

SUPREME STEEL INDUSTRIES



Industeel CLC 1.2316S Prehardened Mold Steel (300HB) with Improved Machinability

Categories: [Metal](#); [Ferrous Metal](#); [Tool Steel](#); [Mold Steel](#)

Material Notes: Description: CLC 1.2316 S grade is a 18%Cr 1%Mo mold steel with improved corrosion resistance properties, thanks to the chromium and molybdenum additions. Furthermore specific sulfur additions are considered to increase the machinability properties. The grade in the quenched tempered condition has a fully bainite martensite microstructure and can be delivered in the prehardened condition (300HB or 340HB). The grade is not designed for highly finish polished surfaces or etched surfaces. The grade is commonly used for mold steel applications including cores, inserts, molds... subjected to wet working conditions and / or storage conditions. The grade is also used for the manufacturing of corrosive materials like PVC.

Information provided by manufacturer.

Key Words: AFNOR Z40CD18 (S), DIN X38CrMo17 (S) - X33CrS18, WERKSTOFF Nbr 1.2316 with S addition - (s 1.2085)

Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

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Physical Properties	Metric	English	Comments
Density	7.76 g/cc	0.280 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	340	340	Typical, in Longitudinal
Tensile Strength, Ultimate	1180 MPa	169000 psi	Typical, Longitudinal Direction
Tensile Strength, Yield	950 MPa @Strain 0.200 %	138000 psi @Strain 0.200 %	Typical, Longitudinal Direction
Elongation at Break	10 %	10 %	Typical, EL 5.65 Longitudinal Direction
Modulus of Elasticity	207 GPa	30000 ksi	Typical, in Longitudinal Direction
Charpy Impact	12.0 J	8.85 ft-lb	Typical (Longitudinal)

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 µm/m-°C @Temperature 20.0 - 100 °C	6.11 µin/in-°F @Temperature 68.0 - 212 °F	
	11.1 µm/m-°C @Temperature 20.0 - 200 °C	6.17 µin/in-°F @Temperature 68.0 - 392 °F	
	11.7 µm/m-°C @Temperature 20.0 - 400 °C	6.50 µin/in-°F @Temperature 68.0 - 752 °F	
Specific Heat Capacity	0.460 J/g-°C @Temperature 20.0 °C	0.110 BTU/lb-°F @Temperature 68.0 °F	
Thermal Conductivity	24.3 W/m-K @Temperature 20.0 °C	168 BTU-in/hr-ft ² -°F @Temperature 68.0 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.40 %	0.40 %	
Chromium, Cr	18 %	18 %	
Iron, Fe	81.32 - 81.42 %	81.32 - 81.42 %	As remainder
Manganese, Mn	0.80 %	0.80 %	
Molybdenum, Mo	1.03 %	1.03 %	
Phosphorous, P	<= 0.030 %	<= 0.030 %	
Silicon, Si	0.35 %	0.35 %	
Sulfur, S	<= 0.070 %	<= 0.070 %	

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