

MATERIAL NO: 1.2367
CODE: X38CrMoV5-3
PRODUCT INFO: 2367



CHEMICAL COMPOSITION

(Typical analysis in %)

C	Cr	Mo	V
0.38	5.00	3.00	0.50

STEEL PROPERTIES

Hot work tool steel with good wear resistance at high temperatures, high hardness and tempering strength depending on the application also available in EFS and ESR

APPLICATIONS

Large die casting tools, tools needing high strength at elevated temperatures, forging dies. mandrels, extrusion dies.

CONDITION OF DELIVERY

Soft annealed to max. 229 HB

PHYSICAL PROPERTIES

Thermal Expansion Coefficient	$\left[\frac{10^6 \cdot \text{m}}{\text{m} \cdot \text{K}} \right]$	$\frac{20-100^\circ\text{C}}{11.9}$	$\frac{20-300^\circ\text{C}}{12.6}$	$\frac{20-500^\circ\text{C}}{13.1}$	$\frac{20-700^\circ\text{C}}{13.5}$
Thermal Conductivity	$\left[\frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	$\frac{20^\circ\text{C}}{30.8}$	$\frac{350^\circ\text{C}}{33.5}$	$\frac{700^\circ\text{C}}{35.1}$	

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HEAT TREATMENT

Soft Annealing

Temperature	Cooling	Hardness
730 - 780°C	furnace	max 229 HB

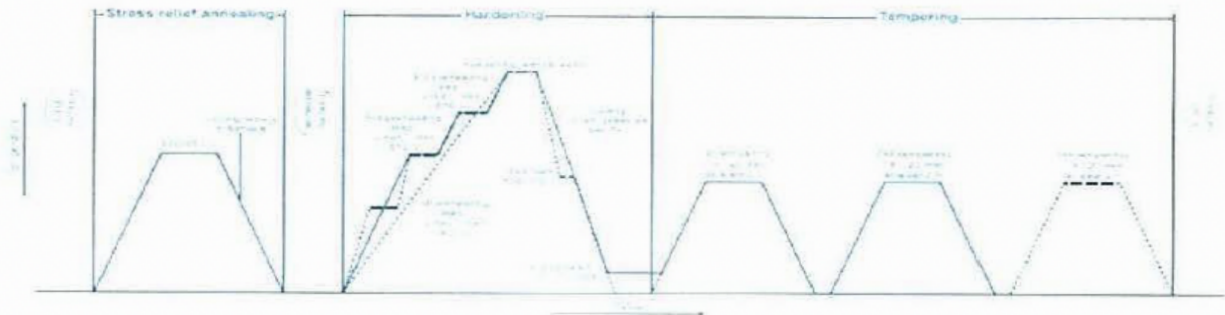
Stress Relief Annealing

Temperature	Cooling	
600 - 650°C	furnace	

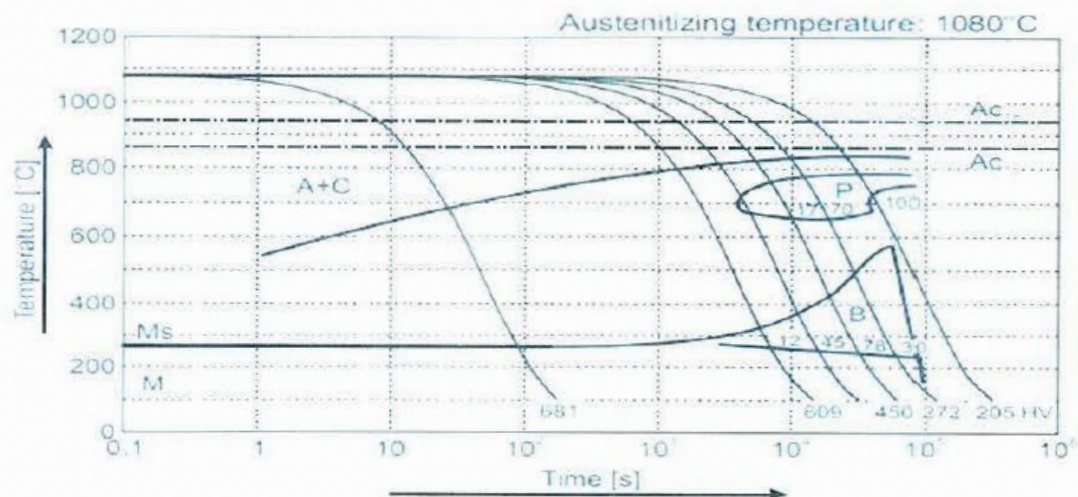
Hardening

Temperature	Cooling	Hardness
1030 - 1080°C	oil, pressure gas (N ₂), air or hot bath 500 - 550°C	see tempering diagram

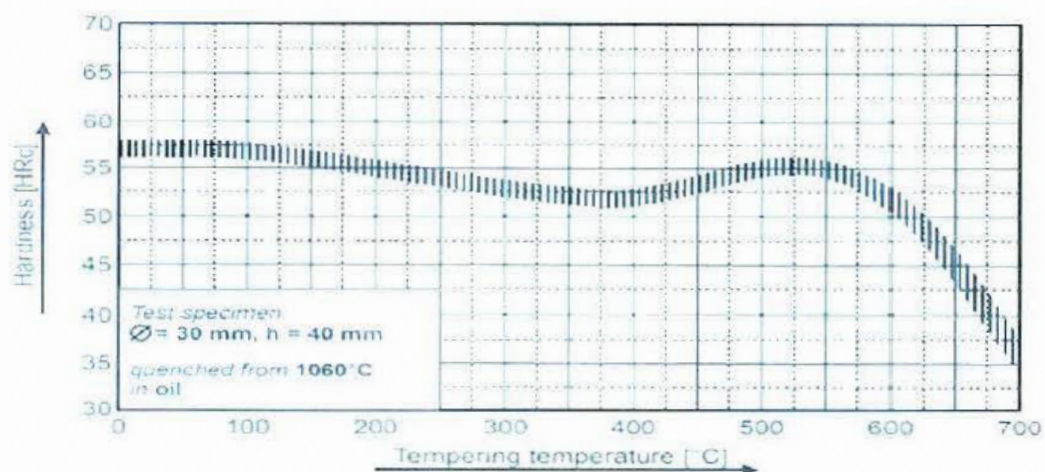
(1.2367) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.