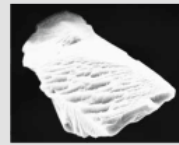


## DIADUST® NATURAL MICRON DIAMOND POWDERS

Typical fracturing mode by cleavage of a DIADUST® natural diamond particle.

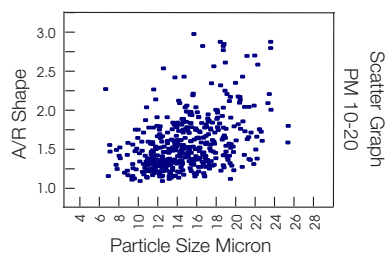


DIADUST® micron diamond powder is produced from natural diamond. In certain applications, it offers a useful option, despite the higher cost.

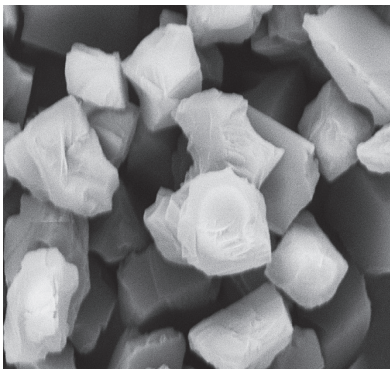
### DIADUST® PM | NATURAL

PM is the standard natural diamond micron powder range. It is preferred in some applications requiring very free cutting properties, as well as for the production of some electrometallic tools and wheels.

PM is also used in some polishing applications, for diamond cutting and the fine polishing of diamond drawing dies.



PM 4-8 2500X



Natural diamond shares the monocrystalline structure of its synthetic Syndia equivalent, but offers some particular properties.

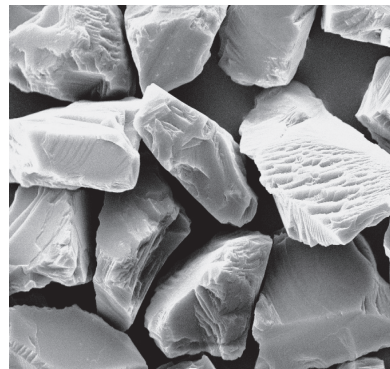
Synthetic diamond of Type 1B is manufactured by the HPHT (high pressure high temperature) method. It contains >100 ppm of nitrogen homogeneously distributed throughout the diamond crystal. This gives the typical yellow color to coarse metal bond type diamond. Nitrogen forms like an alloy with carbon, thereby increasing the strength of synthetic diamond and making it more ductile. Higher impact strength is needed to produce a sharp cleavage on a

synthetic diamond particle. Natural diamond offers better defined cleavage planes and fractures under less pressure to produce new, sharp cutting edges.

A second advantage of natural diamond is the absence of metallic inclusions, which reduces its electric conductivity. This makes natural diamond powder most popular for electroplated tools.

Natural diamond powder is a product from nature and it is therefore less consistent in quality and availability.

PM 30-40 600X



PM 30-40 200X





<b>D50 - MEDIAN SIZE</b>	<b>PM</b>
43.0	PM 30-60
36.0	PM 30-40
30.0	PM 20-40
24.0	PM 20-30
21.0	PM 15-30
14.0	PM 10-20
11.5	PM 8-16
8.00	PM 6-12
6.80	PM 5-10
5.70	PM 4-8
4.80	PM 4-6
4.00	PM 3-6
3.00	PM 2-4
2.00	PM 1-3
1.41	PM 1-2
1.00	PM 0-2
0.710	PM 0.5-1
0.500	PM 0-1
0.250	PM 0-0.5
0.125	PM 0-0.25

<b>PROPERTIES</b>	<b>PM</b>
<b>GRADING</b>	normal
<b>SYNTHESIS</b>	natural
<b>CRYSTAL STRUCTURE</b>	monocrystalline
<b>PARTICLE SHAPE</b>	irregular
<b>FRACTURING MODE</b>	cleavage macro-fracture
<b>SURFACE STRUCTURE</b>	sharp
<b>IMPACT RESISTANCE</b>	medium
<b>PURITY</b>	> 98%
<b>BONDING SYSTEMS</b>	EP, MB
<b>DENSITY</b>	3.52 g/cm <sup>3</sup>