

HEAT E110843 ORDER 626610/ 01 BOL 0215547 \* CERTIFICATION \* 01/17/12

SHIP TO:  
COPPER AND BRASS SALES  
8001 THYSSENKRUPP PARKWAY

NORTHWOOD 436190000

----- YOUR ORDER & DATE -----  
5400121738 1/17/12 CUST# 0316001 CUST TAG#SSRD00570

----- ITEM DESCRIPTION -----  
GRADE 304L/304 Ship Condition CONDA  
Size 304L 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 EU electrical ROHS

Total Bundles 1 Total Weight 2470

WO 2022323 Bundles: 1D

----- SPECIFICATIONS -----  
AMS 5639H, 5647J SAE AMS-QQ-S-763B  
UNS S30400, AISI 304 ASME SA479 E07-E10 A11  
UNS S30403, AISI 304L ASTM A276 10  
ASTM A479/A479M 11 ASTM A484 11  
DIN 50049/EN 10204 Type 3.1 Solution Annealed Condition  
Federal Spec QQ-S-763F Copper & Brass 304L MAXX  
ASTM A182 10a EN 10204 Type 3.1 Document  
Process Annealed 1750F min DFARS 252.225.7009 10/4/11  
NACE MR0175-03, ISO 15156:03 NACE MR0103/mid-rad hardness

----- MECHANICAL & OTHER TESTS -----  
Hardness as shipped (150 HB )  
Hardness as shipped 79 HRB  
Grain size 6.0 Tensile strength, KSI (MPa) 84.7 ( 584)  
Micro OK 0.2% Yield Strngth, KSI (MPa) 35.2 ( 243)  
Intergranular corrosion OK  
Elongation % in 4D 58.0  
Reduction of area % 75.0

----- CHEMICAL COMPOSITION -----  
Carbon (C) .021 Manganese (Mn) 1.660  
Phosphorus (P) .033 Sulphur (S) .020  
Silicon (Si) .446 Chromium (Cr) 18.160  
Nickel (Ni) 8.120 Cobalt (Co) .192  
Copper (Cu) .482 Moly (Mo) .300  
Nitrogen (N) .089 Columbium (Cb) .008  
Titanium (Ti) .003 Aluminum (Al) .004  
Tin (Sn) .019 Vanadium (V) .060  
Columbium/  
Tantalum (Cb+Ta) .008  
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

*M.F. Marcanio*