

SUPREME STEEL INDUSTRIES



AISI Type H11 Hot Work Tool Steel, air or oil quenched from 995-1025°C

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

Material Notes: High hardenability, excellent toughness

Key Words: UNS T20811

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	7.80 g/cc	0.282 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Knoop	842	842	Converted from Rockwell C hardness.
Hardness, Rockwell C	58	58	
Hardness, Vickers	821	821	
Tensile Strength, Ultimate	1990 MPa	289000 psi	
Tensile Strength, Yield	1850 MPa	269000 psi	
Elongation at Break	9.0 %	9.0 %	in 50 mm
Modulus of Elasticity	210 GPa	30500 ksi	
Bulk Modulus	160 GPa	23200 ksi	Typical for steel.
Poissons Ratio	0.30	0.30	Calculated
Machinability	45 - 55 %	45 - 55 %	Based on 1% carbon steel, as 100% machinability
Shear Modulus	81.0 GPa	11700 ksi	Estimated from elastic modulus
Charpy Impact	18.0 J	13.3 ft-lb	V-notch

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 µm/m-°C	6.11 µin/in-°F	
	@Temperature 25.0 - 95.0 °C	@Temperature 77.0 - 203 °F	
	12.4 µm/m-°C	6.89 µin/in-°F	
	@Temperature 25.0 - 540 °C	@Temperature 77.0 - 1000 °F	
Specific Heat Capacity	0.480 J/g-°C	0.110 BTU/lb-°F	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
Thermal Conductivity	24.6 W/m-K	171 BTU-in/hr-ft ² -°F	
	@Temperature 215 °C	@Temperature 419 °F	
	42.0 W/m-K	291 BTU-in/hr-ft ² -°F	
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Processing Properties	Metric	English	Comments
Processing Temperature	540 - 850 °C	1000 - 1200 °F	Tempering Temperature
	995 - 1025 °C	1820 - 1877 °F	Hardening Temperature
Annealing Temperature	845 - 900 °C	1550 - 1650 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.33 - 0.43 %	0.33 - 0.43 %	
Chromium, Cr	5.2 %	5.2 %	
Iron, Fe	93 %	93 %	
Molybdenum, Mo	1.35 %	1.35 %	
Vanadium, V	0.45 %	0.45 %	

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