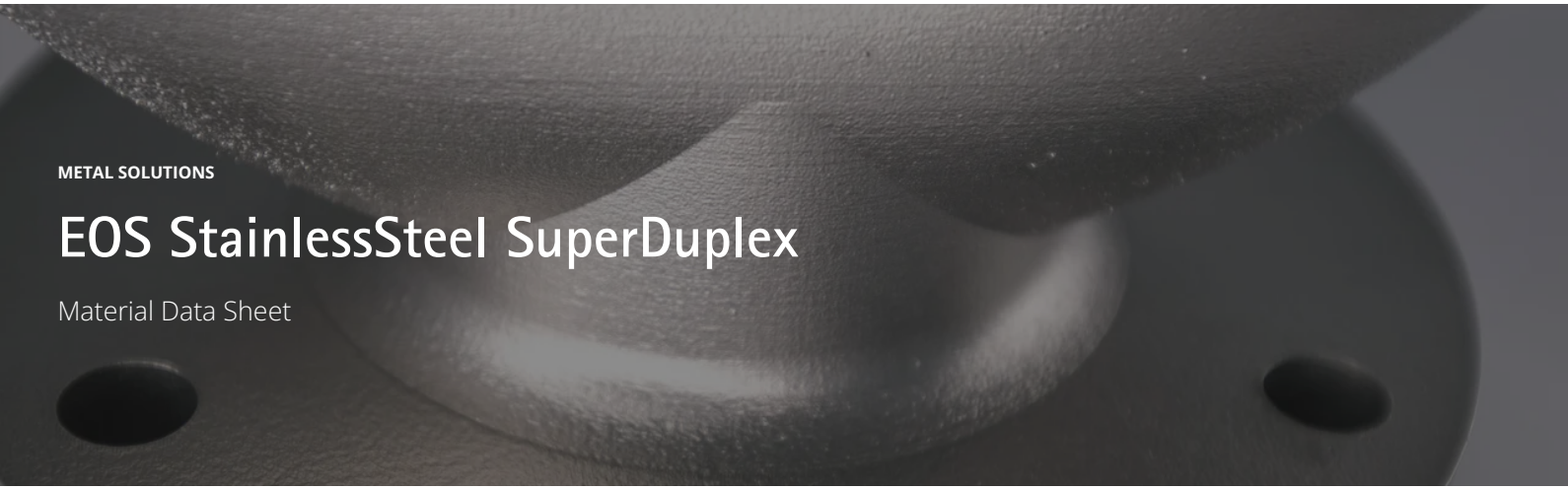


METAL SOLUTIONS

EOS StainlessSteel SuperDuplex

Material Data Sheet

EOS STAINLESSSTEEL SUPERDUPLEX

EOS StainlessSteel SuperDuplex is an austenitic-ferritic duplex stainless steel for extreme conditions. The high chromium, molybdenum and nitrogen alloying give excellent corrosion resistance in many difficult environments. The product is optimized for additive manufacturing while maintaining SuperDuplex properties. The optimization of phase balance enables use of the product in as manufactured condition in many use cases. The general pitting resistance equivalent PREN for EOS SuperDuplex is 41 (PREN = %Cr + 3.3 X %Mo + 16 X %N)

MAIN CHARACTERISTICS

- Excellent resistance to uniform, pitting and crevice corrosion
- High strength together with high corrosion resistance

TYPICAL APPLICATIONS

- Oil and gas industry
- Pulp and paper manufacturing devices
- Mining and off-shore equipment

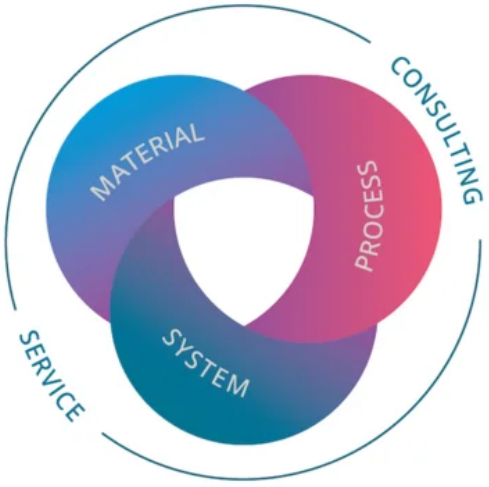
The EOS Quality Triangle

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.

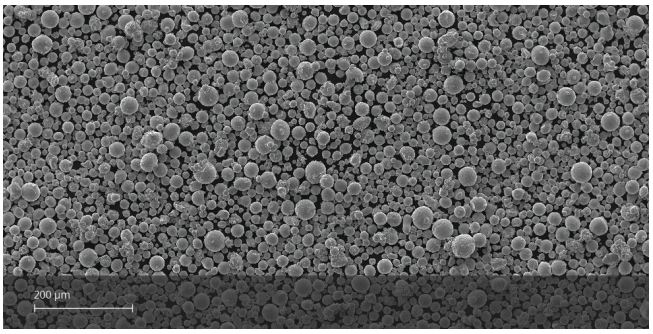
All of the data stated in this material data sheet is produced according to EOS Quality Management System and international standards



POWDER PROPERTIES

Powder Chemical Composition (wt.-%)

Element	Min.	Max.
Fe		Balance
Cr	22	26
Ni	9	13
Mo	3	6
N	0.15	0.35
C	-	0.03



SEM micrograph of EOS StainlessSteel SuperDuplex powder

Powder Particle Size

GENERIC PARTICLE SIZE DISTRIBUTION	**20 - 65 µm**

HEAT TREATMENT

Description

Heat treatment optional.

Steps

Solution annealing:

Hold temperature 1100 °C, hold time 0.5 h when thoroughly heated, water quenching

Typical dimensional change after heat treatment -0.4 % (40 µm) or -0.8 % (80 µm)

HEADQUARTERS

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This powder has not been developed, tested or certified as a medical device according to Directive 93/42/EEC (MDD) or Regulation (EU) 2017/745 (MDR) and is not intended to be used as a medical device, in particular for the purposes specified in Art. 2 No. 1 MDR. Insofar as you intend to use the powder as raw material for the manufacture of pharmaceutical products or medical devices (e.g. as raw material which as a material must meet the requirements of Annex 1, Chapter II MDR), the responsibility and liability for all analyses, tests, evaluations, procedures, risk assessments, conformity assessments, approval and certification procedures as well as for all other official and regulatory measures required for this purpose shall lie solely with you both with regard to the pharmaceutical product and/or medical device manufactured by you and with regard to the properties, suitability, testing, evaluation, risk assessment, other requirements for use of the powder as raw material. In this respect, the limitations of liability pursuant to our General Terms and Conditions and the system sales or material contracts shall apply.

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The achievement of certain part properties as well as the assessment of the suitability of this material for a specific purpose is the sole responsibility of the user. Any information given herein is subject to change without notice.

Status as of 03.09.2024. Subject to technical modifications. EOS is certified according to ISO 9001.