

ThruTek Applied Materials produces over 100 standard and customized grades of AlN powders to meet a wide range of application requirements. ThruTek has over 14 years of expertise in research and development of Aluminum Nitride powders.

### NWS Series

NWS Series aluminum nitride powders are surface treated for outstanding water resistance. They are also surface coated with a silane coupling agent for improved bonding with silicones.

NWS series have irregular shaped particles but with smoother and rounded edges. Significantly improved specific surface area (SSA) means you get a much higher filling rate and lower viscosity.

### Key Applications

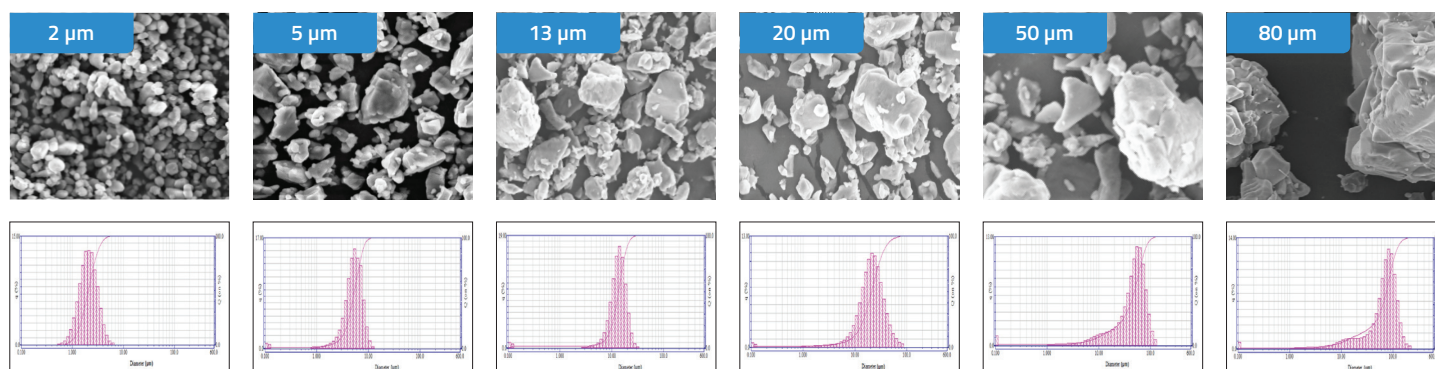
NWS Series offers 2  $\mu\text{m}$  to 80  $\mu\text{m}$  D50 range. Smaller size AlN powders are ideal for sub-filler use, and to develop ultra-thin TIMs.

NWS Series offers excellent fluidity and processability. All powder grades can be used in a variety of silicones to develop highly thermal conductive products such as adhesives, gels, grease, pads and tapes, etc.

Properties		Available Grades					
		AlN020NWS	AlN050NWS	AlN130NWS	AlN200NWS	AlN500NWS	AlN800NWS
Particle Type		Polycrystalline					
Particle Shape		Roundish					
Surface Coating		Surface coated for improved bonding with silicone polymers					
Particle Size	D10	1.1 $\mu\text{m}$	3 $\mu\text{m}$	6 $\mu\text{m}$	9 $\mu\text{m}$	10 $\mu\text{m}$	15 $\mu\text{m}$
	D50	<b>2 <math>\mu\text{m}</math></b>	<b>5 <math>\mu\text{m}</math></b>	<b>13 <math>\mu\text{m}</math></b>	<b>20 <math>\mu\text{m}</math></b>	<b>50 <math>\mu\text{m}</math></b>	<b>80 <math>\mu\text{m}</math></b>
	D90	3.5 $\mu\text{m}$	9 $\mu\text{m}$	20 $\mu\text{m}$	40 $\mu\text{m}$	80 $\mu\text{m}$	120 $\mu\text{m}$
Specific Surface Area (SSA)		< 2.5 m <sup>2</sup> /g	< 0.8 m <sup>2</sup> /g	< 0.35 m <sup>2</sup> /g	< 0.2 m <sup>2</sup> /g	< 0.2 m <sup>2</sup> /g	< 0.2 m <sup>2</sup> /g
Impurities	Ca	<100 ppm					
	Fe	<200 ppm					
	Si	<1000 ppm					
	Pb	<10 ppm					
	C	<600 ppm					
	O	<0.9 wt%	<0.5 wt%	<0.5 wt%	<0.5 wt%	<0.5 wt%	<0.5 wt%
Anti-Hydrolysis	Water Resistant	State-of-the-art 'Water Resistance' treatment applied					
	Rated For	No hydrolysis after 1000+ hours of being directly submerged in water (under 85 °C / 85% conditions)					
Application		Recommended for use as filler in silicone polymers					

Chemical Name Aluminum Nitride | Formula AlN | CAS Number 24304-00-5 | Form Powder | Color White | Purity  $\geq$  99% | Melting Point > 2200 °C | Density 3.26 g/cm<sup>3</sup>

### SEM Photo & Particle Size Distribution



**Disclaimer:** Data represented in this document are typical values only and not guaranteed. ThruTek reserves the right to make changes to the product information contained herein without notice.