



# 17/4 PH (630) Welding Wire and Rod

U.S. ALLOY CO.  
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WASHINGTON ALLOY'S  
Quality Management System is  
Certified to **ISO 9001:2008**  
Cert # 05-R0925

**ALLOY DESCRIPTION AND APPLICATION;**  
USA 17/4 PH is a martensitic precipitation, age –hardening  
stainless steel designed for welding ASTM A564 Type 630



(17-4 ) and other similar PH stainless such as 15-5. Weld deposits provides excellent  
mechanical properties with high strength, hardness, corrosion resistance and moderate wear  
resistance. (Tri-mix = 90%He+7.5%Ar+2.5%CO<sub>2</sub>)

**TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit <sup>(1)</sup> 98%Ar/2%O<sub>2</sub>**

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stick-out	Tri-mix (cfh)
0.023	180-400	30-85	14-19	3/8-1/2"	20-25
0.030	150-350	45-125	15-20	3/8-1/2"	20-25
0.035	120-330	60-150	16-22	3/8-1/2"	20-30
0.045	100-280	90-210	17-22	3/8-1/2"	25-30
<i>Spray 0.030</i>	<i>280-600</i>	<i>160-220</i>	<i>24-28</i>	<i>3/8-1/2"</i>	<i><sup>(1)</sup>25-35</i>
<i>0.035</i>	<i>250-470</i>	<i>170-295</i>	<i>23-29</i>	<i>1/2-3/4"</i>	<i><sup>(1)</sup>25-35</i>
<i>0.045</i>	<i>200-385</i>	<i>195-360</i>	<i>24-30</i>	<i>1/2-3/4"</i>	<i><sup>(1)</sup>30-35</i>
<i>1/16"</i>	<i>110-200</i>	<i>210-380</i>	<i>25-31</i>	<i>1/2-3/4"</i>	<i><sup>(1)</sup>35-40</i>

**TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip**

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16"	80-150	12	3/8"	20	1/16-1/8"
3/32"	3/32"	150-250	12	3/8"	20	1/8- 3/16"
1/8"	1/8"	200-375	12	1/2"	25	1/4-1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

**TYPICAL CHEMISTRY (%) & WELD METAL PROPERTIES (Heat treated and hardened);**

Carbon	0.05	Copper	3.25-4.00
Manganese	0.25-0.75	Molybdenum	0.75
Silicon	0.75	Columbium + Tantalum	0.15-0.30
Phosphorus	0.03	Elongation	10%
Sulfur	0.03	Yield Strength (psi)	135,000
Chromium	16.0-16.75	Tensile Strength (psi)	150,000
Nickel	4.50-5.00		

Iron balance and all single values are maximum percentages

**AVAILABLE SIZES:** TS 630 = Spools of .020, .025, .030, .035, .040, .045

TT 17-4 PH Cut lengths of .020, .025, .030, .035, .040, .045, 1/16, 3/32, 1/8

**SPECIFICATIONS;** ANSI/AWS A5.9 ER630  
ASME SFA 5.9 ER630  
AMS 5825

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