



THERMO-XXX

Thermochromic powder coatings



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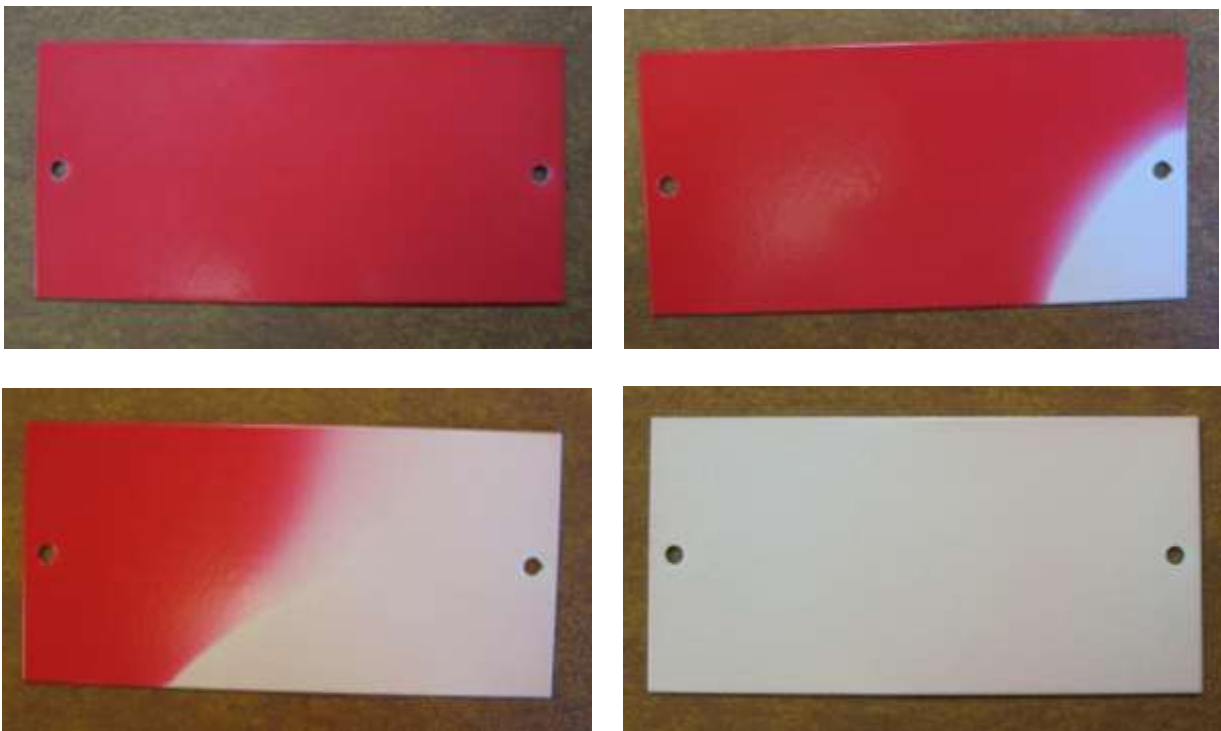
Powder coatings that can change color with temperature

1. PRODUCT FEATURES

The powders of the *Thermo* series contain special pigments that can change with heat: in a small temperature range these powder coatings switch from colored to transparent.

Since variation is *from colored to transparent* with increasing temperature, these coatings are generally used as second hand in a double coatings, over a white (or colored) layer of paint; once the thermochromic layer has become transparent at a certain temperature, the first layer of paint shines through, thus giving the effect of a change in color.

The unique characteristic of these products represent a fascinating feature for the objects that will be coated and also offers innovative possible applications for them.



Double coated aluminum panel: *Thermo-003* (magenta) on *PE 411* (white polyester); by heating over 28°C, the thermochromic top layer becomes colorless, so the color of the first layer is fully visible.

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2. PACKAGING



Cardboard packaging; net weight 25 Kg – Lower weight miniboxes are available

3. TECHNICAL INFORMATION

• TECHNICAL DATA

Chemical nature	Low-cure polyester
Finish	Smooth matt
Class of resistance	Indoor use
Yield in surface/mass	13,1 m ² /Kg
Specific weight	1,27 ± 0,03 g/cm ³

• APPLICATION AND CURING CYCLE

Available for corona charging.

Curing time and temperature: 15 minutes at 190°C – 374°F (metal temperature).

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4. VARIANTS AND SPECIAL FORMULATIONS

These powders are available in matt, glossy, and textured version.

It is possible to produce thermochromic powders that change from colored to transparent at different temperatures.

• COLORS

Code	Color
Thermo-001	Yellow
Thermo-002	Orange
Thermo-003	Pink
Thermo-005	Light Blue
Thermo-006	Dark Blue
Thermo-008	Black

• TEMPERATURES FOR THE COLOR CHANGE

- 55÷8°C – 41÷46°F (inside/outside temperature; storage and preservation of food);
- 15÷18°C – 59÷64°F (room temperature variations);
- 28÷30°C – 82÷86°F (close to body temperature);
- 50°C – 122°F (for hot objects and surfaces).

5. TEST FOR THE ACCURATE DETERMINATION OF THE COLOR CHANGE

With a test, the DecoralLab has determined with accuracy the temperature at which a thermochromic powder coating changes color, and the range within the change occurs.

The test has been performed on a *Thermo-005* applied as top coat on a layer of *PE411* (room temperature color: blue; expected color variation: >28°C).

The sample has been put into water; temperature has been checked with thermal probe.

While heating:

- 26°C ± 0,5°C blue;
- 28°C ± 0,5°C starts to change;
- 31°C ± 0,5°C transparent (white first coat fully visible).

While cooling:

- 30°C ± 0,5°C transparent (white first coat fully visible);
- 29°C ± 0,5°C starts to change;
- 27°C ± 0,5°C blue.

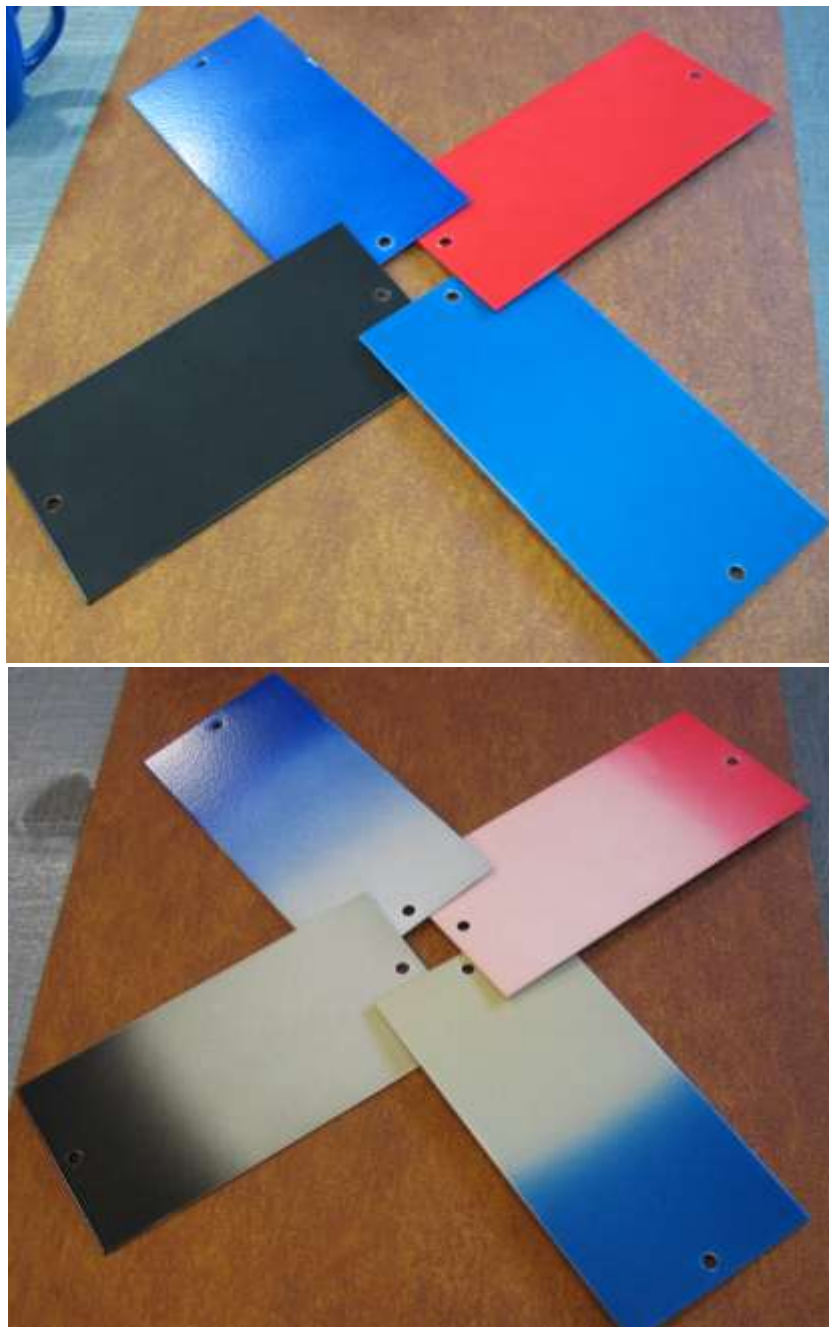
The change in color occurs *between 28°C and 30°C* (82°F – 86°F).

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6. POSSIBLE USAGE

The powders of the *Thermo* series represent an extraordinary product for the impressive effects that are possible by changing color and temperature together, and also for the functionalities and the practical usefulness that can be obtained by properly choosing the suitable temperature threshold according to the application of the decorated object.



Double coated aluminum panels: different colors of thermochromic powders over a layer of white polyester; heating in the centre causes the *Thermo* powders to switch from colored to transparent.

Dedicated marketing material:

- MRK-005-0323



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