

CRA 2535 (UNS N08535)

CRA 2535 is typically supplied as a cold worked solid solution nickel-based alloy, capable of meeting the severe challenges of high temperature, high pressure, sour wells. The alloy is classified in MR0175/ISO15156 as a type 4c alloy, with no restrictions to partial pressure of H₂S below 270F and resistant to 100 psi H₂S at 425°F.

NOMINAL COMPOSITION

Chromium 25%

Nickel 32%

Molybdenum 3%

Iron Balance

SPECIFIED MECHANICAL PROPERTIES - API 5CRA / ISO 13680 Group 3 Category 25-32-3

Grade	Yield Strength min. (ksi)	Tensile Strength min. (ksi)	Elongation min. (%)	NACE MR0175/ISO 15156 Environmental Limits
110	110	115	11	Table A.14 Type 4c
125	125	130	10	Table A.14 Type 4c
140	140	145	9	N/A

TYPICAL MECHANICAL PROPERTIES

Grade	Yield Strength (ksi)	Tensile Strength (ksi)	Charpy V-Notch Toughness (ft-lbs at 14F)
110	120	128	125
125	132	139	105

TYPICAL PHYSICAL PROPERTIES

		70°F	200°F	400°F
Density	lbs/in ³	0.29	0.29	0.29
Thermal Expansion	X10 ⁻⁶ /deg F	8.3	8.3	8.4
Elastic Modulus	psi x 10 ⁶	28.3	27.6	26.3
Poisson Ratio		0.29	0.29	0.29
Thermal Conductivity	Btu/ft h °F	5.0	6.0	6.4
Specific Heat	Btu/lb °F	0.09	0.09	0.09