

CL 91RW Stainless hot-work steel

Stainless hot-work steel (powder)

CL 91RW is a hard stainless steel with high chrome content. This material is used for production of mould components for high volume injection moulding. Furthermore the material can also be used for stainless functional components with high loads.

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Fe

55,847

CHEMICAL COMPOSITION

Component	Indicative value (%)
Fe	Balance
C	$\leq 0,03$
Si	0,3
Mn	0,3
Cr	12
Ni	9,2
Mo	1,4
Al	1,6

Source: Werkzeugbau Siegfried Hofmann GmbH

RANGE OF APPLICATION

Tool inserts with conformal cooling for the production of medical or surgical instruments as well as for packaging used in food and pharmaceutical industries.

TECHNICAL DATA AFTER RECOMMENDED HEAT TREATMENT

Yield Point R_e ¹	approx. 1.600 N/mm ²
Tensile Strength R_m ¹	approx. 1.700 N/mm ²
Elongation A ^{1,2}	> 2 %
Young's modulus ³	approx. 200.000 N/mm ²
Thermal conductivity λ ³	approx. 18 W/mK
Hardness ⁴	48 - 50 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

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MICROSECTION

Test piece (x 20 magnification)



Test piece (x 100 magnification)



HEAT TREATMENT

Heat up with 100°C/h to 530°C. Maintain temperature for 4 hours. Allow the components to cool down in the oven with 100°C/h.

MICROSTRUCTURE

Components made from stainless hot-work steel CL 91RW display a homogeneous, dense structure after they are manufactured by means of the metal laser melting process LaserCUSING®.

Concept Laser GmbH
 An der Zeil 8
 D 96215 Lichtenfels

Sales Department
 info@concept-laser.de
 T: +49 (0) 95 71. 1679 200
 F: +49 (0) 95 71. 1679 299

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HOFMANN
 innovation group