

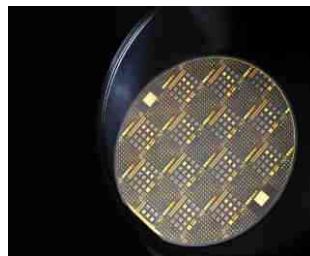


**GlobalTop Technology Inc.**  
**Applied Materials BU**



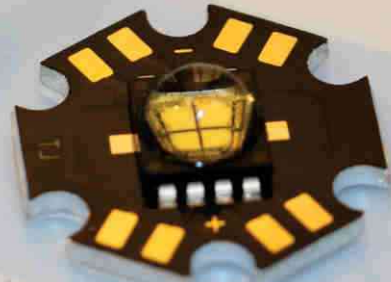
# **Aluminum Nitride SFS Series**

## **Product Datasheet**



# SFS Series

Aluminum Nitride Powder



## SFS SERIES : Surface modification for dispersion enhancement & hydrolysis resistance

SFS series is designed for silicone resins, but also fits other types of resins. SFS ALN powder enhances the coupling effect with the organic matrix to improve the dispersion of ALN powder. It also forms a protection layer against the hydrolysis with water or moisture.

SFS ALN powder is available in a variety of particles sizes.

### Features

- Low iron (<300ppm) and other metal impurities
- Water Resistant
- Excellent Dispersion
- Diversity in size (2  $\mu\text{m}$  - 80  $\mu\text{m}$ )
- Customized size & surface coating supported

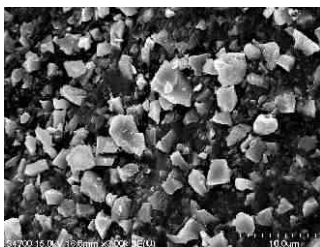
### Product Selector

Part Number	Size Distribution (unit : $\mu\text{m}$ )			ICP Analysis (Unit: ppm)				O (%)
	D10	D50	D90	Ca	Fe	Si	Pb	
AIN020SFS	1	2	4	<100	<300	<1500	<10	
AIN050SFS	2.5	5	10	<100	<300	<1000	<10	
AIN100SFS	4.5	10	25	<100	<300	<500	<10	
AIN200SFS	6	20	60	<100	<300	<300	<10	
AIN300SFS	9	30	82	<100	<300	<300	<10	
AIN500SFS	Available on request							
AIN800SFS	Available on request							

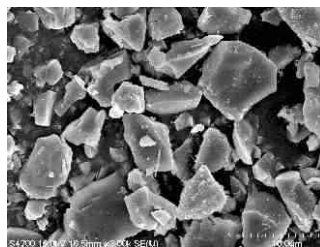
### Applications

- Thermal filler for Thermal grease, pad, tape, PCM, etc.
- Thermal additives for Silicon and EMC (Epoxy Molding Compound)
- TCP filler for LED bulb heat sink

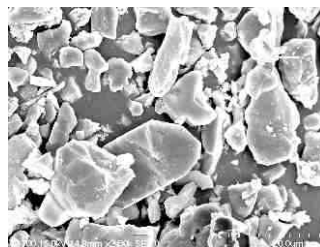
2 $\mu\text{m}$  AIN SEM (X3000)



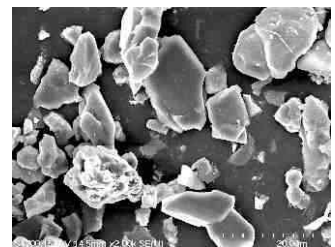
5 $\mu\text{m}$  AIN SEM (X3000)



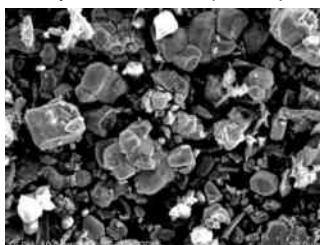
10 $\mu\text{m}$  AIN SEM (X2000)



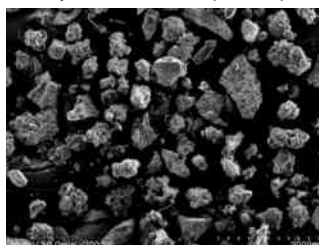
20 $\mu\text{m}$  AIN SEM (X2000)



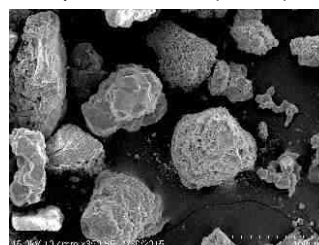
30 $\mu\text{m}$  AIN SEM (X800)

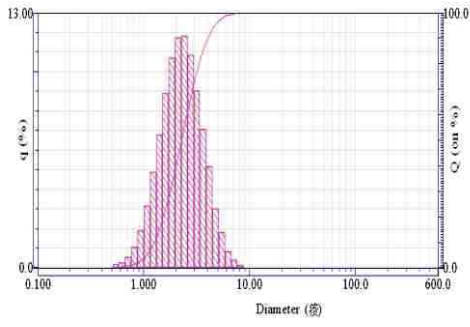
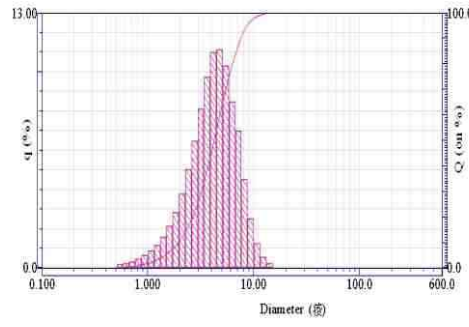
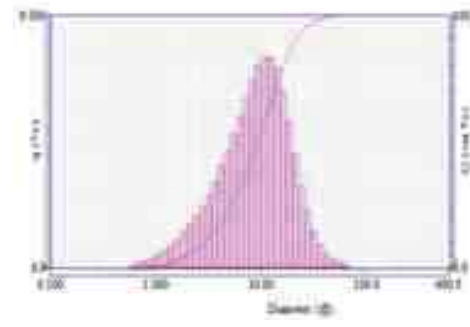
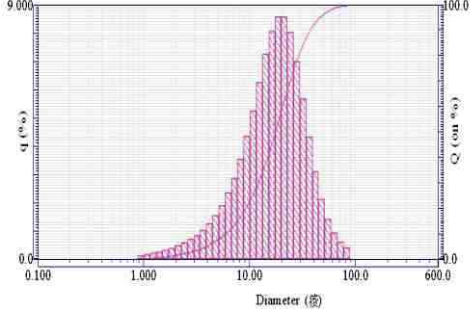
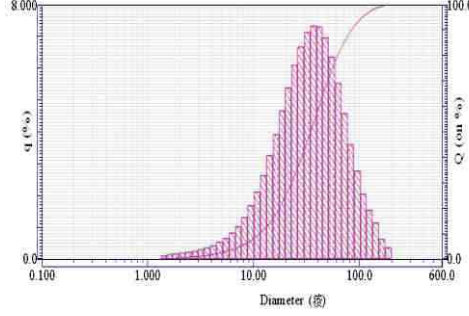
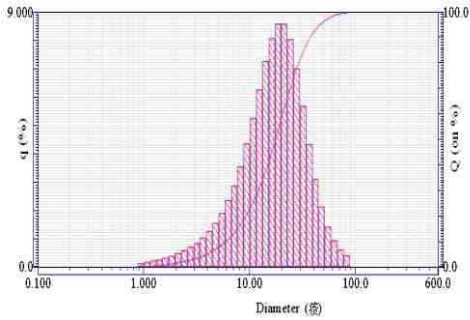
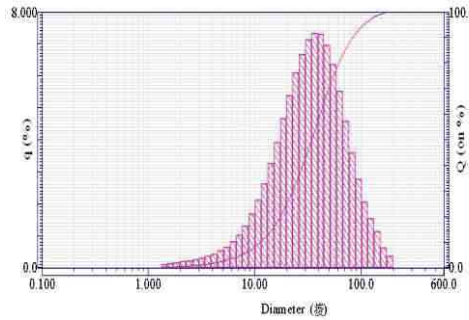
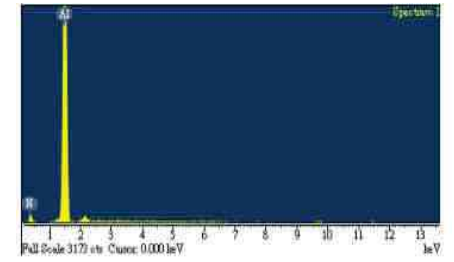


50 $\mu\text{m}$  AIN SEM (X200)

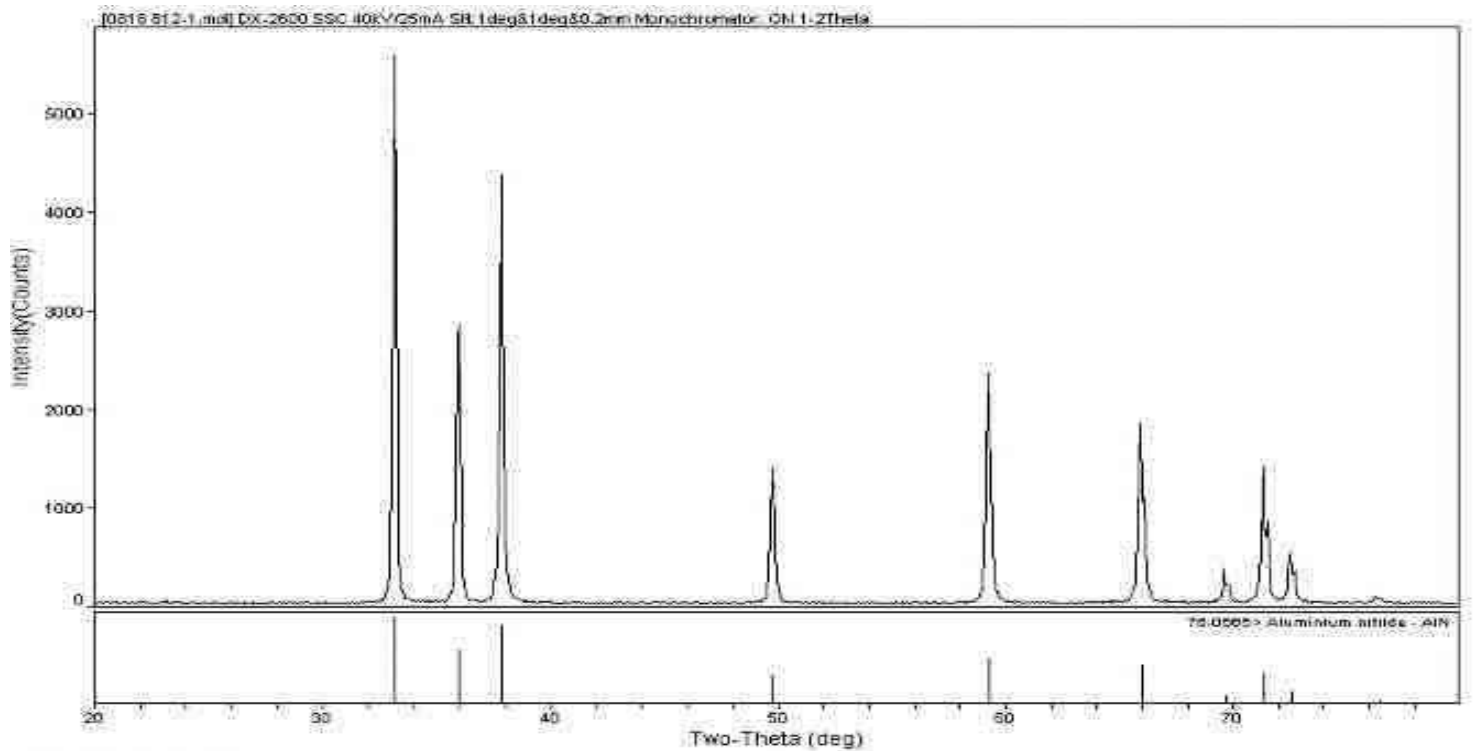


80 $\mu\text{m}$  AIN SEM (X300)



**2 $\mu$ m****5 $\mu$ m****10 $\mu$ m****20 $\mu$ m****30 $\mu$ m****50 $\mu$ m****80 $\mu$ m****EDS Analysis**

Element	Weight %	Atomic %
Nitrogen	34.84	50.73
Aluminum	65.16	49.27
Total	100.00	

**XRD Analysis**

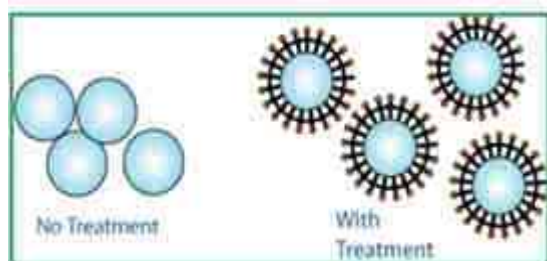
## Advantages of Surface Treatment

There are two main purposes of the surface treatment on aluminum nitride powder:

- To prevent the degradation of AlN with the presence of water ( protective layer, refer to the Figure 1a )
- To improve the dispersion of the AlN filler within the organic matrix( functionalized surface for interface compatibility, refer to the Figure 1b).

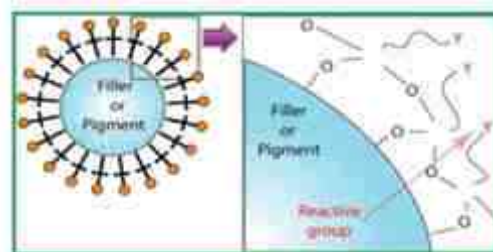
From the SEM cross-section picture of surface treatment , the typical thickness of the protective layer was about 100 nm( refer to Figure 2), and the some anti-hydrolysis tests of SF series powder were showed in the figure 3.

**Figure 1a**  
Protective Layer, Anti Hydrolysis



**Figure 2**

**Figure 1b**  
Surface Interface Compatibility



**Figure 3**

