

## TYPE 17 CHROME - 7 NICKEL WIRE – NICKEL COATED

Type 17 chrome - 7 nickel stainless steel wire (AISI 631) has the corrosion resistance of Type 302 plus superior strength and heat resistance. This grade of stainless wire possesses high elastic qualities similar to music wire while maintaining the corrosion resistant qualities of the standard Type 302 stainless. The alloy is an excellent material for all kinds of springs where long life is required under severe service conditions, providing excellent fatigue properties, ductility, high yield strength, Modulus of elasticity, and strength-to-weight ratio.

Nickel coated stainless steel wire was developed to have excellent lubrication to minimize friction during the coiling process. The consistent and uniform lubrication helps provide stable spring dimensions and less load variation during coiling. Nickel coated stainless wire eliminates the need for pickling and degreasing prior to heat treatment with no major color change expected after heat treatment, retaining its same bright and consistent finish. Sizes are available within the range of .0206 - .1256

Chemical Composition					
Per AMS5678 * Max values					
Carbon	.09 % *	Chromium	16 - 18 %	Molybdenum	.75 % *
Manganese	1.00 % *	Nickel	6.50 - 7.75 %	Copper	.50 % *
Silicon	1.00 % *	Aluminum	.75 - 1.50 %	Phosphours	.040 % *
				Sulfur	.030 % *

Tensile Strength Table ( AMS-5678 spec)					
Nominal Diameter Inch.	As cold drawn Condition C Tensile Strength		Precipitation Hardened Condition CH900 Tensile Strength		
	Min PSI	Max PSI	Min PSI	Max PSI	
.015 to .020	275,000	305,000	335,000	365,000	
Over .020 to .025	270,000	300,000	330,000	360,000	
Over .025 to .029	265,000	295,000	325,000	355,000	
Over .029 to .041	260,000	290,000	320,000	350,000	
Over .041 to .051	255,000	285,000	310,000	340,000	
Over .051 to .061	250,000	280,000	305,000	335,000	
Over .061 to .071	242,000	272,000	297,000	327,000	
Over .071 to .086	240,000	270,000	292,000	322,000	
Over .086 to .090	230,000	260,000	282,000	312,000	
Over .090 to .100	227,000	257,000	279,000	309,000	
Over .100 to .106	223,000	253,000	274,000	304,000	
Over .106 to .130	221,000	251,000	272,000	302,000	

The above charts are intended to provide general background information. You should also review the appropriate material specification. Please contact Gibbs if you have any questions.