

# VDM® Powder 699 XA

# VDM® Powder 699 XA

VDM® Powder 699 XA is the powder variant of a metal dusting corrosion and oxidation resistant alloy for use in additive manufacturing. This is achieved by high chromium and aluminum content.

VDM® Powder 699 XA is characterized by:

- Spherical particles
- High purity
- Low oxygen content
- High metal dusting corrosion and oxidation resistance
- Weldability under Argon

Designations (based on VDM® Alloy 699 XA)

| Standard | Material designation |
|----------|----------------------|
| EN       | 2.4842 - NiCr30Al    |
| UNS      | N06699               |

Table 1 – Designations

## Chemical composition

|      | Ni   | Cr   | Al  | Fe  | Mn   | Si   | Ti   | Nb   | Cu   | Zr   | C     | N    | P    | S    | B     |
|------|------|------|-----|-----|------|------|------|------|------|------|-------|------|------|------|-------|
| Min. | Bal. | 26.0 | 1.9 |     |      |      |      |      |      |      | 0.005 |      |      |      |       |
| Max. |      | 30.0 | 3.0 | 2.5 | 0.50 | 0.50 | 0.60 | 0.50 | 0.50 | 0.10 | 0.10  | 0.05 | 0.02 | 0.01 | 0.008 |

Table 2 – Chemical composition (wt.-%) according to UNS number N06699

VDM® Powder 699 XA contains low amounts of oxygen of up to 0.03 %.

## Physical properties

| Density                                | Melting range    |
|--|------------------|
| 8.0 g/cm <sup>3</sup> at 20 °C (68 °F) | 1,370-1,390 °C   |
| 0.29 lb/in <sup>3</sup> at 68 °F       | (2,498-2,534 °F) |

# Microstructural properties

VDM® Powder 699 XA has an austenitic microstructure.

# Corrosion resistance

As a result of the high chromium and aluminum content, conventionally manufactured VDM® Alloy 699 XA has very good metal dusting corrosion and oxidation resistance.

# Applications

Due to its excellent metal dusting corrosion and oxidation resistance, VDM® Powder 699 XA is intended for the use in the petrochemical industry.

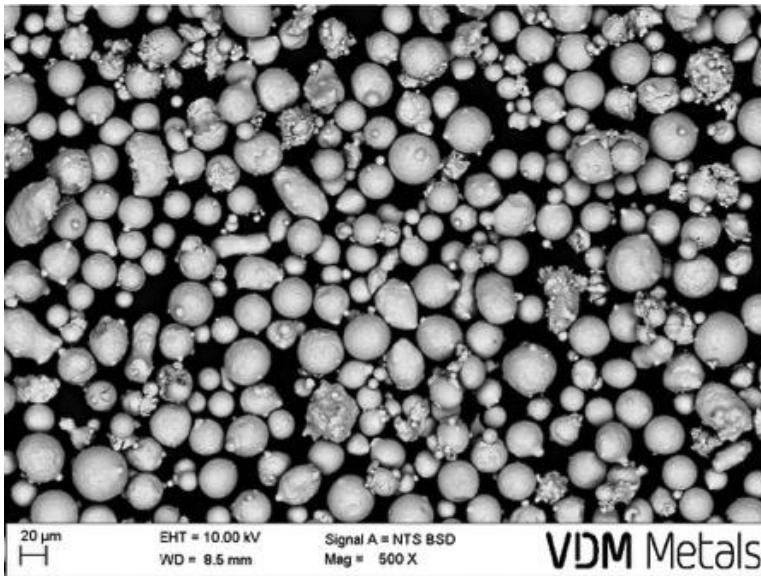
# Availability

According to the AM process requirements of our customers, VDM® Powder 699 XA is available in a wide range of particle fractions from 10 to 250 µm.

## Standard particle fractions

| Particle size distribution<br>µm | Oxygen content<br>% | Porosity < 10µ (pore area)<br>% |
|----------------------------------|---------------------|---------------------------------|
| 10-53                            | < 0.03              | < 0.5                           |
| 53-150                           |                     |                                 |

Additional particle fractions are available on request. Please contact us.



The picture shows a typical micrograph of VDM® Powder 699 XA as an example.

# Legal notice

January 31, 2019

## **Publisher**

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## **Disclaimer**

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