

# Diamond Slurries

*High performance slurries for scalable polishing of diamond substrates and films*

Entegris is the market leader in diamond polishing slurries. They are designed to meet various specifications for polishing polycrystalline diamond, monocrystalline diamond, and diamond films in a wide range of applications. Our advanced formulations provide high polishing rates, up to 10 times faster than conventional processes, while maintaining uniformity, low sub-surface damage, and low defectivity/scratches. Our slurries are high-volume manufacturing (HVM) ready. Custom solutions are available upon request.

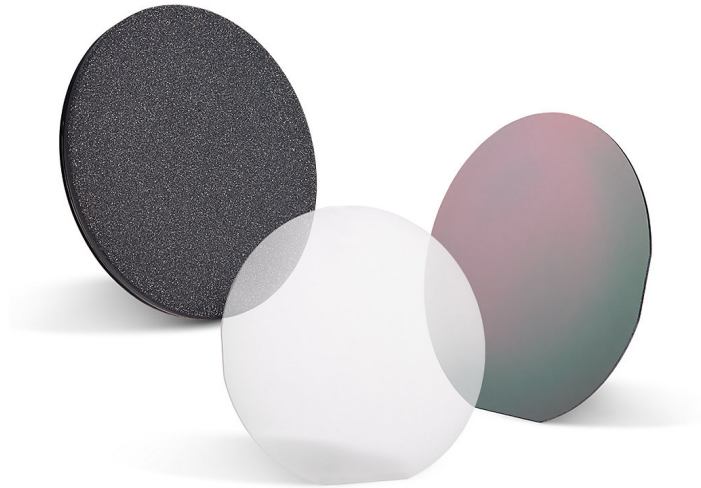
Our HDD nanodiamond slurry solutions comprise of 100 nm – 450 nm diamonds used in both finishing slurries and rough lapping processes. The formulations can be used in both fixed and floating abrasive lapping plates. The unique swarf dispersion chemistry helps protect against abrasion during lapping. The formulation contains virtually no ionic material and is designed to afford corrosion protection for thin deposited metals. The organic molecules are carefully formulated to enhance removal rates and disperse swarf and diamonds.

## APPLICATIONS

- Polishing substrates for optical applications

## FEATURES & BENEFITS

<b>High performance slurries</b>	Achieve high removal rates with no sub-surface damage and excellent stability and dispersion
<b>Slurry stability</b>	Enable high-volume manufacturing scale-up Low cost of ownership
<b>Global manufacturing capabilities</b>	Provide localized quick-turn and customized solutions
<b>Customer collaboration</b>	Slurry development begins with the customer's application requirements at the forefront Our applications engineers work with customers to ensure that chemistries are optimized for target parameters and process conditions



## SPECIFICATIONS

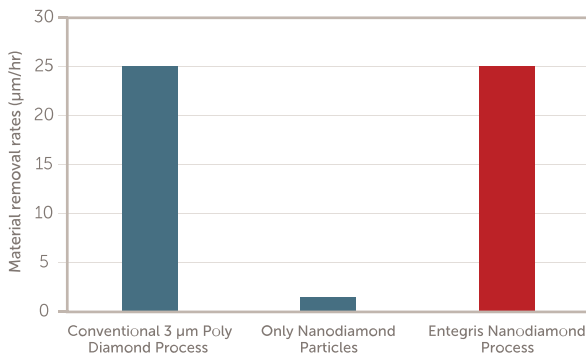
Product family	Process step	Polishing face best optimized for	Key features	Material removal rate (MRR)
DM-1000 series	Final finish, CMP	Polycrystalline diamond and diamond films	<ul style="list-style-type: none"> <li>Low surface roughness Ra &lt;1 nm</li> <li>Diamond films Ra &lt;0.2 nm</li> </ul>	N/A
DM-3000 series	Bulk polish	Monocrystalline and polycrystalline diamond	<ul style="list-style-type: none"> <li>High removal and low surface roughness</li> <li>Monocrystalline Ra &lt;0.2 nm</li> <li>Polycrystalline Ra &lt;3 nm</li> </ul>	0.2 - 1 $\mu\text{m/hr}$ (depending on diamond type)

### HDD Magnetic Head Polishing

Product family	Process step	Key features
Microlap 305E-170	Rough lap, intermediate polishing step	<ul style="list-style-type: none"> <li>High removal and low surface roughness</li> <li>High surface finish (&lt;5 Å)</li> <li>Minimal embedding of diamond into substrate</li> </ul>
Microlap 305E-350, Microlap 305E-450	Bulk polishing of magnetic head	<ul style="list-style-type: none"> <li>High stock removal</li> <li>Minimal embedding of diamond into substrate</li> </ul>
Microlap 305E-100	Finishing polish	<ul style="list-style-type: none"> <li>Optimized removal rates with minimal dishing</li> <li>High surface finish (&lt;2 Å)</li> <li>Minimal embedding of diamond into substrate</li> <li>Zero corrosion</li> </ul>

## PERFORMANCE DATA

### Sapphire Diamond Lapping Removal Rates



#### FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [entegris.com](http://entegris.com) and select the [Contact Us](#) link to find the customer service center nearest you.

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