

## 17 Chrome

17 Chrome is a quenched and tempered martensitic-ferritic stainless steel intended for corrosion resistance in sweet (CO<sub>2</sub>) 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<sub>2</sub>, 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 as 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<sub>2</sub>S, CO<sub>2</sub>, 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 <sup>3</sup>	0.28	0.28	0.28
Thermal Expansion	X10 <sup>-6</sup> / °F	6.1	6.1	6.1
Elastic Modulus	psi x 10 <sup>6</sup>	28.1	27.3	26.7
Poisson Ratio		0.32	0.32	0.29
Yield Strength De-Rating	%	100	88	85