

# SUPREME STEEL INDUSTRIES



## AISI Type S1 Tool Steel, quenched 955°C (1750°F), tempered 150°C (300°F)

Categories: [Metal](#); [Ferrous Metal](#); [Alloy Steel](#); [Medium Alloy Steel](#); [Tool Steel](#); [Shock-Resisting Steel](#)

**Material Notes:** Chromium-tungsten tool steel that provides excellent service in both hot and cold work shock applications. Has good wear resistance and high hardness value.

**Key Words:** UNS T41901

**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	7.83 g/cc	0.283 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Knoop	682	682	Converted from Rockwell C Hardness.
Hardness, Rockwell C	58	58	
Hardness, Vickers	661	661	Converted from Rockwell C Hardness.
Tensile Strength, Ultimate	2310 MPa	335000 psi	
Tensile Strength, Yield	1750 MPa	254000 psi	
Elongation at Break	9.0 %	9.0 %	
Bulk Modulus	160 GPa	23200 ksi	Typical for steel
Shear Modulus	80.0 GPa	11600 ksi	Typical for steel

Thermal Properties	Metric	English	Comments
CTE, linear	12.4 µm/m-°C	6.89 µin/in-°F	

Processing Properties	Metric	English	Comments
Processing Temperature	205 - 650 °C	401 - 1200 °F	Tempering Temperature
	900 - 955 °C	1650 - 1750 °F	Hardening Temperature
Annealing Temperature	790 - 815 °C	1450 - 1500 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.40 - 0.55 %	0.40 - 0.55 %	
Chromium, Cr	1.4 %	1.4 %	
Iron, Fe	94 %	94 %	
Manganese, Mn	0.25 %	0.25 %	
Molybdenum, Mo	<= 0.50 %	<= 0.50 %	
Phosphorous, P	<= 0.030 %	<= 0.030 %	
Silicon, Si	0.68 %	0.68 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	
Tungsten, W	2.25 %	2.25 %	
Vanadium, V	0.23 %	0.23 %	

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