



ASM Aerospace Specification Metals Inc.



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Haynes® Hastelloy® X alloy, sheet, tested at 1095°C (2000°F)

Subcategory: Metal; Nickel Base; Superalloy

Key Words: AMS 5798, AMS 5799, AMS 5888, UNS N06002, AMS 5536, AMS 5588, AMS 5754

Component	Wt. %	Component	Wt. %	Component	Wt. %
B	Max 0.008	Fe	18	Ni	47
C	0.1	Mn	Max 1	Si	Max 1
Co	1.5	Mo	9	W	0.6
Cr	22				

Material Notes:

Solid-solution-strengthened with very good high-temperature strength and very good resistance to oxidizing environments up to about 1095°C, and good carburization resistance. Applications include materials for fabricated or forged parts in gas turbine engines, and chemical and petrochemical plants, power plant and industrial heating applications.

Data provided by the manufacturer, Haynes International, Inc.

Physical Properties	Metric	English	Comments
Density	<u>8.22 g/cc</u>	0.297 lb/in ³	at RT.

Mechanical Properties

Tensile Strength, Ultimate	<u>97 MPa</u>	14100 psi	
Tensile Strength, Yield	<u>44 MPa</u>	6380 psi	at 0.2%
Elongation at Break	<u>59.8 %</u>	59.8 %	in 51 mm
Modulus of Elasticity	<u>205 GPa</u>	29700 ksi	20°C
Modulus of Elasticity at Elevated Temperature	<u>139 GPa</u>	20200 ksi	1000°C (1830°F)
Modulus of Elasticity at Elevated Temperature	<u>151 GPa</u>	21900 ksi	900°C (1650°F)
Modulus of Elasticity at Elevated Temperature	<u>158 GPa</u>	22900 ksi	800°C (1470°F)
Modulus of Elasticity at Elevated Temperature	<u>166 GPa</u>	24100 ksi	700°C (1290°F)
Modulus of Elasticity at Elevated Temperature	<u>174 GPa</u>	25200 ksi	600°C (1110°F)
Modulus of Elasticity at Elevated Temperature	<u>186 GPa</u>	27000 ksi	400°C (750°F)

Modulus of Elasticity at Elevated Temperature	197 GPa	28600 ksi	200°C (390°F)
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Thermal Properties

CTE, linear 500°C	15 μm/m-°C	8.33 μin/in-°F	20-500°C (68-930°F)
CTE, linear 500°C	15.3 μm/m-°C	8.5 μin/in-°F	20-600°C (68-1110°F)
CTE, linear 500°C	15.6 μm/m-°C	8.67 μin/in-°F	20-700°C (68-1290°F)
CTE, linear 500°C	16 μm/m-°C	8.89 μin/in-°F	20-800°C (68-1470°F)
CTE, linear 500°C	16.3 μm/m-°C	9.06 μin/in-°F	20-900°C (68-1650°F)
CTE, linear 1000°C	16.6 μm/m-°C	9.22 μin/in-°F	20-1000°C (68-1830°F)
Thermal Conductivity at Elevated Temperature	16.9 W/m-K	117 BTU-in/hr-ft ² -°F	400°C (390°F)
Thermal Conductivity at Elevated Temperature	20.9 W/m-K	145 BTU-in/hr-ft ² -°F	600°C (1110°F)
Thermal Conductivity at Elevated Temperature	22.8 W/m-K	158 BTU-in/hr-ft ² -°F	700°C (1290°F)
Thermal Conductivity at Elevated Temperature	24.8 W/m-K	172 BTU-in/hr-ft ² -°F	800°C (1470°F)
Thermal Conductivity at Elevated Temperature	26.7 W/m-K	185 BTU-in/hr-ft ² -°F	900°C (1650°F)
Thermal Conductivity at Elevated Temperature	28.7 W/m-K	199 BTU-in/hr-ft ² -°F	1000°C (1830°F)
Melting Point	1260 - 1355 °C	2300 - 2470 °F	
Solidus	1260 °C	2300 °F	
Liquidus	1355 °C	2470 °F	
Maximum Service Temperature, Air	1095 °C	2000 °F	

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error.