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TECHNOLOGY GROUP

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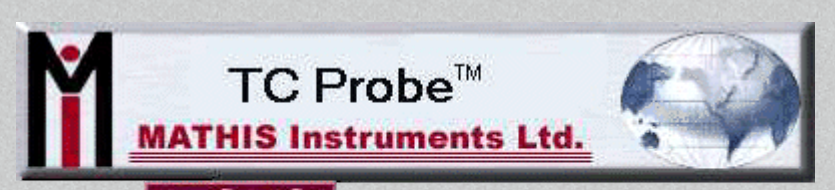
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Winner of the 1999
R&D 100 Award

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Introduction

The TC Probe™ measures, in a *non-destructive manner*, the thermal conductivity and other thermal properties of materials such as foams, insulation, pastes, adhesives, polymers, ceramics, glass, silicone and natural fibers. "TC" stands for thermal conductivity, a thermal property desired by those looking at thermal properties and heat transfer. Only the TC Probe™, of all instruments currently in production, can test for this property without destroying the sample.

Top Three Advantages of the TC Probe™

- Non-destructive testing
- Flexible sample size (only a minimum size required, no maximum limitation)
- Fast results (from 1 to 120 seconds)

The TC Probe™'s versatility offers thermal management solutions to a variety of industries, material types, and configurations. The TC Probe™ can be implemented during the three important stages of a product's development: research & development, production, and quality control testing.

Basic Theory of the TC Probe™:

The TC Probe™ can be explained by comparing it to the human hand. A hand can differentiate between metal and wood by touch; the metal will feel colder because of metal's superior ability to transfer heat.

The TC Probe™ acts in much the same way; using electronics to supply a small amount of heat to a material and obtain data, it then represents its findings numerically. When a sample is placed on the sensor, the sample absorbs some of the heat. The rest of the heat causes a temperature rise at the sensor interface. The rate of temperature rise at the interface is evaluated to determine the thermal properties of the sample being tested.

Why test for thermal conductivity?

Thermal conductivity analysis and resultant data can be invaluable for consistent product quality. However, traditional technologies for performing such analysis have been expensive and/or destructive and very time consuming in both sample preparation and testing. This has generally relegated thermal conductivity analysis to research & development operations, or to some extent, quality control labs.

The TC Probe™ is unique in its ability to provide rapid results while requiring access to only one side of the test material. Therefore, it provides many different industries the opportunity to do thermal property testing of their materials and products throughout the three main stages: initial R&D, actual production and final quality control.

The TC Probe's primary advantages to you include:

- testing is not limited to the R&D or quality control laboratories
- from lab to line testing– use of consistent testing parameters by using the same testing instrument
- testing during production – pinpoint problems before reaching final stage of production
- quality control testing of final product – good vs. bad, helps establish and meet minimum production requirements, etc

- you can claim up to 100% quality control of a product – a potential edge over the competition
- overall reduction in production waste and destructive testing overall increase in margins and quality control rates

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Mathis Instruments Ltd.
SUITE 207, INCUTECH BLDG, PO Box 69000, FREDERICTON, NEW BRUNSWICK CANADA, E3B 6C2
Tel: (506) 457-1515 **Toll Free:** 1-877-TCProbe (1-877-827-7623) **Fax:** (506) 462-7210
Email: Info@MathisInstruments.com

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Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

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