

INSTRUCTION MANUAL

StarCeram® N rtp Powders

04.08.2025

PRODUCT DESCRIPTION

Formulation of silicon nitride and processing additives for pressing, green machining and sintering.

AVAILABLE GRADES

- ▶ StarCeram® N rtp Grade M (preferred for machining after isostat. pressing)
- ▶ StarCeram® N rtp Grade P (preferred for dry pressing)

HANDLING AND STORAGE

StarCeram® N rtp, as a complex system of organic and inorganic ingredients, is made for early usage. The shelf-life for unrestricted processability is dependent on the storage conditions and the specific application it is used for. Storage and handling are subject to the rules and regulations in the country of use. Store at room temperature in a sealed and closed original container.

INITIAL CONDITION

Apparent density: $> 0.8 \text{ g/cm}^3$ (typical value).

PRESSING AND SHAPING

We recommend a pressing pressure from 1,650 to 1,800 bar. Possible types of shaping are cold isostatic pressing (CIP) and uniaxial pressing. Green density: Grade M $> 1.9 \text{ g/cm}^3$, Grade P $> 1.8 \text{ g/cm}^3$ (typical value).

DEWAXING

~ 560 °C under air, heating rate: 10 - 120 °C/h *

Furnace with catalytic or thermal post combustion is recommended.

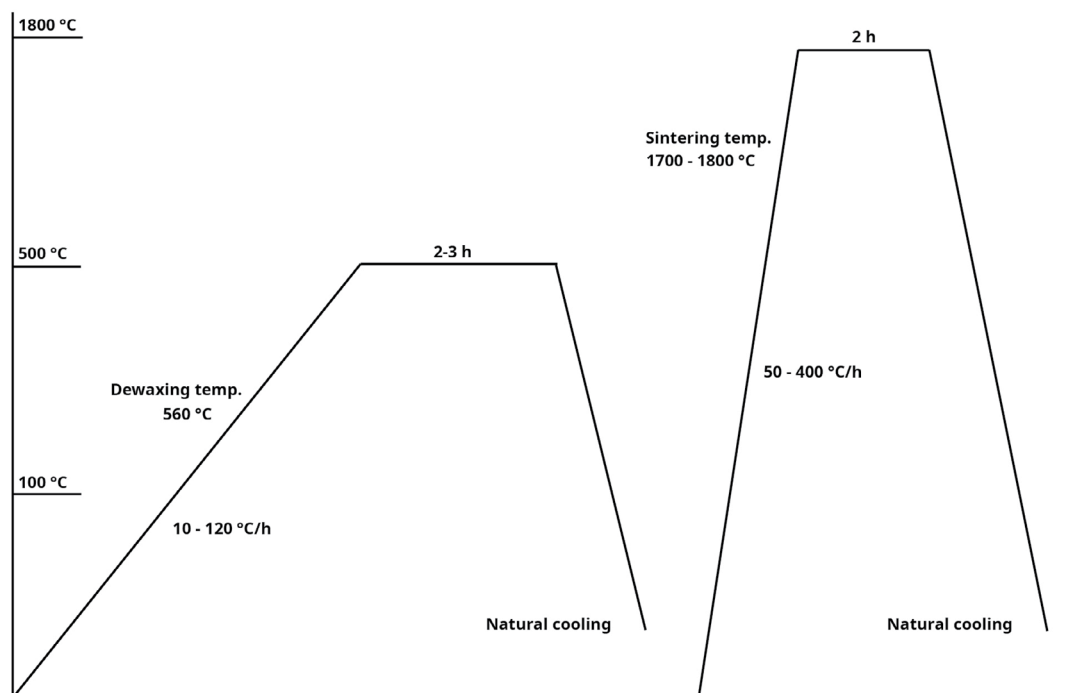
SINTERING

- ▶ Nitrogen atmosphere
- ▶ Pressure 1 - 10 bar
- ▶ Hold time 2 - 3 h
- ▶ To 1,750°C: heating rate 50 - 400 °C/h *
- ▶ $> 1,200 \text{ °C}$: pressure ~ 1 bar
- ▶ 1,700 - 1,800 °C: pressure 10 bar *

Sintered density: $> 3.2 \text{ g/cm}^3$ (typical value).

* All specified values are dependent on geometrical properties.

DEWAXING / SINTERING



TEMPERATURES AND HEATING RATE OF DEWAXING AND SINTERING DEPENDS ON:

- ▶ Body size
- ▶ Wall thickness
- ▶ Green density
- ▶ Method of temperature measurement
- ▶ Measuring position (heater, casing, part)
- ▶ Kiln

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