

METAL SOLUTIONS

EOS CobaltChrome MP1

Material Data Sheet

EOS COBALTCHROME MP1

Parts have good corrosion resistance and high mechanical properties even at elevated temperatures plus are nickel-free and show a fine, uniform crystal grain structure. This combination is ideal for many applications in the aerospace and medical industries.

MAIN CHARACTERISTICS

- Corrosion resistance
- Great elevated temperature performance
- Nickel-free

TYPICAL APPLICATIONS

Various applications in aerospace and medical field

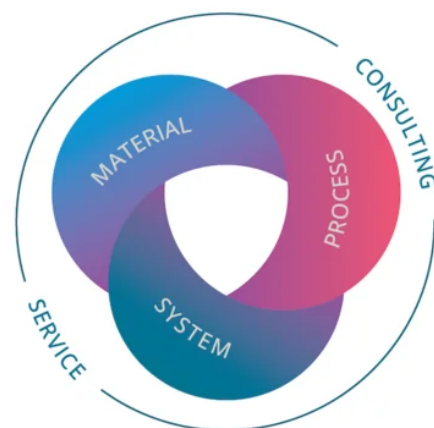
The EOS Quality Triangle

EOS uses an approach that is unique in the AM industry, taking each of the three central technical elements of the production process into account: the system, the material and the process. The data resulting from each combination is assigned a Technology Readiness Level (TRL) which makes the expected performance and production capability of the solution transparent.

EOS incorporates these TRLs into the following two categories:

- Premium products (TRL 7-9): offer highly validated data, proven capability and reproducible part properties.
- Core products (TRL 3 and 5): enable early customer access to newest technology still under development and are therefore less mature with less data.

All of the data stated in this material data sheet is produced according to EOS Quality Management System and international standards



POWDER PROPERTIES

The chemical composition of EOS CobaltChrome MP1 is in accordance with standards ASTM F1537/F799, ASTM F75, ISO 5832-12 and ISO 5832-4.

Powder Chemical Composition (wt.-%)

| Element | Min. | Max. |
|---------|------|---------|
| Co | | Balance |
| Cr | 27 | 30 |
| Mo | 5 | 7 |
| W | - | 0.2 |
| Ni | - | 0.1 |
| Fe | - | 0.75 |
| Mn | - | 1 |
| Si | - | 1 |
| C | - | 0.14 |

Powder Particle Size

| | |
|------------------------------------|------------|
| GENERIC PARTICLE SIZE DISTRIBUTION | 15 - 45 µm |
|------------------------------------|------------|

HEAT TREATMENT

Description

Stress relieving & solution annealing heat treatment relaxes residual stresses, provides anisotropy and increases ductility of the material.

Steps

Load parts in the cold furnace with Ar-atmosphere.
Heat up with heating rate of 10°C/min.
Soaking time in temperature of 1150°C ± 15°C (2102°F) for 6h (± 15min).
Quench immediately after soaking to room temperature water.

HEADQUARTERS

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Status as of 10.05.2024. Subject to technical modifications. EOS is certified according to ISO 9001.

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