Combined Metals Material Datasheet

Alloy 434 Stainless Steel

UNS: S43400
EN DIN: 1.4113

Description: Type 434 is a modification of Type 430, and one of the most widely used "non-hardenable" ferritic stainless steels. The addition of molybdenum increases this alloy's corrosion resistance and its attack from many de-icing chemicals. It also provides good heat and oxidation resistance up to 1500 °F as well as good mechanical properties. Heating above the critical austenite forming temperature leads to a room temperature microstructure of ferrite and fine martensite. As-annealed the alloy is ferritic. Maximum service temperature is 1500 °F.
Applications include: Automotive trim, appliances, combustion chambers, architectural
Industries supplied include: Automotive, Oil & Gas, Food Processing

Nominal Composition

	C	Mn	P	S	Si	Cr	Mo	Fe
min	-	-	-	-	-	16.0	0.75	BAL
max	.12	1.0	0.04	0.030	1.00	18.0	1.25	-

Physical Properties

	At 70°F	At 20°C
Density	0.28 lb/in^3	7.74 g/cm^3
Modulus of Elasticity (E)	28.0 x 10^3 ksi	193 GPa
Coefficient of Expansion	5.8 µin/in-°F (32-212°F)	10.4 µm/m-°C (0-100°C)
Electrical Resistivity	23.68 µohm-in	60 µohm-cm
Thermal Conductivity	15.1 Btu-in/ft^2-hr- °F (212°F)	26.1 W/m-K (100°C)

Applicable Specifications

Strip & Sheet	ASTM A240

Typical Mechanical Properties Typical Room Temperature Mechanical Properties

Condition	Tensile Strength (UTS)	0.2% Offset Yield	Elongation in 2" (50.8 mm)	Hardness Rockwell
Annealed	80 ksi (655 MPa)	50 ksi (290 MPa)	28%	75 HRBW

Typical mechanical properties are based on ASTM A240

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