PIPESEARCH®
A CRA AFFILIATE

17 CHROME

17 Chrome is a quenched and tempered martensitic-ferritic stainless steel intended for corrosion resistance in sweet (CO_2) environments with moderate chloride content, requiring high strength up to 400°F. 17 Chrome offers improved mechanical properties and increased resistance to the effects of CO_2, chlorides, pH, and temperatures when compared with standard 13 Chrome. The higher strength and temperature resistance, relative to Super 13 Chrome, allow it to be used in deeper wells with high-pressure and high-temperature (HPHT) conditions as downhole tubular components, packers, and other subsurface equipment.

17 Chrome may be considered a cost-effective alternative to duplex stainless steels such as 22 Chrome for higher pressure and temperature HPHT conditions. However, all environmental factors, including H_2S, CO_2, temperature, pH, and chloride concentration, should be considered before final material selection.

17 Chrome is not recommended for sour service.

NOMINAL COMPOSITION

Chromium 17% Nickel 4.7% Molybdenum 2.5% Copper 2.5% Iron Balance

SPECIFIED MECHANICAL PROPERTIES

Yield Strength min. (ksi)	Yield Strength max. (ksi)	Tensile Strength min. (ksi)	Hardness max. (HRC)
125	145	130	38

TYPICAL PHYSICAL PROPERTIES

		70°F	300°F	400°F
Density	lbs/in^3	0.28	0.28	0.28
Thermal Expansion	$X10^{-6}/°F$	6.1	6.1	6.1
Elastic Modulus	$psi \times 10^6$	28.1	27.3	26.7
Poisson Ratio		0.32	0.32	0.29
Yield Strength De-Rating	%	100	88	85

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