

SPECIAL ALLOYED SLICKLINE WIRE



CHEMICAL COMPOSITION (NOMINAL), %

CHEMICAL COMPOSITION OF STAINLESS STEEL															
SUPER-9															
Grade	C	Si	Mn	p	S	Cr	Mo	Ni	N	Cu	Ti	W	Co	Fe	PREN*
SUPER-9	0.01	0.08	1	0.04	0.03	16.5	16.5	55.5	-	-	-	3.5	2.50	5.50	68

* PREN: Pitting Resistance Equivalent Number (PREN= %Cr + (3.3 x %Mo) + (30 x %N))

CORROSION RESISTANCE

SUPER-9 has excellent corrosion resistance in a wide range of aggressive environments occurring in downhole environments. It resists general corrosion, localized pitting corrosion and environmental cracking in a wide range of aggressive media.

Pitting and crevice corrosion

The relative resistance of alloys to pitting corrosion can be estimated based on the chemical composition using the Pitting Resistance Equivalent number (PRE). Alloys with higher PRE values generally have better corrosion resistance compared to alloys with lower PRE values.

Stress corrosion cracking

The high levels of nickel, molybdenum and chromium in SUPER-9 make the alloy highly resistant to sour environments containing high levels of H₂S, CO and chlorides. The NACE standard MR 0175 is widely used for selecting material for use in H₂S-containing environments in the oil and gas industry. According to NACE MR0175 SUPER-9 (UNS N10276) can be used in up to 1000 psi partial pressure H₂S at 232°C (450°F) with no limitation on the chloride concentration. Below 204°C (400°F) there is no limit on the H₂S level or chloride concentration.

COMPARISON OF CHARACTERISTICS OF GRADE IN DIFFERENT CORROSIVE MEDIA

SUPER-9

Hydrogen sulfide, carbon dioxide
Excellent corrosion resistance in every concentration
Chloride, Seawater, Salty Solution, Etc.
Excellent resistance to corrosion cracking and pitting corrosion
Chloride, Hydrogen sulfide, Carbon dioxide
Very good resistance to stress corrosion cracking pitting and inter-granular corrosion (IGC) corrosion. temperature up to 250°C

MECHANICAL PROPERTIES

SUPER-9 is tested and certified in accordance with a minimum tensile strength. Proof strength is in the range of 85% of the tensile strength. This means that Sanicro 56Mo can resist high loads without permanent set of the wire.

MECHANICAL PROPERTIES			
Proof strength $R_{p0.2}$ *		Tensile strength	
MPa	ksi	MPa	ksi
=1530	=222	=1800	=261

* Corresponds to 0.2% yield strength