



microdiant

**Diamond slurries**  
**Engineered products**  
Product range

Perfect surfaces, reproducible results.  
 Microdiamant diamond slurries are precisely customized to the requirements of your process. Reliable und easy achievement of your desired surface finishing.

**Engineered diamond slurries**

Microdiamant Diamond slurries are stabilized by special additives and trimmed to the highest removal rates. The combination of carrier liquid and precisely classified, guaranteed agglomerate-free micron diamond powder can achieve any required surface finish. Our diamond slurries are unbeatable in terms of efficiency and reproducibility and convince by high efficiency.

These parameters will be customized to your application:

- ❶ Slurry type
- ❷ Viscosity
- ❸ Diamond concentration cts/ltr
- ❹ Diamond type/Size

Slurry type	Oil-based diamond slurry		
	SPO	H0	0
Carrier liquid	oil-based	oil-based	oil-based
Special characteristics	High-performance oil-based diamond slurry, used for lapping and polishing	Oil-based diamond slurry for medical applications, free of heavy metals, chlorine and sulphur	Oil-based diamond slurry, suitable for high process temperatures
Viscosity	3.5-350 cP *	100 cP	200 cP
Stability	stabilized and not stabilized versions available	stabilized	stabilized
pH value	N/A	N/A	N/A
Health & Eco friendly	-	-	-
Diamond type	Available with polycrystalline or monocrystalline diamond powder		
Diamond concentration	As requested, typical 25 cts/ltr		
Applications	Lapping and polishing of sapphire, ceramics and metals on metal lapping plate.	Lapping and polishing of orthopedic joints or implants made of ceramics or metals.	Lapping and polishing processes subject to high process temperatures such as polishing of ceramic implants.




\* for details please see corresponding datasheet

### The ready-to-use advantage

Focus on the processing of your workpiece thanks to our ready-to-use diamond slurries.

The mixing is omitted and the slurries are fully stabilized. All Microdiamant diamond slurries are carefully engineered to be ecologically friendly and to meet highest work safety standards, they are easy to handle and have good cleaning properties.

Your benefit: less rework, better process control, reduction of unproductive working hours and lower unit costs.

Diamond emulsion		Water soluble diamond slurry	
PW	SPW	OWS	OPW
oil-water emulsion	water-based	glycol-based	water-based
Emulsion-based diamond slurry	Universal water-based slurry for lapping on metal plates	Glycol-based slurry with good lubrication properties	Specifically used for processing of optical parts with sub-micron diamond sizes
430 cP	5-800 cP *	125-9'000 cP or gel like *	60-325 cP *
stabilized	stabilized and not stabilized versions available	stabilized	stabilized
6.8	8.5-9.5 *	5.5-7.5 *	8.0-9.8 *
			
Available with polycrystalline or monocrystalline diamond powder			
As requested, typical 25 cts/ltr			
Emulsion for lapping of metallic and ceramic materials.	Water-based slurry for lapping and polishing of sapphire, ceramics and metals on metal lapping plate or textile polishing pad.	Glycol-based, water-free slurry for lapping and polishing of sapphire, ceramics and metals on metal lapping plate or textile polishing pad.	Polishing of optical lenses of various materials with submicron diamond sizes.

## Order codes

Example                      SPW-50 / 25 DP 5.5 – 8  
   ①        ②        ③        ④

- ① Slurry type
- ② Viscosity
- ③ Diamond concentration cts/ltr
- ④ Diamond type/Size

### Order information

OPW-20/25 DP 0 – 0.1  
Qty 5 ltr  
Packing unit 1 ltr

### Packing unit

Bottles 1 ltr, 2.5 ltr  
Containers 5 ltr, 10 ltr  
If not specified, we use 1 ltr bottles

### Quantity unit

liter (ltr)

### Orders

Tel +41 71 686 60 60  
Fax +41 71 686 60 70  
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## UK & Ireland Distributor

**MASTER**  
**ABRASIVES**

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All information is non-binding and provided for information purposes only. Subject to change without notice.

## Key properties of diamond slurries

**Carrier liquid** Selecting the right carrier liquid is instrumental to achieve maximum process performance. Microdiamant offers a wide variety of carrier liquids to choose from, each with distinct properties.

- Oil-based liquids offer superior lapping and polishing performance. They are generally used on metal lapping plates. Oil-based slurries are the preferred choice for highest material removal rates and for processing oxidation-sensitive materials.
- Water-soluble liquids are popular for their ease of use. Work piece handling and cleaning is simple and cost-effective. They can be used on metal lapping plates as well as on a wide range of polishing pads. Water-based slurries are environmentally friendly and easy to dispose of.
- Oil-water emulsions can be used on both metal lapping plates or on polishing pads.

**Viscosity** Slurry viscosity has a key impact on process efficiency. It needs to be adapted to diamond size, work piece geometry, lapping plate and process parameters. An adequate viscosity ensures a constant feed of new diamond slurry to the actual working zone. Most carrier liquids are available in a wide viscosity range, allowing for precise adjustment to the process.

**Stability** Novel stabilizers, adapted to each formulation, prevent sedimentation and ensure that every diamond particle reaches the work zone. This leads to a high material removal rate and to maximum process consistency.

**Diamond type** Polycrystalline diamond features a rough, micro-structured particle surface with numerous contact points between the particle and work piece. It is the first choice for high-performance lapping of very hard materials such as sapphire, ceramics or hard metals, as well as for polishing processes on soft polishing pads. Monocrystalline diamond is a popular choice for general lapping and polishing applications. It is widely used for not extremely hard materials such as ceramics, metals, diamond wire dies and gemstones.

**Diamond size** Microdiamant offers more than 40 closely stepped diamond sizes between 18 nm and 100 micron to choose from, allowing for precise fine-tuning of surface quality and removal rate.

**Diamond concentration** Diamond concentration is a main driver of process performance. In our engineered slurries, diamond concentration is adapted to the technical and economical requirements of the individual process. This allows for fine-tuning performance while maximizing process cost savings.

Detailed information on each diamond slurry is provided in the respective product data sheet.