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:

<table>
<thead>
<tr>
<th>Coating</th>
<th>Healing Temperature</th>
<th>Base</th>
<th>Self-Healing Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEND 1000</td>
<td>60 – 80 °C</td>
<td>Solventborne</td>
<td>Excellent</td>
</tr>
<tr>
<td>MEND 2000</td>
<td>Room Temperature</td>
<td>Solventborne</td>
<td>Excellent</td>
</tr>
<tr>
<td>MEND 3000</td>
<td>60 – 80 °C</td>
<td>Solventborne – RT cure</td>
<td>Excellent</td>
</tr>
<tr>
<td>MEND 4000</td>
<td>60 – 80 °C</td>
<td>Waterborne</td>
<td>Good</td>
</tr>
</tbody>
</table>

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.

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 coatings including phenomene
- 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