

HEAT E100283 ORDER 613087/ 01 BOL 0208578 \* RE-CERTIFICATION \* 03/13/12

SHIP TO:  
 COPPER & BRASS SALES  
 TMX DIVISION  
 13338 ORDEN DRIVE  
 SANTA FE SPRINGS 906700000

----- YOUR ORDER & DATE -----  
 5400060302 3/13/12 CUST# 0316001 CUST TAG#SSRD00462

----- ITEM DESCRIPTION -----  
 GRADE 316L/316 Ship Condition CONDA  
 Size 316L RND HRART CONDA 9.0000 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 EU electrical ROHS

Total Bundles 1 Total Weight 5125

WO 2011483 Bundles: 1A

-----	SPECIFICATIONS	-----
AMS 5648L, 5653G	SAE AMS-QQ-S-763B	
ASME SA479 E07-E10 A11	ASTM A182 10a	
ASTM A262 10 Practice A/E	ASTM A276 10	
ASTM A479/A479M 11	ASTM A484 11	
ASTM E112 96	ASTM A320 11 B8M Class 1	
ASTM A193 11 B8M	DIN 50049/EN 10204 Type 3.1	
DFARS 252.225.7009 10/4/11	Federal Spec QQ-S-763F	
NACE MR0175-03, mid-rad hard		

-----	MECHANICAL & OTHER TESTS	-----
Hardness as shipped (140 HB )		
Hardness as shipped 75 HRB		
Grain size 7.0	Tensile strength, KSI (MPa)	85.5 ( 590)
Micro OK	0.2% Yield Strngth, KSI(MPa)	36.5 ( 252)
Intergranular corrosion OK		
Macro OK	Elongation % in 4D	57.0
	Reduction of area %	75.0

-----	CHEMICAL COMPOSITION	-----
Carbon (C) .017	Manganese (Mn) 1.630	
Phosphorus (P) .032	Sulphur (S) .026	
Silicon (Si) .330	Chromium (Cr) 16.470	
Nickel (Ni) 10.120	Cobalt (Co) .217	
Copper (Cu) .456	Moly (Mo) 2.100	
Nitrogen (N) .082	Columbium (Cb) .012	
Titanium (Ti) .002	Aluminum (Al) .004	
Tin (Sn) .008	Boron (B) .001	
Tantalum (Ta) .008	Vanadium (V) .050	
Columbium/ Tantalum (Cb+Ta) .020		
Iron (Fe) Balance		
Melt Practice EAF		
Refining Practice AOD		
De-long Ferrite		

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

