

NANOMYTE® MEND™

Self-Healing Nanocomposite Coatings

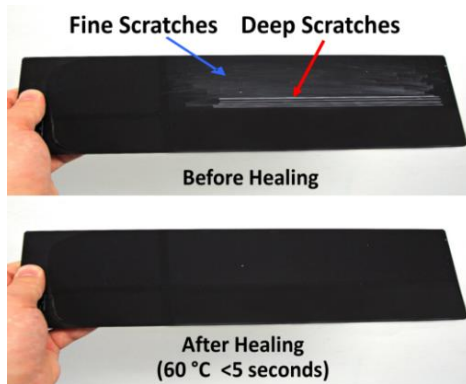


NEI has developed a line of self-healing top coats where a physical self-healing phenomenon leads to gap closing and crack sealing. The innovative technology platform is applicable to a broad range of substrates such as metal, wood, and polymers – including those that require maintaining a clear glossy appearance. **NANOMYTE® MEND** coatings can be healed multiple times at the same defect location, thereby reducing life cycle costs by increasing the service life and reducing maintenance costs of the various substrates to which it is applied.

In response to the need for self-healing required in different environments, four MEND products have been introduced:

Coating	Healing Temperature	Base	Self-Healing Properties
MEND 1000	60 – 80 °C	Solventborne	Excellent
MEND 2000	Room Temperature	Solventborne	Excellent
MEND 3000	60 – 80 °C	Solventborne – RT cure	Excellent
MEND 4000	60 – 80 °C	Waterborne	Good

NANOMYTE® MEND 1000 is based on US Patent 8,987,352, where a thermally induced *physical self-healing* phenomenon leads to gap closing and crack sealing. The self-healing coating involves a unique phase-separated morphology that facilitates the delivery of the self-healing agent to the damage site (such as a scratch or crack) thereby restoring the coating appearance & function. The coating can be self-healed by the application of warm air for a few seconds with a simple device such as a household hair dryer.



NANOMYTE® MEND 1000
Clear coat on a black metal panel

The more recent patent-pending **MEND™ 2000**, allows self-healing at near ambient temperature. **MEND™ 3000** is still a solventborne coating but is cured at room temperature, and **MEND™ 4000** is a waterborne, polyurethane-based, self-healing coating (US Patent 8,664,298).

The current series of MEND coatings are based on polyurethane, but the principle is applicable to other coating systems as well – including acrylics and epoxies. Additionally, properties of the coating – such as hardness, gloss, and refractive index – can be altered as needed for a specific application.

FEATURES

- Product variations for metal, wood, and plastic substrates
- Can be used as a complete coating solution or as an additive in other coating formulations
- Achieves self-healing of coating surface and subsurface damage
- Customized formulations possible

APPLICATIONS

- Can be used for commercial, military, and industrial applications

BENEFITS

- **Cost Savings** – Reduces raw material, labor, and energy cost of repainting or recoating
- **Durability** – Increases the service life of coatings by preserving aesthetic and protective functions
- **Environment** – Minimizes the environmental costs and societal impact of repainting (e.g., waste disposal and volatile-organic-compound emissions)
- **Maintenance** – Eliminates the need to frequently repaint or replace damaged coatings