

# Thermax® Irreversible Temperature Recording Strips

## PRODUCT DATA SHEET

### Product Description:

A series of temperature test labels that will permanently record the highest temperature reached by the label.

### What They Are:

These self-adhesive labels consist of a series of temperature-sensitive elements sealed between heat-resistant substrates with transparent windows. Each element changes color distinctly as its rated temperature is exceeded. The changes are irreversible, providing a temperature history of the surface being monitored. The labels will not de-laminate when removed for reference and can be attached to an inspection report to serve as a permanent record.

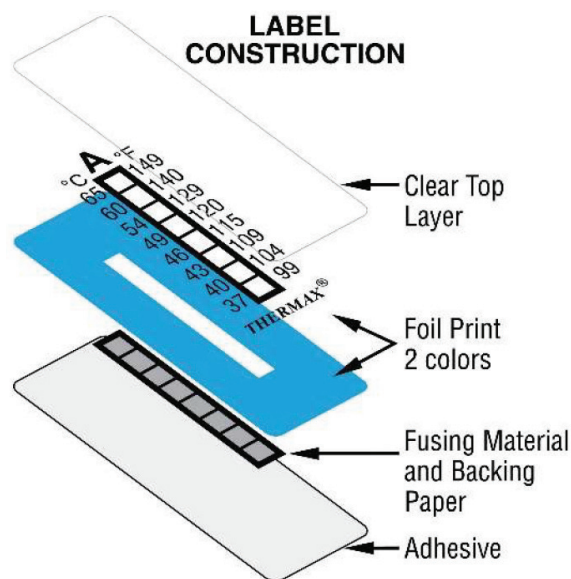
### How The Labels Work:

The temperature-sensitive elements are phase-change indicators which use the sharply defined melting points of a series of specially purified organic chemicals to give the unique, high precision, color change effects. Each temperature element uses a different chemical compound and is made separately by applying a coating containing the chemical to a special absorptive paper substrate. When the rated temperature is exceeded, the chemical melts and is absorbed by the substrate, causing a permanent color change. Up to ten elements can be combined together on a single label.

### Label Construction:

| Component                                       | Thickness |
|-------------------------------------------------|-----------|
| Print foil                                      | >10μ      |
| Polyester film (171°C and below)                | 50μ       |
| Polyethylene Naphthalate film (172°C to 210°C)  | 50μ       |
| Polyimide film (211°C and above)                | 50μ       |
| Adhesive type Acrylic (171°C and below)         | 125μ      |
| Adhesive type Modified Acrylic (172°C to 260°C) | 50μ       |
| Adhesive with no carrier Pure Acrylic (261°C +) | 100μ      |
| Black coated paper & backing                    | >150μ     |
| Release Liner                                   | 75μ       |

Above values are general guides for illustration purposes only.



## Physical Properties:

|                              | <b>Low Temperatures<br/>(171°C and below)</b>                                                                                                                                                                                                                                                                                                                                                                                              | <b>Mid Temperatures<br/>(172 to 210°C)</b> | <b>High Temperatures<br/>(211°C to 260°C)</b> | <b>Very High<br/>Temperatures (261°C+)</b> |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|--------------------------------------------|
| <b>Adhesive Type</b>         | Acrylic                                                                                                                                                                                                                                                                                                                                                                                                                                    | Modified Acrylic                           | Modified Acrylic                              | Pure Acrylic                               |
| <b>Carrier</b>               | Polyester                                                                                                                                                                                                                                                                                                                                                                                                                                  | Tissue                                     | Tissue                                        | None                                       |
| <b>Covering Film</b>         | Polyester                                                                                                                                                                                                                                                                                                                                                                                                                                  | Polyethylene Naphthalate                   | Polyimide                                     | Polyimide                                  |
| <b>Response Time</b>         | 2 to 5 seconds                                                                                                                                                                                                                                                                                                                                                                                                                             | 2 to 5 seconds                             | 2 to 5 seconds                                | 2 to 5 seconds                             |
| <b>Color Change Material</b> | Non-toxic, white crystalline solid on a black absorbent backing, adhered with acrylic adhesive                                                                                                                                                                                                                                                                                                                                             |                                            |                                               |                                            |
| <b>Tolerance</b>             | Less than 100°C = ±1°C<br>100°C to 154°C = ±1.5°C<br>Greater than 154°C = ±4°C                                                                                                                                                                                                                                                                                                                                                             |                                            |                                               |                                            |
| <b>Guarantee</b>             | Temperatures from 29 – 34°C / 84 – 93°F = 6 months guarantee, providing they are stored in a refrigerator inside a sealed bag.<br><br>Temperatures from 37 – 49°C / 99 – 120°F = 12 months guarantee, providing they are stored in a refrigerator inside a sealed bag.<br><br>Temperatures from 50 – 290°C / 130 – 554°F = 24 months guarantee, store at room temperature & Humidity (i.e. 16°C/60°F-27°C/80°F & 40-60% relative humidity) |                                            |                                               |                                            |

## Application Data:

Peel temperature-indicating label from backing paper. Apply to dust & grease free surface. Indicators change from white/grey to black when the temperature rating has been achieved. Note that labels with a polyimide film will appear orange to start. These products are made to the highest standards however they are not suitable for all applications. Please discuss any specific needs with our team.

## Custom Products:

In addition to the standard Thermax® labels, which cover the temperature range of 29 - 290°C, a full custom manufacturing service is available, and products can be manufactured to meet customers' precise requirements of, for example, size, shape, color, temperature range, number of temperature elements, graphic printing (logos etc.). Please ask for details.