

SYNDIA[®] and SUPERSYNDIA[®] SUBMICRON DIAMOND POWDERS

- Precision grading in the finest diamond powder sizes
- Two different diamond types
- Consistent quality down to 18 nanometer size distribution
- GAF liquid diamond to solve any dispersion problems

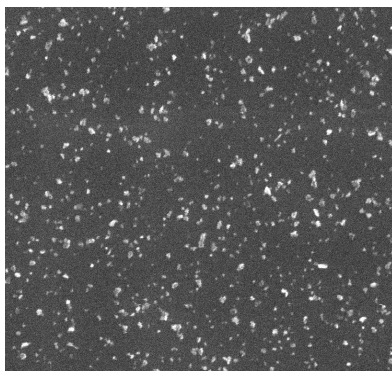
Van Moppes gained an international reputation for submicron diamond powders through their grading accuracy and delivery consistency. Mirror polishing of diamond wire dies and precision tools for the semiconductor and display industry are the main applications for these premium products.

SYNDIA[®] SYP | SUB-MICRON MONOCRYSTALLINE

SYP is available in eleven different sizes below 1 micron. Other custom-tailored sizes are available on request (see **SYNDIA[®]** P-Grades data sheet). They are used in many super-finishing applications on metals and ceramics (silicon wafers), or in the fine polishing of PCD and natural diamond dies.

The **SYP Nanodiamond** is used in many research projects, such as biology, medicine, medical scanning or quantum computing.

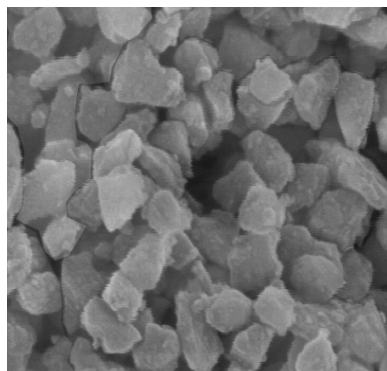
SYP 0-0.03 50000X



SUPERSYNDIA[®] SSX | SUB-MICRON POLYCRYSTALLINE

SSX Submicron diamond powder is supplied in precision graded distributions, with a compact particle shape, to fulfil the most demanding production requirements such as the polishing and super-finishing of monocrystalline ceramics (sapphire, ruby), sintered ceramics (zirconium, aluminium oxide), as well as metals (precision ball bearings, screw heads, watch parts).

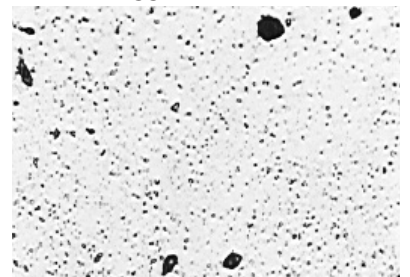
SSX 0.25-0.5 20000X



GAF | LIQUID DIAMOND

The most common problem occurring in polishing applications is diamond particle agglomerates. In finest submicron sizes, the dispersion of agglomerates becomes nearly impossible. For submicron powders we recommend the use of GAF Liquid Diamond, which is Guaranteed Agglomerate-Free. It is a concentrate of diamond dispersed in de-ionised water, compatible with all water-soluble carriers.

Residual agglomerates



Van Moppes GAF





D50 - MEDIAN SIZE (nm)	SYP	SSX
710	SYP 0.5-1	SSX 0.5-1
500	SYP 0.25-0.75	SSX 0.25-0.75
350	SYP 0.25-0.5	SSX 0.25-0.5
210	SYP 0-0.5	SSX 0-0.5
180	SYP 0-0.35	SSX 0-0.35
125	SYP 0-0.25	SSX 0-0.25
90	SYP 0-0.2	SSX 0-0.2
75	SYP 0-0.15	SSX 0-0.15
50	SYP 0-0.1	SSX 0-0.1
25	SYP 0-0.05	SSX 0-0.05
18	SYP 0-0.03	SSX 0-0.03

D50 MEDIAN SIZE (nm)	SYP GAF	SSX GAF	Concentration carats / kg	Concentration weight %
710	SYP GAF 0.5-1	SSX GAF 0.5-1	500 cts/kg	10%
500	SYP GAF 0.25-0.75	SSX GAF 0.25-0.75	500 cts/kg	10%
350	SYP GAF 0.25-0.5	SSX GAF 0.25-0.5	500 cts/kg	10%
210	SYP GAF 0-0.5	SSX GAF 0-0.5	500 cts/kg	10%
180	SYP GAF 0-0.35	SSX GAF 0-0.35	500 cts/kg	10%
125	SYP GAF 0-0.25	SSX GAF 0-0.25	500 cts/kg	10%
90	SYP GAF 0-0.2	SSX GAF 0-0.2	100 cts/kg	2%
75	SYP GAF 0-0.15	SSX GAF 0-0.15	100 cts/kg	2%
50	SYP GAF 0-0.1	SSX GAF 0-0.1	100 cts/kg	2%
25	SYP GAF 0-0.05	SSX GAF 0-0.05	100 cts/kg	2%
18	SYP GAF 0-0.03	SSX GAF 0-0.03	50 cts/kg	1%

PROPERTIES	SYP	SSX
GRADING	precision	precision
SYNTHESIS	HPHT	explosion
CRYSTAL STRUCTURE	monocrystalline	polycrystalline
PARTICLE SHAPE	blocky	blocky
FRACTURING MODE	macro-fracture	nano-fracture
SURFACE STRUCTURE	less angular	rough
IMPACT RESISTANCE	high	low
PURITY	> 99.5%	> 99.5%
BONDING SYSTEMS	VI, MB, EP	
DENSITY	3.52 g/cm ³	3.52 g/cm ³