

## Crucible Steel 430 Chromium Steel

Category : Metal , Ferrous Metal , Stainless Steel , T 400 Series Stainless Steel

**Material Notes:**

Crucible 430 is essentially a non-hardenable chromium steel which is adaptable for general purpose corrosion and heat resisting applications. It is prone to slight hardening by heat treatment. This grade is magnetic at all times. Information provided by Crucible Specialty Metals.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Crucible-Steel-430-Chromium-Steel.php](http://www.lookpolymers.com/polymer_Crucible-Steel-430-Chromium-Steel.php)

Physical Properties	Metric	English	Comments
Specific Gravity	7.72 g/cc	7.72 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	160	160	
Tensile Strength, Ultimate	517 MPa	75000 psi	
	27.6 MPa	4000 psi	
	@Temperature 927 °C	@Temperature 1700 °F	
	269 MPa	39000 psi	
	@Temperature 538 °C	@Temperature 1000 °F	
Tensile Strength, Yield	310 MPa	45000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	30 %	30 %	in 2"
Reduction of Area	60 %	60 %	
Creep Strength	8.963 MPa	1300 psi	
	@Temperature 704 °C	@Temperature 1300 °F	
	58.6 MPa	8500 psi	
	@Temperature 538 °C	@Temperature 1000 °F	
Rupture Strength	23.44 MPa	3400 psi	
	@Temperature 649 °C, Time 3.60e+6 sec	@Temperature 1200 °F, Time 1000 hour	
	34.47 MPa	5000 psi	
	@Temperature 649 °C, Time 3.60e+6 sec	@Temperature 1200 °F, Time 1000 hour	

Mechanical Properties	Metric	English	Comments
	165.5 MPa @Temperature 482 °C, Time 3.60e+7 sec	24000 psi @Temperature 900 °F, Time 10000 hour	
	206.8 MPa @Temperature 482 °C, Time 3.60e+6 sec	30000 psi @Temperature 900 °F, Time 1000 hour	
Modulus of Elasticity	200 GPa	29000 ksi	
Izod Impact Unnotched	54.2 J	40.0 ft-lb	

Thermal Properties	Metric	English	Comments
CTE, linear	10.4 µm/m-°C @Temperature 0.000 - 100 °C	5.80 µin/in-°F @Temperature 32.0 - 212 °F	
	11.0 µm/m-°C @Temperature 0.000 - 316 °C	6.10 µin/in-°F @Temperature 32.0 - 600 °F	
Specific Heat Capacity	11.9 µm/m-°C @Temperature 0.000 - 649 °C	6.60 µin/in-°F @Temperature 32.0 - 1200 °F	
	0.460 J/g-°C @Temperature 0.000 - 100 °C	0.110 BTU/lb-°F @Temperature 32.0 - 212 °F	
Thermal Conductivity	22.65 W/m-K @Temperature 93.3 °C	157.2 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 200 °F	
	26.28 W/m-K @Temperature 538 °C	182.4 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 1000 °F	
Melting Point	1430 - 1510 °C	2600 - 2750 °F	
Solidus	1430 °C	2600 °F	
Liquidus	1510 °C	2750 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.12 %	<= 0.12 %	
Chromium, Cr	16 - 18 %	16 - 18 %	
Iron, Fe	>= 79.81 %	>= 79.81 %	As Remainder

Manganese Mn Component Elements Properties	$\leq 1.0\%$ Metric	$\leq 1.0\%$ English	Comments
Phosphorous, P	$\leq 0.040\%$	$\leq 0.040\%$	
Silicon, Si	$\leq 1.0\%$	$\leq 1.0\%$	
Sulfur, S	$\leq 0.030\%$	$\leq 0.030\%$	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00005994 ohm-cm @Temperature 23.0 °C	0.00005994 ohm-cm @Temperature 73.4 °F	

## Contact Songhan Plastic Technology Co.,Ltd.

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