenixTM system passes through on the monitoring run.

For even more thermally demanding applications especially for large substrates PhoenixTM can offer even more protection from its extensive thermal barrier range used in coating and heat treatment industrial sectors.

Operating above 300 °C unfortunately conventional PTFE / PFA coated thermocouple cable cannot be used having an upper temperature threshold of 265 °C.

CONTINUED ➤



PhoenixTM
Phoenix Temperature Measurement

...where experience & choice counts!

Thru-process Monitoring Solutions for Paint & Powder Coating Ovens

Temperature Profiling Systems



Comprehensive Range

- Data Logger and Thermal Barrier choice (6 to 20 Thermocouples)
- Extensive Thermocouple range
- Real Time RF Telemetry options
- ATEX approved options
- Full UK service and calibration support

Oven Profile and TUS software



Software Packages to Suit

- Thermal View or enhanced Thermal View Finishing software
 - Match Analysis Tools to suit.
- CQI-12 Temperature Uniformity Survey solution options

Optic Video Profiling System



Innovative Video Capture Thru the operating oven

- Detect paint runs, chips and defects
- Spot transport problems
- Identify oven damage
- Locate dust and inclusion risk areas

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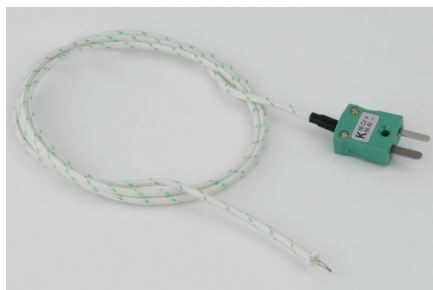
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Monitor, Control, Improve & Certify... Your Coating Process

To address the higher temperatures, it is necessary to employ type K thermocouples constructed with either glass fibre (<500 °C) or mineral insulated cables (<1200 °C). At above 300 °C conventional magnetic attachments will not work efficiently; hence it is recommended that the exposed junction thermocouple is physically attached to a test substrate with a screw & washer or other mechanical fixing. A mineral insulated thermocouple option fitted with a washer allows easy fixing in this manner.

Complementing the physical measurement system PhoenixTM offers a choice of Thermal View Software packages (Thermal View or Thermal View Finishing Software) to set-up the data logger, review, analyse and report the temperature profile obtained.



Using a variety of analysis tools including Time @ Temperature and Phoenix Factor (Cure Index Calculation) the cure performance of the PTFE product can be assessed against the manufactures cure schedule recommendations. With such information the quality of the cure can be determined to prevent problems such as:

Under Cure of PTFE Brittle coating with adhesion problems

Over Curing of PTFE Black PTFE coatings have unwanted chalky residue
Reduced Gloss Levels
>500 °C Toxic gaseous by-products released.

If problems are experienced the profile data is invaluable in any oven optimisation / fault finding investigations to allow corrective action to be taken. Use the PhoenixTM Thru-process Temperature Monitoring system to Find, Fix and Forget your Finishing problems!

**Teflon® is a registered trademark of DuPont.*

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