

## NFE Series - Product Datasheet

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.

### NFE Series

NFE Series aluminum nitride powders have reduced impurities and a very low oxygen content. NFE Series powders are surface coated with a silane coupling agent for improved bonding with epoxies.

NFE 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

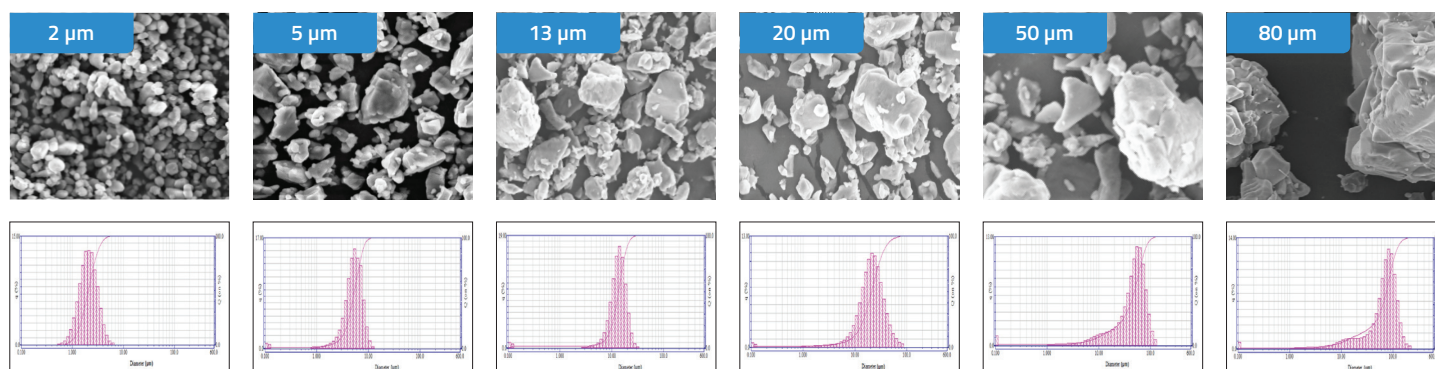
NFE Series offers 2  $\mu\text{m}$  to 80  $\mu\text{m}$  D50 range. Smaller size AlN powders are ideal for sub-filler use, and to develop ultra-thin TIMs.

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

Properties		Available Grades					
		AlN020NFE	AlN050NFE	AlN130NFE	AlN200NFE	AlN500NFE	AlN800NFE
Particle Type		Polycrystalline					
Particle Shape		Roundish					
Surface Coating		Surface coated for improved bonding with epoxy resins					
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	Basic water resistance from surface coating. Additional water resistance treatment not applied					
	Rated For	Surface-coated AlN powder hydrolyzes in water in 24 to 72 hours					
Application		Recommended for use as filler in epoxy resins					

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.