

# 1.2316

## Plastic Mould Steel

### TECHNICAL SHEET

#### 1 Comparison Standards

W.Nr	DIN	JIS equivalent	AISI/SAE	AFNOR	BS	UNI
1.2316	~X36CrMo17	SUS420J	~442	~Z35CD17	-	-

#### 2 Chemical Composition

C	Si	Mn	P (max)	S (max)	Cr	Mo	Ni	Supply Condition	Supply Hardness (HB)
0.33-0.45	≤ 1.0	≤ 1.50	0.03	0.03	15.50-17.50	0.85-1.30	≤ 1.0	Q & T	280 - 320

#### 3 Main Characteristics and Applications

A pre-hardened martensitic stainless steel alloyed with chromium and molybdenum, offering excellent corrosion resistance superior to comparable chromium grades like 1.2083. It also features good polishing and photoengraving properties.

##### Applications:

- Preform Dies
- Blow and Injection Moulds
- Compression Moulds
- Die Casting
- Medical Equipments
- Automotive Parts

#### 4 Production Route

EAF - LF - VD - Forging - Heat treatment QT

#### 5 Physical Properties ( Reference Values )

	20°C	100°C	250°C	500°C
Thermal expansion coefficient (10-6/K)	10.4	10.7	11	11.9
Thermal Conductivity (W/mk)	23.5	23.9	24.2	23.2
Young modulus (Kn/mm2)	218	209	202	180

#### 6 Heat Treatment

TREATMENT	TEMPERATURE	HOLDING TIME (HT)	COOLING	COMMENTS
Annealing	Heat to 770 - 820 °C	Min. H.T. for 2 minute /mm	Furnace up to 600°C than in air	-
Stress relieving	Heat to 550 - 600 °C	Min. H.T. for 2 minute /mm	Air or Furnace	It is recommended to eliminate the residual stresses induced by mechanical working after machining
Hardening	Preheating to 600 - 700 °C Austenitizing to 1000 - 1050 °C	Min. H.T. for 1 minute /mm	Polymer or gas air	Quenched hardness 50 HRC
Tempering	-	-	Air	To be performed after hardening, conduct a second tempering at a temperature no more than 30 °C below the initial tempering temperature

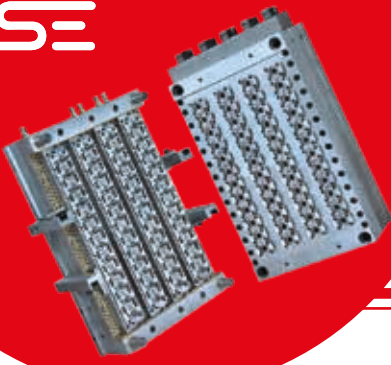


SANDEEP EDGETECH LIMITED

NCR | New Delhi | Mumbai

+91-9654956890, +91-11-43360000 | sales@sandeepedgetech.com

www.sandeepedgetech.com

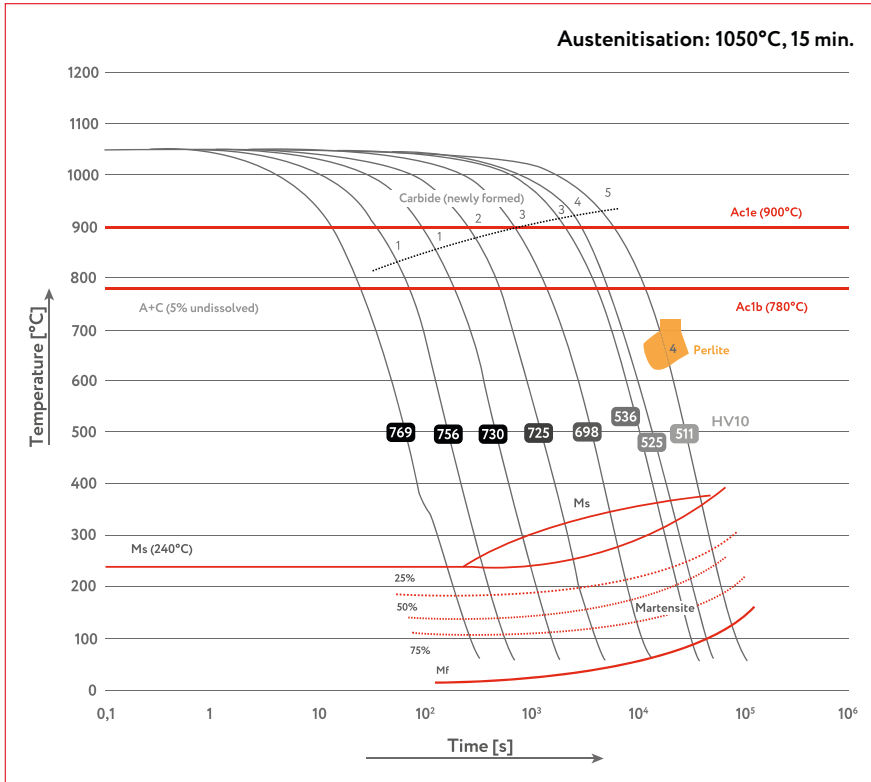


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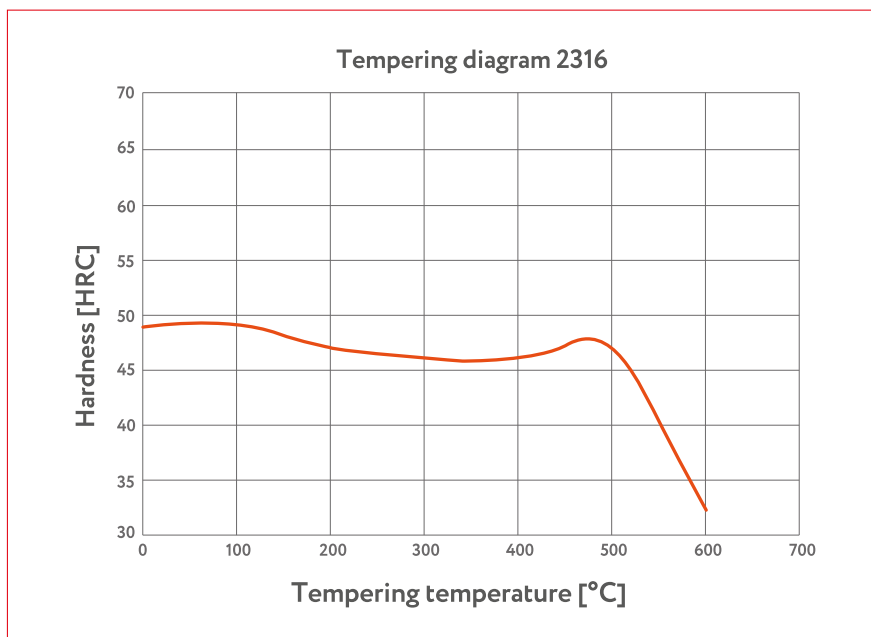
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#### 7 C.C.T. Curve



#### 8 Tempering Curve



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