

## POLISH ROD SPECIFICATIONS

	1045 Piston Steel	Spray Metal	4140 Alloy	431 SS	XM-19 SS	VDM
<b>Chemical Properties</b>		Uses Piston Steel Base				
Carbon	0.43 - 0.50	0.43 - 0.50	0.38 - 0.43	.20 Max	0.06	0.02
Manganese	0.60 - 0.90	0.60 - 0.90	0.75 - 1.00	1.0 Max	4.0 - 6.0	1
Phosphorous	0.04 Max	0.04 Max	0.035 Max	.04 Max	0.04 Max	1
Sulfur	0.05 Max	0.05 Max	0.04 Max	.03 Max	0.03 Max	0.005
(Cr.) Chromium	0.13	0.13	0.80 - 1.00	15.0 - 17.0	20.5 - 23.5	20
(Si) Silicon	0.25	0.25	0.15 - 0.35	1.0 Max	1.0 Max	0.5
Iron						
Boron						
Cobalt					0.89	
(Ni) Nickel	0.12	0.12	0.21	1.25 - 2.50	11.5 - 13.5	24.5
(P) Phosphorus	0.04 Max	0.04 Max				
(Cu) Copper	0.29	0.29	0.27		0.45	
(Mo) Molybdenum	0.017	0.017	0.15 - 0.25		1.5 - 3.0	6.8
(C) Carbon	0.45	0.45				
(Mu.) Man						
(Mn) Manganese	0.8	0.8				
(S) Sulfur	0.05 Max	0.05 Max				
(V) Vanadium	0.03	0.03				
<b>Physical Properties</b>						
Tensile	130,000 - 145,000	130,000 - 145,000	120,000 - 150,000	120,000 - 150,000	140,000 - 165,000	120,000
Yield	85,000 - 90,000	85,000 - 90,000	90,000 - 110,000	90,000 - 110,000	110,000 - 145,000	90,000
Elongation	19%	9 - 12%	14 - 16 %	16 - 20 %	20 - 25%	
Hardness	20 - 26 Rc	55 - 66 Rc	28 - 34 Rc	28 - 30 Rc	25 - 32 Rc	35 Rc

Specifications shown are based on manufacturers published information