



# Certificate of Test

K 471528

PRODEC QUALITY

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HEAT E172050 ORDER 680052/ 01 BOL 0243129 \* CERTIFICATION \* 04/26/18

----- YOUR ORDER & DATE -----  
2/16/18 CUST# 0548001 CUST TAG#509370

----- ITEM DESCRIPTION -----  
GRADE 316L/316 PRODEC QUALITY Ship Condition CONDA  
Size 316L RND HRART CONDA 6.2500 x 144.000 RL  
Country of Melt: UNITED KINGDOM Country of Mfg.: SWEDEN  
NAFTA Country of Origin is Country of Melt

No weld repair  
Free of mercury contamination, Free of radiation contamination  
No WEEE relevant substances; Meets RoHS-2011/65/EU and 2015/863

Total Bundles 2 Total Weight 5625 Approx. Hot Red. Ratio 5:1

WO 2081639 Bundles: 1D, 1E

----- SPECIFICATIONS -----

AMS 5648M, 5653H  
ASME SA182 2017 Ed  
ASME SA479 2017 Ed.  
ASTM A182/A182M 17  
ASTM A276-17  
ASTM A484/A484M 16  
Prodec Quality  
DIN 50049/EN 10204 Type 3.1  
NACE MR0175-09, ISO 15156:09  
EN 10204 Type 3.1 Document  
DFARS 252.225.7009 10/4/11  
No WEEE relevant substances

SAE AMS-QQ-S-763D  
ASME SA193 2017 Edition  
ASME SA320 B8M CL1, 2017 Ed.  
ASTM A262 15 Practice A/E  
ASTM A479/A479M 18  
ASTM A320 17a B8M Class 1  
ASTM A193 17  
Federal Spec QQ-S-763F  
NACE MR0103-10  
NACE MR0175-09, ISO 15156:09  
DFARS 225.7002-3(B)(1)  
Sol Ann 1900F min/Rapid Cool

----- MECHANICAL & OTHER TESTS -----

Hardness as shipped	(158 HB )		
Hardness as shipped	82 HRB		
Grain size	5.5	Tensile strength, KSI (MPa)	87.7 ( 605)
Micro	OK	0.2% Yield Strngth, KSI(MPa)	40.0 ( 276)
Intergranular corrosion	OK		
		Elongation % in 4D	56.0
		Reduction of area %	74.0

-- Continued --

*M.F. Marcum*

*INS*

outokumpu  
high performance stainless steel



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SHTP TO:

### CHEMICAL COMPOSITION

Carbon (C)	.018	Manganese (Mn)	1.660
Phosphorus (P)	.031	Sulphur (S)	.025
Silicon (Si)	.440	Chromium (Cr)	16.750
Nickel (Ni)	10.080	Cobalt (Co)	.264
Copper (Cu)	.390	Moly (Mo)	2.030
Nitrogen (N)	.078		
Iron (Fe)	Balance		
Melt Practice	EAF		
Refining Practice	AOD		
De-long Ferrite	1.7		

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes. We hereby certify that the test results shown in this report are correct and accurate as contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

M.F. Marcanio, Quality Manager

*M.F. Marcanio*