





NCC THERMOCHROMIC PIGMENTS

Thermochromic pigments are microcapsules that change color reversibly with temperature. The core contents of thermochromic pigments are leuco-dye, color developers and temperature controllers. By formulating with different temperature controllers, NCC thermochromic products come in various activation temperatures.

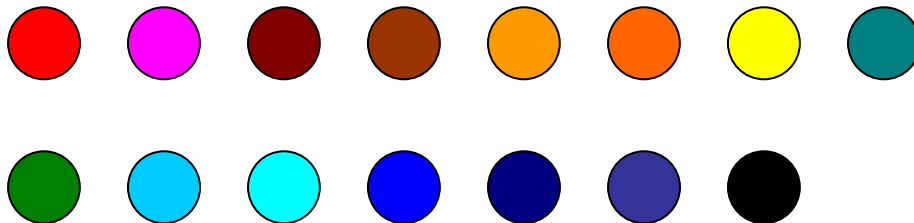
NCC thermochromic pigments are manufactured by New Prismatic Enterprises Co. Ltd. of Taipei, Taiwan. UMC is the exclusive distributor of these pigments in North America.

Product Description:

- **Color Conversion:** When the temperature is raised to a specified temperature, it goes from colored to colorless. The product returns to the original color as the temperature cools down.

Colorless when temperature rises  ↔  Colored when temperatures cool down

- Available Activation Temperatures: – 15 °C to + 70 °C
- Color: 15 available colors for each activation temperature. All colors can be mixed with each other or added to other pigments.
(colors for reference)



Applications:

Ink and Paints (solvent and aqueous)
Plastic Injection and Extrusion

Processing Conditions:

- Moisture content is $\leq 3\%$. The average particle size is 3 to 12 μm .
- Recommended Concentrations
 1. For solvent/ **aqueous** based ink/paint 5%~30% w/w
(For best results, about 25% concentration is required for a 20 μm film thickness).
 2. For plastic injection/extrusion 0.1% ~5% w/w
(For best results, about 0.5% concentration is required for 0.2cm plastic thickness).

General Recommendations:

- Avoid high polarity solvents, such as methanol, ethanol, acetone and methyl ethyl ketone. These solvents will affect the microcapsule contents through permeation.
- The processing temperature of injection molding should not exceed 240°C.
- Do not add phenol type heat stabilizers, they may destroy the color changing properties.
- UV stabilizer/absorbent may affect the color changing properties.

Storage:

- Keep sealed in a dark, cool place, away from direct sunlight. Shelf life is 2 years if stored in a non humid environment.

Certifications:

- EN-71 & RoHS compliant.

**FOR MORE INFORMATION CALL UNITED MINERAL & CHEMICAL CORPORATION
AT TEL: 800-777-0505 or 201-507-3300.**

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