

## **MpoMte32-001**

## Reversibly thermochromic electrospun mats of poly (vinylidene fluoride) with thermochromic pigment

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Thermochromic materials, which can change color when a temperature variation is detected, are one of the main smart materials. This ability makes thermochromism a useful tool in a variety of applications, including the manufacture of temperature sensors, and in various areas where thermal monitoring is required. Based in this context, in this work, poly (vinylidene fluoride) (PVDF) electrospun mats were fabricated with the addition of 5, 10, 15, and 20 wt% of thermochromic pigment by the electrospinning process. The chemical composition, morphology and thermochromic transition of the pigment. The pigment is composed of melamine-formaldehyde microcapsules with diameters ranging from 0.3 to 7 ?m with thermochromic transition at 39.9 °C. The electrospun mats showed a temperature transition between 40.7 °C and 41.1 °C, confirmed by differential scanning calorimetry (DSC), showing a gradual color transition from gray to white by increasing temperature. The thermochromic properties of the mats remained stable even after 20 consecutive cycles of heating and cooling, indicating a reversible thermochromic behavior.