

## SYNDIA® UNMILLED METAL BOND MICRON DIAMOND POWDERS

Typical fracturing mode by cleavage of a SYNDIA® metal bond particle.



All micron diamond powders are produced from crushed raw material. SYT however is an uncrushed 'metal bond' type micron diamond powder. The particles are directly synthesized, with particle characteristics similar to mesh products.

### SYNDIA® SYT | UNMILLED

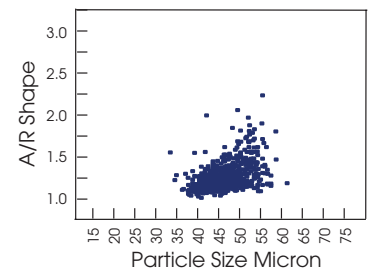
In metal bonded and electrometallic grinding wheel applications the transition between mesh sizes and micron sizes mostly causes a change in material type, particularly in terms of particle shape, shock and wear resistance.

SYT is available in the coarsest micron sizes, as a direct extension from the finest mesh size products. It is used in some very sensitive applications, for its higher impact resistance and reduced chipping.

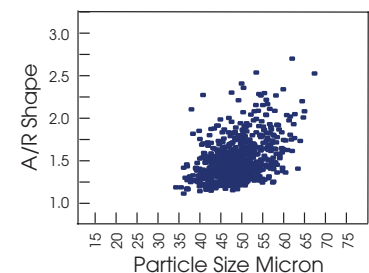
In SYNDIA® SYT the particles are as grown, with their facets and shape similar to mesh sizes. The benefits are significant:

- Very blocky whole crystals with uniform particle shape, which avoids edge chipping in certain sensitive applications.
- Higher impact strength.
- Superior abrasion resistance, due to the natural, unprocessed crystal facets.

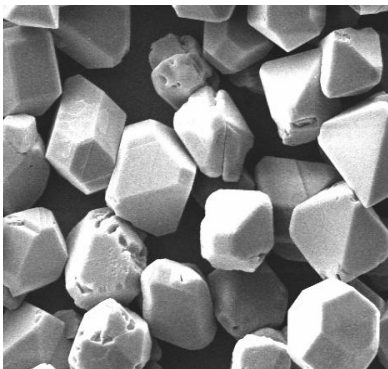
SYT 36-54 scatter graph



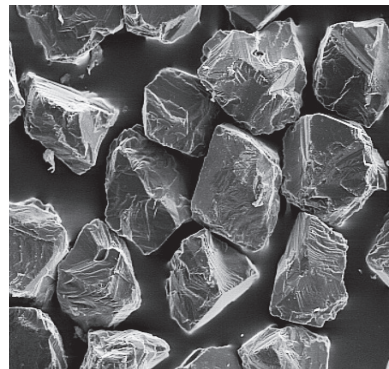
SYG 36-54 scatter graph



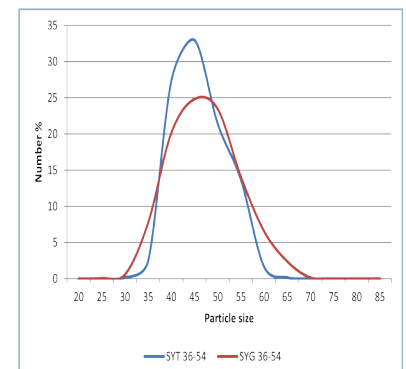
SYT 36-54 400X



SYG 36-54 400X



Particle size distribution





<b>D50 - MEDIAN SIZE</b>	<b>SYT</b>
53.0	SYT 40-60
46.0	SYT 36-54
41.0	SYT 35-45
36.0	SYT 30-40
32.5	SYT 30-40F

<b>PROPERTIES</b>	<b>SYT</b>
<b>GRADING</b>	precision
<b>SYNTHESIS</b>	HPHT
<b>CRYSTAL STRUCTURE</b>	monocrystalline
<b>PARTICLE SHAPE</b>	very blocky
<b>FRACTURING MODE</b>	macro-fracture
<b>SURFACE STRUCTURE</b>	edged (facets)
<b>IMPACT RESISTANCE</b>	very high
<b>PURITY</b>	> 99.8%
<b>BONDING SYSTEMS</b>	MB, EP
<b>DENSITY</b>	3.52 g/cm <sup>3</sup>