AISI Type S13800 Stainless Steel (PH 13-8 Mo) longitudinal properties, condition H1050

Subcategory: Ferrous Metal; Metal; Precipitation Hardening Stainless; Stainless Steel; T S10000 Series Stainless Steel

Key Words: UNS S13800, 13-8Mo, 13-8PH, 13-8 PH, 13/8 Mo, 13/8Mo, 13/8PH, 13/8 PH, AMS 5629, AMS 5840, ASME SA705 (XM-13), ASTM A564 (XM-13), ASTM A693 (XM-13), ASTM A705 (XM-13); PH 13-8 Mo; Precipitation Hardening

Component	Wt. %	Component	Wt. %	Component	Wt. %
Al	0.9 - 1.35	Mn	Max 0.1	P	Max 0.01
C	Max 0.05	Mo	2 - 2.5	S	Max 0.008
Cr	12.25 - 13.25	N	Max 0.01	Si	Max 0.1
Fe	76	Ni	7.5 - 8.5		

Material Notes:

Center or intermediate test location.

Martensitic, precipitation hardening (maraging) stainless steel.

Physical Properties	Metric	English	Comments
Density	7.8 g/cc	0.282 lb/in³	
Mechanical Properties			
Tensile Strength, Ultimate	1310 MPa	190000 psi	
Tensile Strength, Yield	1240 MPa	180000 psi	at 0.2% offset
Elongation at Break	15 %	15 %	in 50 mm
Modulus of Elasticity	212 GPa	30700 ksi	
Charpy Impact	81 J	59.7 ft-lb	
Machinability	35 - 40 %	35 - 40 %	35-40% average, Based on 100% machinability for AISI 1212 steel.

Electrical Properties

Electrical Resistivity	0.0001 ohm-cm	0.0001 ohm-cm	at 25°C, 0.0001 at 100°C, 0.0001 at 200°C, 0.00011 at 315°C, 0.00011 at 425°C, 0.00011 at 540°C, 0.00011 at 595°C, in Condtion A.

Thermal Properties

CTE, linear 20°C	10.6 µm/m-°C	5.89 µin/in-°F	at 21-95°C, 10.8 at 21-205°C
CTE, linear 250°C	11.2 µm/m-°C	6.22 µin/in-°F	at 21-315°C, 11.3 at 21-425°C
CTE, linear 500°C	11.9 µm/m-°C	6.61 µin/in-°F	at 21-540°C
Specific Heat Capacity	0.46 J/g-°C	0.11 BTU/lb-°F	from 0-100°C (32-212°F)
Thermal Conductivity	14 W/m-K	97.2 BTU-in/hr-ft²-°F	at 100°C, 15.7 at 200°C, 17.8 at 315°C, 20.4 at 425°C, 22.3 at 540°C, 22.5 at 595°C; in Condition A.
Melting Point	1405 - 1440 °C	2560 - 2620 °F	
Solidus	1405 °C	2560 °F	
Liquidus	1440 °C	2620 °F	

References for this datasheet.

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.