

## Crucible Steel 303 SE Chromium-Nickel Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel , T 300 Series Stainless Steel

### Material Notes:

Crucible 303 SE is a non-hardenable austenitic chromium-nickel steel to which selenium has been added to improve machinability and non-galling characteristics. This grade is non-magnetic in the annealed condition but slightly magnetic when cold worked. Typical applications are screw machine products that will be subjected to cold forming. Information provided by Crucible Specialty Metals.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Crucible-Steel-303-SE-Chromium-Nickel-Steel.php](http://www.lookpolymers.com/polymer_Crucible-Steel-303-SE-Chromium-Nickel-Steel.php)

Physical Properties	Metric	English	Comments
Specific Gravity	7.92 g/cc	7.92 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	170	170	
Tensile Strength, Ultimate	621 MPa	90000 psi	
Tensile Strength, Yield	241 MPa @Strain 0.200 %	35000 psi @Strain 0.200 %	
Elongation at Break	50 %	50 %	in 2"
Reduction of Area	55 %	55 %	
Modulus of Elasticity	193 GPa	28000 ksi	Tension
Izod Impact Unnotched	108 J	80.0 ft-lb	

Thermal Properties	Metric	English	Comments
CTE, linear	17.3 $\mu\text{m}/\text{m}\cdot\text{C}$ @Temperature 0.000 - 100 °C	9.60 $\mu\text{in}/\text{in}\cdot\text{F}$ @Temperature 32.0 - 212 °F	
	17.8 $\mu\text{m}/\text{m}\cdot\text{C}$ @Temperature 0.000 - 316 °C	9.90 $\mu\text{in}/\text{in}\cdot\text{F}$ @Temperature 32.0 - 600 °F	
	18.7 $\mu\text{m}/\text{m}\cdot\text{C}$ @Temperature 0.000 - 649 °C	10.4 $\mu\text{in}/\text{in}\cdot\text{F}$ @Temperature 32.0 - 1200 °F	
Specific Heat Capacity	0.502 J/g·°C @Temperature 0.000 - 100 °C	0.120 BTU/lb·°F @Temperature 32.0 - 212 °F	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	@Temperature 93.3 °C	@Temperature 200 °F	
	21.6 W/m-K	150 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 538 °C	@Temperature 1000 °F	
Melting Point	1400 - 1420 °C	2550 - 2590 °F	
Solidus	1400 °C	2550 °F	
Liquidus	1420 °C	2590 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.12 %	<= 0.12 %	
Chromium, Cr	17 - 19 %	17 - 19 %	
Iron, Fe	>= 66.76 %	>= 66.76 %	As Remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	<= 0.60 %	<= 0.60 %	
Nickel, Ni	8.0 - 10 %	8.0 - 10 %	
Phosphorous, P	0.12 - 0.17 %	0.12 - 0.17 %	
Selenium, Se	0.15 - 0.35 %	0.15 - 0.35 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000721 ohm-cm	0.0000721 ohm-cm	
	@Temperature 23.0 °C	@Temperature 73.4 °F	

## Contact Songhan Plastic Technology Co.,Ltd.

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