

## HP Alloys Alloy X, 5% Cold Worked

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

### Material Notes:

5% Cold Worked applies to tensile and/or hardness; other properties are typical of this alloy. Data provided by High Performance Alloys, Inc., Allvac, and Haynes International.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_HP-Alloys-Alloy-X-5-Cold-Worked.php](http://www.lookpolymers.com/polymer_HP-Alloys-Alloy-X-5-Cold-Worked.php)

Physical Properties	Metric	English	Comments
Density	8.22 g/cc	0.297 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	848 MPa	123000 psi	
Tensile Strength, Yield	565 MPa	81900 psi	
Elongation at Break	32 %	32 %	
Modulus of Elasticity	205 GPa	29700 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	15.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.33 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 500 $\text{°C}$	@Temperature 68.0 - 932 $\text{°F}$	
	16.6 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.22 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 1000 $\text{°C}$	@Temperature 68.0 - 1830 $\text{°F}$	
Thermal Conductivity	16.9 W/m-K	117 BTU-in/hr-ft <sup>2</sup> - $\text{°F}$	
	@Temperature 400 $\text{°C}$	@Temperature 752 $\text{°F}$	
Melting Point	1260 - 1355 $\text{°C}$	2300 - 2471 $\text{°F}$	
Solidus	1260 $\text{°C}$	2300 $\text{°F}$	
Liquidus	1355 $\text{°C}$	2471 $\text{°F}$	

Component Elements Properties	Metric	English	Comments
Boron, B	$\leq 0.0080 \%$	$\leq 0.0080 \%$	
Carbon, C	0.10 %	0.10 %	
Chromium, Cr	22 %	22 %	

Component Elements Properties	Metric	English	Comments
Iron, Fe	18 %	18 %	
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Molybdenum, Mo	9.0 %	9.0 %	
Nickel, Ni	47 %	47 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Tungsten, W	0.60 %	0.60 %	

## Contact Songhan Plastic Technology Co.,Ltd.

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