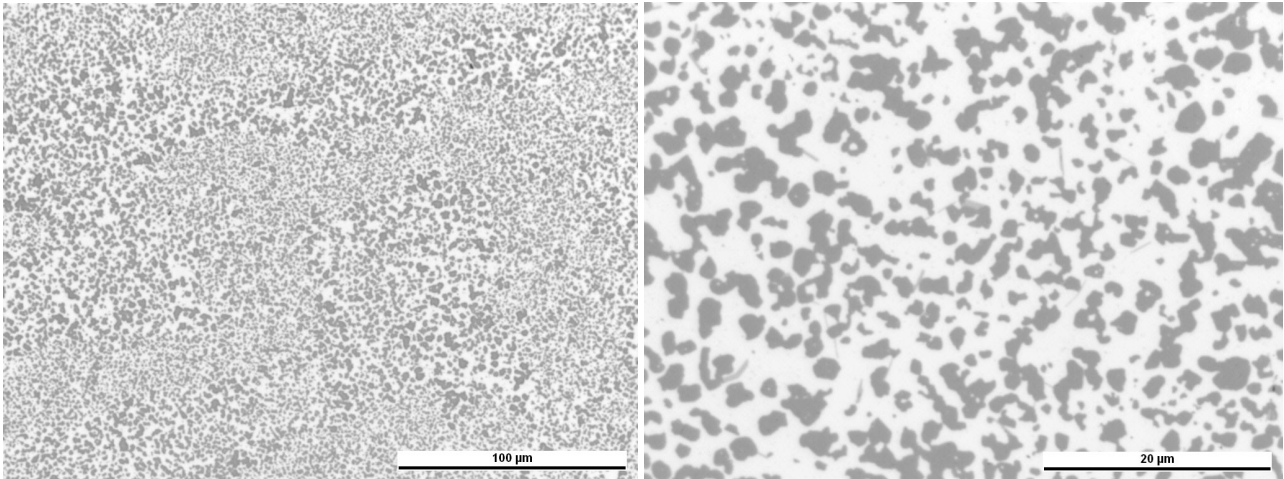


## DISPAL<sup>®</sup> S220 AM (AlSi35)

DISPAL<sup>®</sup> S220 AM is a material characterized by a high stiffness, low thermal expansion, excellent wear and tear behaviour, good machinability, and a low density. The material is often used as a replacement for steel and carbon fiber, and it is especially suitable for those applications that require high precision under high loads and elevated temperatures. It is already widely used in a wide range of industries such as linear technology, robotics, and aerospace.

Typical applications:

- Linear technology
- Optics
- Satellite components



Gränges Powder Metallurgy (GPM) is a global supplier of sprayformed aluminium products and aluminium powders for additive manufacturing, specialized in high performance aluminium alloys. Our products can be found in automotive, aerospace, industrial robotics industries and more. GPM has atomization capacity in France and it is a wholly owned subsidiary of the global aluminium technology Gränges.

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## **POWDER CHEMICAL COMPOSITION**

	Min	Max
Al	Balance	
Si	34.0%	36.0%

## **PHYSICAL PROPERTIES**

(At 20°C)

Property	Unit	Value
Absolute density	g/cm <sup>3</sup>	2.54 ± 5%
Relative density <sup>1</sup>	[% ]	≥ 99.8

## **THERMAL CONDUCTIVITY**

Temperature (°C)	30	100	200	300	400
Value (W/mK)	152.4	144.3	136.8	131.0	123.5

## **COEFFICIENT OF THERMAL EXPANSION**

Property	Unit	Value
CTE-value 20 to 100°C	10 <sup>-6</sup> /K	15,1 ± 0.5
CTE-value 20 to 200°C	10 <sup>-6</sup> /K	16,0 ± 0.5
CTE-value 20 to 300°C	10 <sup>-6</sup> /K	16,8 ± 0.5

## **MECHANICAL PROPERTIES<sup>2</sup>**

**HEAT TREATED<sup>5</sup> CONDITION: (minimum values)**

Property	Unit	Temperature					
		20°C	100°C	150°C	200°C	250°C	300°C
Tensile strength, R <sub>m</sub>	MPa	200					
Yield strength, R <sub>p0,2</sub>	MPa	115					
Elongation at break, A	%	1.5					
Young's modulus, E	GPa	90					
Hardness <sup>3</sup> , HV30							

## **ROUGHNESS MEASUREMENT<sup>3</sup>**

Improvement of surface roughness can be achieved based on customer requirements minimum values)

	Unit	Heat treated
		M
Roughness average, Ra	[µm]	8
Mean roughness depth, Rz	[µm]	50

The material properties and mechanical characteristics reflect the current knowledge and experience at the time of publication and do not form a sufficient basis for component design and use on their own. Certain part properties are not guaranteed, and it is the responsibility of the user to qualify the properties and their suitability for specific applications.

[1] Optical density determination at test specimen by light microscopy

[2] Tensile test according to DIN EN Iso 6892-1 Method B, test samples were turned before the test; values for vertical specimen (Z direction)

[3] Roughness measurement according to DIN EN ISO 16610-21 0.8mm