FINAL
+ADVANCED MATERIALS

TECHNICAL DATA SHEET

Rev. N° 1 - 05.02.2025

2MS.004
Aluminium Nitride Powders

Overview

Final Advanced Materials offer a range of high purity aluminium nitride powders. The thermal and electrical properties of these powders are particularly appreciated in the semiconductor and electronics industry.

Warning: Since the powders have not undergone any surface treatment, they must not be brought into contact with air or moisture before being used.

Characteristics

- High thermal conductivity
- High electrical resistivity
- High hardness
- Resistance to corrosion
- Low dielectric loss
- Few metal impurities (< 700 ppm iron)
- Good dispersion
- Low coefficient of thermal expansion

Applications

- Filler for improving thermal conductivity
- Thermal interface material
- Manufacture of substrates
- Additives for epoxy moulding compounds
- Filling for LED bulb heat sinks

Final Advanced Materials Sàrl
4 avenue de Strasbourg
68350 Didenheim – France
Tel : +33 (0) 3 67 78 78 78

Final Advanced Materials GmbH
Basler Strasse 115
79115 Freiburg – Deutschland
Tel: + 49 (0) 761 47 87 336

www.final-materials.com

info@final-materials.com

FINAL ADVANCED MATERIALS

TECHNICAL DATA SHEET

Rev. N° 1 - 05.02.2025

Technical Data

Series 100

High-purity aluminum nitride powder with low iron content (< 700 ppm). Features sharp particle size distribution and is available in various sizes for diverse applications. Without surface treatment, requiring careful handling to avoid exposure to air or water.

Property		Unit	107-0101	107-0102	107-0103	107-0104	107-0105	107-0106	107-0107
Reference			1POW001212	1POW001213	1POW001214	1POW001215	1POW001216	1POW001217	1POW001218
Colour			grey	grey	grey	grey	grey	grey	grey
Density		g/cm²	3,26	3,26	3,26	3,26	3,26	3,26	3,26
Melting Point		°C	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Particle Type			amorph	amorph	amorph	amorph	amorph	amorph	amorph
Particle Structure			irregular	irregular	irregular	irregular	irregular	irregular	irregular
Surface Coating			no	no	no	no	no	no	no
Granulometry	d_{10}	µm	1	2	4	6	9	40	58
	d_{50}	µm	2	5	10	20	30	50	80
	d_{90}	µm	4	10	25	60	82	72	108
Specific surface area		m²/g	< 3	< 2	< 1.5	< 1.5	< 0.5	< 0.5	< 0.5
Purity		%	98	98	98	98	98	98	98
Impurity	Ca	ppm	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	Fe		< 700	< 700	< 700	< 700	< 700	< 700	< 700
	Si		< 200	< 200	< 200	< 200	< 200	< 200	< 200
	Pb		< 10	< 10	< 10	< 10	< 10	< 10	< 10
	C	%	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	O		< 1.5	< 1	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5
Anti-Hydrolyse Property	Water Resistant		no	no	no	no	no	no	no

Aluminium Nitride Powders

Series 200

High-purity single-crystal particles available in D50 sizes ranging from 2 µm to 80 µm. Can be coated for specific applications. Suitable for silicone polymers and epoxy resins to develop thermally conductive products such as greases, gels, films, tapes, pads, and coatings.

Property		Unit	201	202	203	204	205	206	207
Reference			1POW001219	1POW001220	1POW001221	1POW001222	1POW001223	1POW001224	1POW001225
Particle Type			amorph	amorph	amorph	amorph	amorph	amorph	amorph
Particle Structure			irregular	irregular	irregular	irregular	irregular	irregular	irregular
Surface Coating			no	no	no	no	no	no	no
Granulometry	d_{10}	µm	1	2	4	6	9	40	58
	d_{50}	µm	2	5	10	20	30	50	80
	d_{90}	µm	4	10	25	60	82	72	108
Specific surface area		m^2/g	< 3.0	< 2.0	< 1.5	< 1.5	< 0.5	< 0.5	< 0.5
Impurity	Ca	ppm	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	Fe		< 200	< 200	< 200	< 200	< 200	< 200	< 200
	Si		< 200	< 200	< 200	< 200	< 200	< 200	< 200
	Pb		< 10	< 10	< 10	< 10	< 10	< 10	< 10
	C	%	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	O		< 1.5	< 1.0	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5
Anti-Hydrolyse Property	**Water Resistant**		no	no	no	no	no	no	no

Aluminium Nitride Powders

Series 400

High-purity aluminum nitride powder with a surface coating for epoxy resin compatibility and specially treated for advanced water resistance. Suitable for epoxy resins to develop thermally conductive products such as greases, gels, films, tapes, pads, and coatings.

Property		Unit	401	402	403	404	405	406	407
Reference			1POW001226	1POW001227	1POW001228	1POW001229	1POW001230	1POW001231	1POW001232
Particle Type			amorph	amorph	amorph	amorph	amorph	amorph	amorph
Particle Structure			irregular	irregular	irregular	irregular	irregular	irregular	irregular
Surface Coating			Yes, for epoxy	Yes, for epoxy	Yes, for epoxy	Yes, for epoxy	Yes, for epoxy	Yes, for epoxy	Yes, for epoxy
Granulometry	**d_{10}**	**µm**	1	2	4	6	9	40	58
	d_{50}	**µm**	2	5	10	20	30	50	80
	d_{90}	**µm**	4	10	25	60	82	72	108
Specific surface area		**m^2/g**	< 3.0	< 2.0	< 1.5	< 1.5	< 0.5	< 0.5	< 0.5
Impurity	**Ca**	**ppm**	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	Fe		< 300	< 300	< 300	< 300	< 300	< 300	< 300
	Si		< 1.500	< 1.000	< 500	< 300	< 300	< 300	< 300
	Pb		< 10	< 10	< 10	< 10	< 10	< 10	< 10
	C	**%**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	O		< 1.5	< 1.0	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5
Anti-Hydrolyse Property	**Water Resistant**		Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced

Aluminium Nitride Powders

Series 500

High-purity aluminum nitride powder with a surface coating optimized for silicone polymers and specially treated for advanced water resistance. Suitable for silicone polymers to develop thermally conductive products such as greases, gels, films, tapes, pads, and coatings.

Property		Unit	501	502	503	504	505	506	507
Reference			1POW001233	1POW001234	1POW001235	1POW001236	1POW001237	1POW001238	1POW001239
Particle Type			amorph	amorph	amorph	amorph	amorph	amorph	amorph
Particle Structure			irregular	irregular	irregular	irregular	irregular	irregular	irregular
Surface Coating			yes, for silicone	yes, for silicone	yes, for silicone	yes, for silicone	yes, for silicone	yes, for silicone	yes, for silicone
Granulometry	d_{10}	µm	1	2	4	6	9	40	58
	d_{50}	µm	2	5	10	20	30	50	80
	d_{90}	µm	4	10	25	60	82	72	108
Specific surface area		m^2/g	< 3.0	< 2.0	< 1.5	< 1.5	< 0.5	< 0.5	< 0.5
Impurity	Ca	ppm	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	Fe		< 300	< 300	< 300	< 300	< 300	< 300	< 300
	Si		< 1.500	< 1.000	< 500	< 300	< 300	< 300	< 300
	Pb		< 10	< 10	< 10	< 10	< 10	< 10	< 10
	C	%	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	O		< 1.5	< 1.0	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5
Anti-Hydrolyse Property	Water Resistant		Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced

Aluminium Nitride Powders

Series 600

High-purity aluminum nitride powder specially treated for advanced water resistance, capable of withstanding moisture for hundreds of hours. Suitable for silicone polymers and epoxy resins to develop thermally conductive products such as greases, gels, films, tapes, pads, and coatings.

Property		Unit	601	602	603	604	605	606	607
Reference			1POW001240	1POW001241	1POW001242	1POW001243	1POW001244	1POW001245	1POW001246
Particle Type			amorph	amorph	amorph	amorph	amorph	amorph	amorph
Particle Structure			irregular	irregular	irregular	irregular	irregular	irregular	irregular
Surface Coating			No	No	No	No	No	No	No
Granulometry	d_{10}	µm	1	2	4	6	9	40	58
	d_{50}	µm	2	5	10	20	30	50	80
	d_{90}	µm	4	10	25	60	82	72	108
Specific surface area		m^2/g	< 3.0	< 2.0	< 1.5	< 1.5	< 0.5	< 0.5	< 0.5
Impurity	Ca	ppm	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	Fe		< 200	< 200	< 200	< 200	< 200	< 200	< 200
	Si		< 200	< 200	< 200	< 200	< 200	< 200	< 200
	Pb		< 10	< 10	< 10	< 10	< 10	< 10	< 10
	C	%	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	O		< 1.5	< 1.0	< 0.75	< 0.5	< 0.5	< 0.5	< 0.5
Anti-Hydrolyse Property	Water Resistant		Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced	Yes, advanced

Physical variables included in this documentation are provided by way of indication only and do not, under any circumstances, constitute a contractual undertaking. Please contact our technical service if you require any additional information.