

ALPHA-SILICON NITRIDE GRADE M 9, GRADE M 11

Chemical Formula	$\alpha\text{-Si}_3\text{N}_4$
Chemical Name	Silicon Nitride
Description of Product	High alpha phase Si_3N_4
HS Number	28500030
Grades Available	Product Designation Si_3N_4 Grade M 9 Si_3N_4 Grade M 11

Chemical Characteristics

(Mass fraction in % [cg/g]; ppm [$\mu\text{g/g}$])

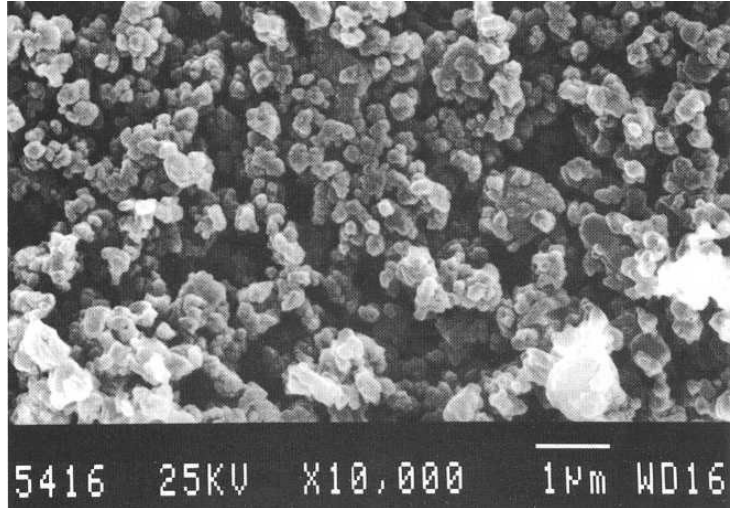
	Grade M 9			Grade M 11		
N	min.	38.5	%	min.	38.5	%
C	max.	0.2	%	max.	0.2	%
O	max.	1.2	%	max.	1.5	%
Al	max.	0.08	%	max.	0.08	%
Ca	max.	0.01	%	max.	0.01	%
Fe	max.	0.008	%	max.	0.008	%
$\alpha\text{-Si}_3\text{N}_4$	min.	90.0	%	min.	90.0	%

Physical Characteristics

Specific Surface Area ¹⁾	8.0 - 10.0	m^2/g	12.0 - 15.0	m^2/g
Green Density ²⁾	1.7 - 1.9	g/cm^3	1.7 - 1.9	g/cm^3
Particle Size Distribution ³⁾				
D 90 %	1.5 - 2.5	μm	1.1 - 1.5	μm
D 50 %	0.7 - 0.9	μm	0.5 - 0.7	μm
D 10 %	0.2 - 0.4	μm	0.2 - 0.4	μm

1) TRISTAR 3000 by BET (ASTM D 3663), 2) 10^3 kg/cm², 3) MASTERSIZER by Laser Light Diffraction per ASTM B 822, deglomeration with high energy ultrasonic before analysis.

SEM Photomicrograph⁴⁾
scale see photograph,
 α -Si₃N₄ Grade M 11



Packaging

Grade M 9: 25 kg steel drums with polyethylene inlet.
(30 Liter) 8 drums on one pallet CP1
(1000x1200 mm) = 1 Packaging-unit of 200 kg.
Other packaging / quantity on request.
Grade M 11: 25 kg steel drums with polyethylene inlet.
(60 Liter) 8 drums on one pallet CP1
(1000x1200 mm) = 1 Packaging-unit of 200 kg.
Other packaging / quantity on request.

Lot Size

H.C. Starck silicon nitride powders are available in homogeneous lots up to 5 tons.

Sintering Aid

As a typical sintering aid for Si₃N₄-powders we recommend our Y₂O₃-powders Grade B and C.

Storage and Handling

Storage and handling are subject to the rules and regulations in the country of use. Store in a closed container.

Hazards identification in Advertising (REGULATION (EC) No 1272/2008 Article 48)

None.

Documentation

An inspection document in accordance with EN 10204 is supplied with every shipment.

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