

SUPREME STEEL INDUSTRIES



AISI Type D3 Tool Steel, oil-quenched from 980°C (1800°F), tempered at 200°C

Categories: [Metal](#); [Ferrous Metal](#); [Carbon Steel](#); [High Carbon Steel](#); [Tool Steel](#); [Cold Work Steel](#)

Material Notes: High-carbon, high-chromium steel. Virtually no deformation during hardening. High wear resistance which increases with C and V content.

Key Words: high carbon, high chromium, UNS T30403, ASTM A681, FED QQ-T-570, SAE J437 (D2), SAE J438 (D2), DIN 1.2080 (G)

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	7.86 g/cc	0.284 lb/in ³	

Mechanical Properties	Metric	English	Comments
Izod Impact Unnotched	28.0 J	20.7 ft-lb	

Thermal Properties	Metric	English	Comments
CTE, linear	10.7 $\mu\text{m}/\text{m}^{\circ}\text{C}$ @Temperature 20.0 - 100 $^{\circ}\text{C}$	5.94 $\mu\text{in}/\text{in}^{\circ}\text{F}$ @Temperature 68.0 - 212 $^{\circ}\text{F}$	
	12.1 $\mu\text{m}/\text{m}^{\circ}\text{C}$ @Temperature 0.000 - 300 $^{\circ}\text{C}$	6.72 $\mu\text{in}/\text{in}^{\circ}\text{F}$ @Temperature 32.0 - 572 $^{\circ}\text{F}$	
	12.8 $\mu\text{m}/\text{m}^{\circ}\text{C}$ @Temperature 0.000 - 500 $^{\circ}\text{C}$	7.11 $\mu\text{in}/\text{in}^{\circ}\text{F}$ @Temperature 32.0 - 932 $^{\circ}\text{F}$	

Processing Properties	Metric	English	Comments
Processing Temperature	205 - 540 $^{\circ}\text{C}$	401 - 1000 $^{\circ}\text{F}$	Tempering Temperature
	925 - 980 $^{\circ}\text{C}$	1700 - 1800 $^{\circ}\text{F}$	Hardening Temperature
Annealing Temperature	870 - 900 $^{\circ}\text{C}$	1600 - 1650 $^{\circ}\text{F}$	

Component Elements Properties	Metric	English	Comments
Carbon, C	2.0 - 2.35 %	2.0 - 2.35 %	
Chromium, Cr	11 - 13 %	11 - 13 %	
Manganese, Mn	≤ 0.60 %	≤ 0.60 %	
Phosphorous, P	≤ 0.030 %	≤ 0.030 %	
Silicon, Si	≤ 0.60 %	≤ 0.60 %	
Sulfur, S	≤ 0.030 %	≤ 0.030 %	
Tungsten, W	≤ 1.0 %	≤ 1.0 %	
Vanadium, V	≤ 1.1 %	≤ 1.1 %	

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