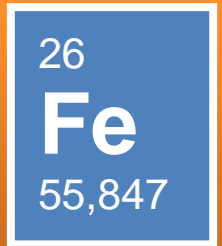


CL 20ES Stainless steel

Stainless steel (powder), chemical composition according to 1.4404, X 2 CrNiMo 17 13 2, 316L

CL 20ES is an austenitic stainless steel for the production of functional parts or components for pre-production moulds.



CHEMICAL COMPOSITION

Component	Indicative value (%)
Fe	Balance
Cr	16,5 - 18,5
Ni	10,0 - 13,0
Mo	2,0 - 2,5
Mn	0 - 2,0
Si	0 - 1,0
P	0 - 0,045
C	0 - 0,030
S	0 - 0,030



RANGE OF APPLICATION

The material is used for manufacturing acid- and corrosion resistant prototypes, unique or series production parts in the following fields: Plant engineering, automotive industry, medical technology, jewellery and components for moulds.

TECHNICAL DATA

Yield Point R_e^1	470 N/mm ²
Tensile Strength R_m^1	570 N/mm ²
Elongation A ^{1,2}	> 15 %
Young's modulus ³	approx. 200 · 10 ³ N/mm ²
Thermal conductivity λ^3	approx. 15 W/mK
Hardness ⁴	20 HRC

¹ Tensile test at 20°C according to DIN EN 50125

² By using a special heat treatment a higher elongation can be achieved.

³ Specification according to the material manufacturer's data sheet.

⁴ Hardness test according to DIN EN ISO 6508

CL 20ES

Stainless steel

MICROSECTION

Testpiece (x20 magnification)



Testpiece (x100 magnification)



HEAT TREATMENT

Optional for parts that are sensitive to warpage:
Heat up in 3 hours to 550°C. Maintain temperature for 6 hours. Subsequently allow the component cooling down in the oven or at ambient atmosphere.

MICROSTRUCTURE

Components made from stainless steel CL 20ES display a homogeneous, dense structure after they are manufactured by means of the metal laser melting process.

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All stated values are approximate values. All details given above are to our current up-to-date knowledge and depending on the process and machine parameters. The data contained in the material data sheet is merely for general information and therefore shall not be binding on the company.