

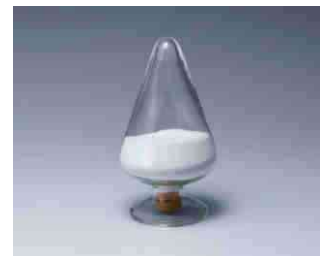
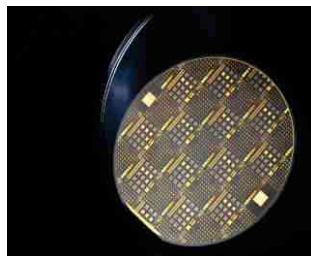


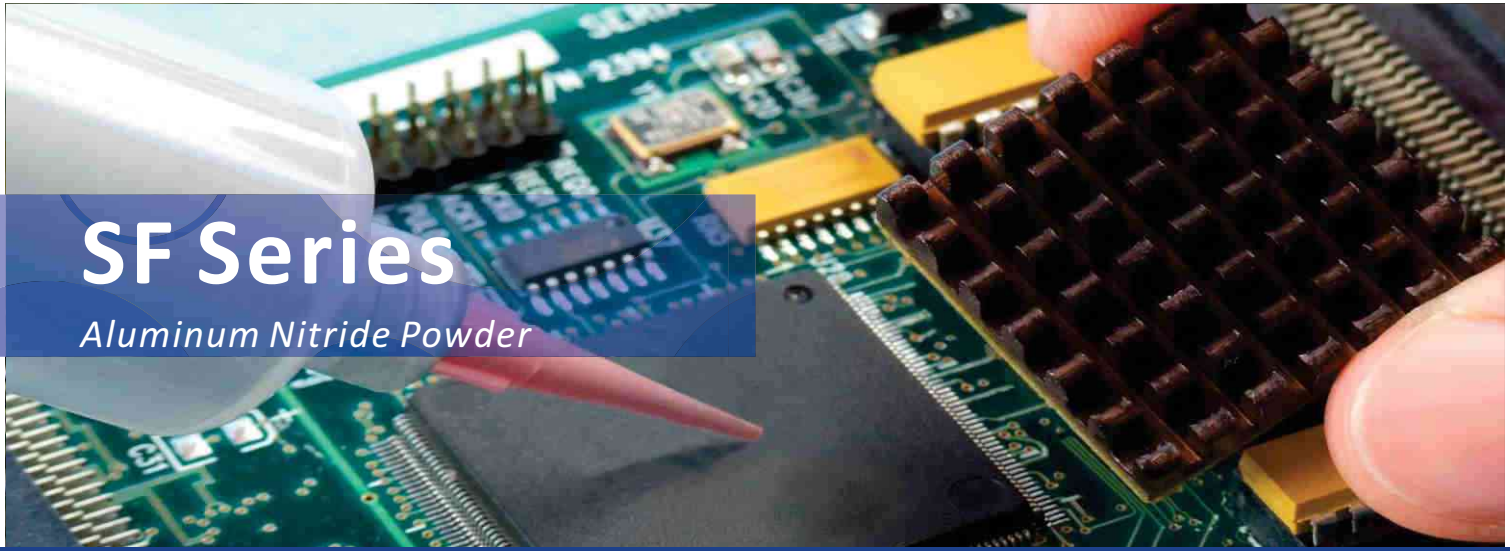
GlobalTop Technology Inc.
Applied Materials BU



Aluminum Nitride SF Series

Product Datasheet





SF Series

Aluminum Nitride Powder

SF SERIES : Surface modification for dispersion enhancement & hydrolysis resistance

Our AlN SF series is a grade with the surface treatment which can not only enhance the coupling effect with the organic matrix to improve the dispersion of AlN powder, but also form a protection layer against the hydrolysis with water or moisture presented.

This SF series powder is designed for epoxy resins, but can also fit other types of resins. Contact our team to find more.

Features

- Water Resistant with Excellent Dispersion
- Low Iron (<300 ppm) and other metal impurities
- Sharp size distribution
- Diversity in size (2 μm - 80 μm)
- Customization supported

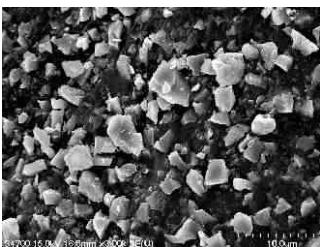
Product Selector

Part Number	Size Distribution (unit : μm)			ICP Analysis (Unit: ppm)				O (%)
	D10	D50	D90	Ca	Fe	Si	Pb	
AIN020SF	1	2	4	<100	<300	<1500	<10	
AIN050SF	2.5	5	10	<100	<300	<1000	<10	
AIN100SF	4.5	10	25	<100	<300	<500	<10	
AIN200SF	6	20	60	<100	<300	<300	<10	
AIN300SF	9	30	82	<100	<300	<300	<10	
AIN500SF								
AIN800SF								

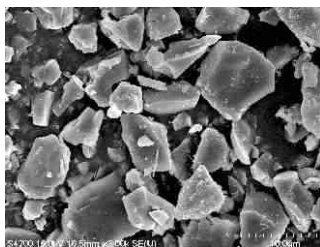
Applications

- Thermal filler for Thermal grease, pad, tape, PCM, etc.
- Thermal filler for dielectrics of FCCL, MCPCB
- Thermal additives for EMC (Epoxy Molding Compound)
- TCP filler for LED bulb heat sink

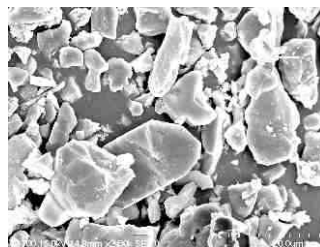
2 μm AlN SEM (X3000)



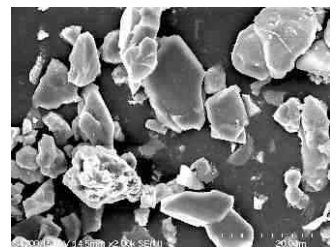
5 μm AlN SEM (X3000)



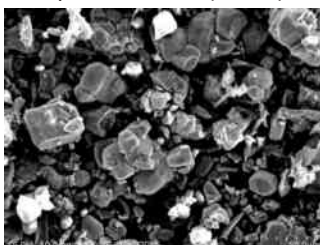
10 μm AlN SEM (X2000)



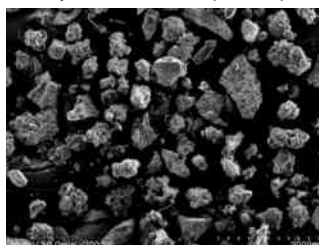
20 μm AlN SEM (X2000)



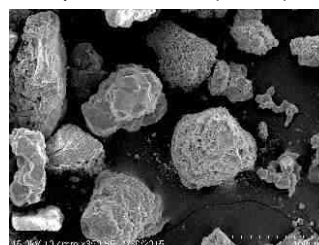
30 μm AlN SEM (X800)



50 μm AlN SEM (X200)



80 μm AlN SEM (X300)



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

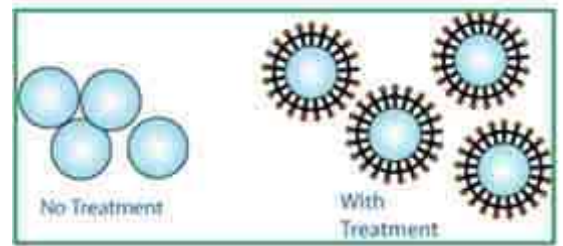


Figure 1b
Surface Interface Compatibility

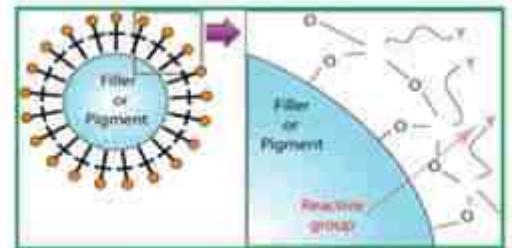


Figure 2

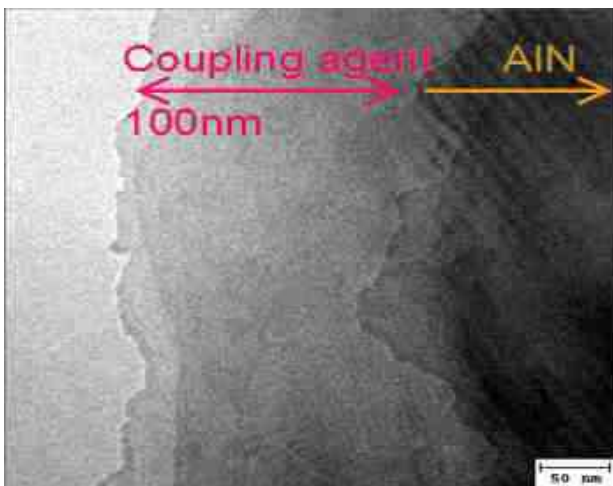
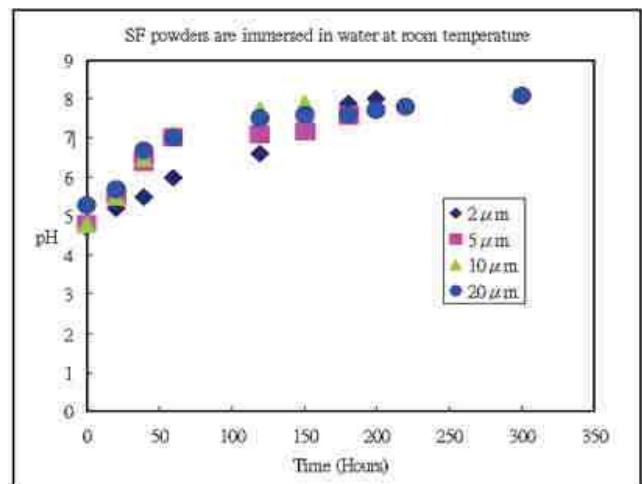
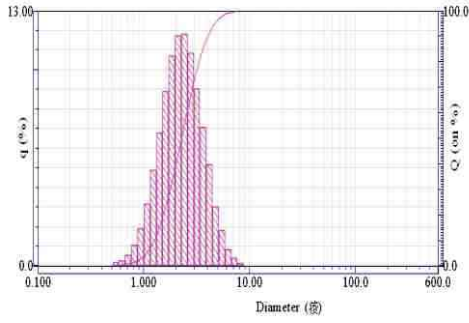
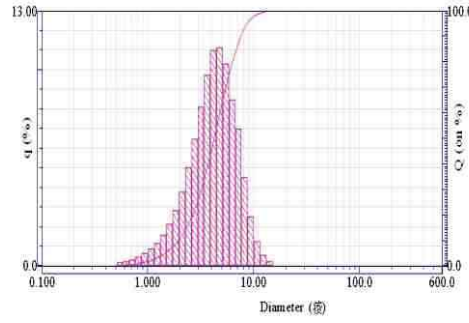
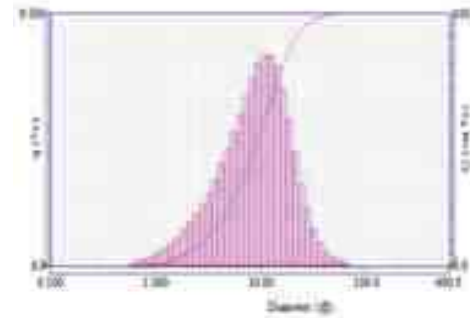
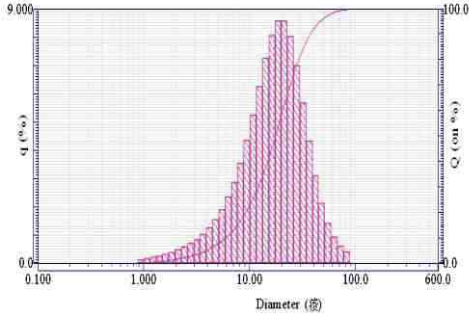
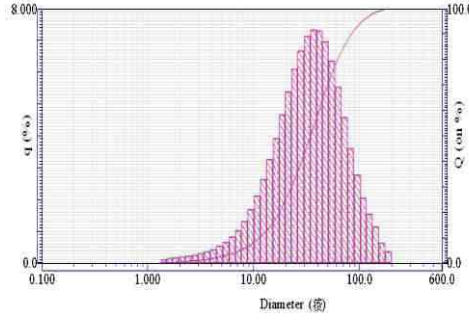
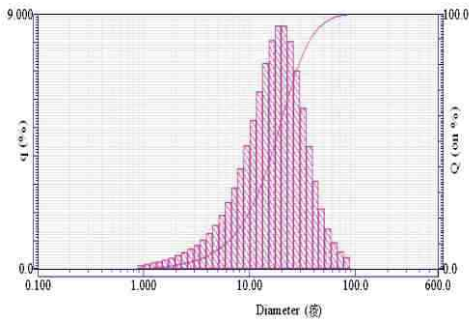
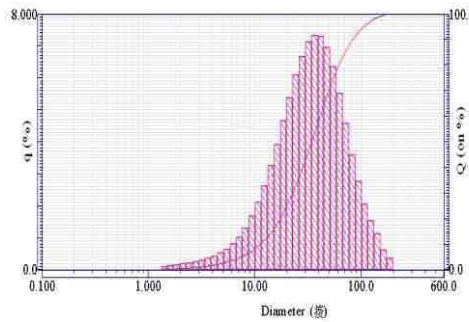
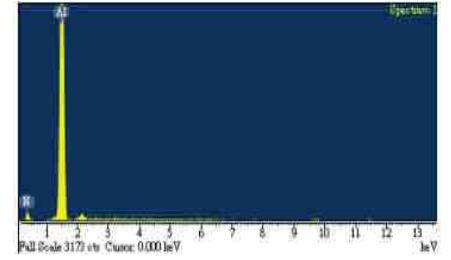
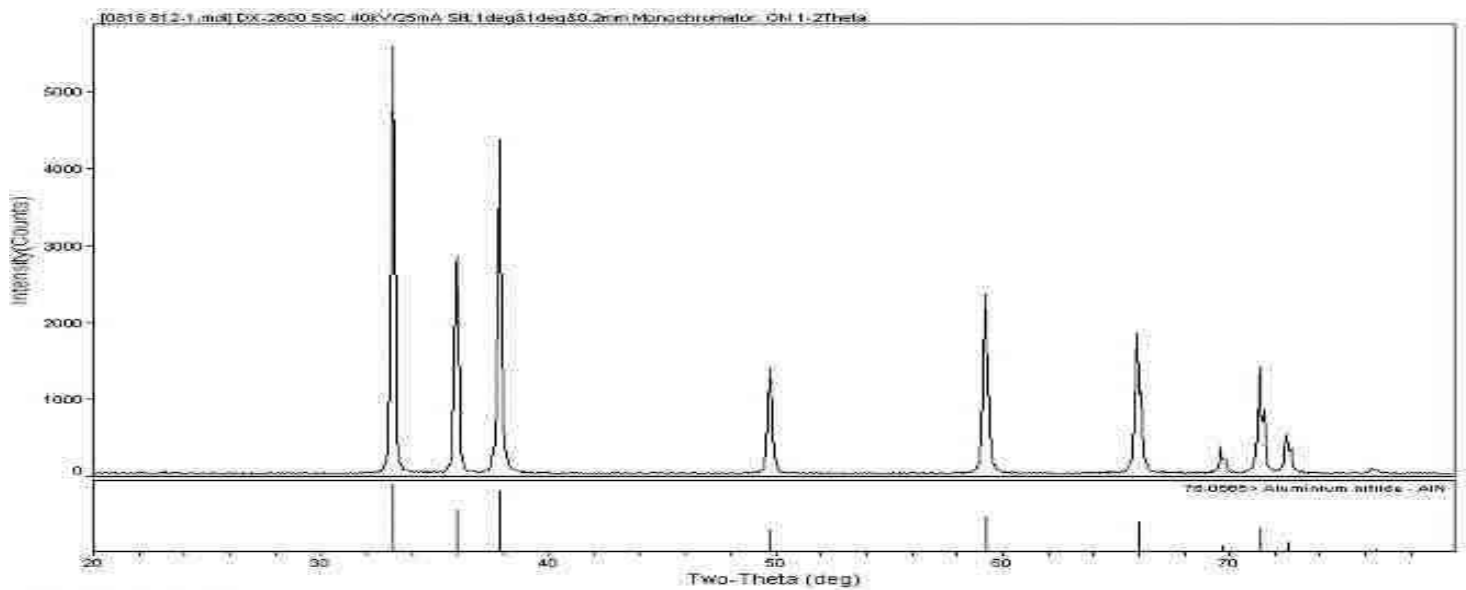


Figure 3



2 μ m**5 μ m****10 μ m****20 μ m****30 μ m****50 μ m****80 μ m****EDS Analysis**

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

XRD Analysis

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