



Certificate of Test

PRODEC QUALITY

Page: 1

HEAT E161883 ORDER 672722/ 01 BOL 0238636 * CERTIFICATION * 03/09/17

SHIP TO:
COPPER AND BRASS SALES
8001 THYSSENKRUPP PARKWAY

NORTHWOOD 436190000

----- YOUR ORDER & DATE -----
5400341487 2/24/17 CUST# 0316001 CUST TAG#SSRD00570

----- ITEM DESCRIPTION -----
GRADE 304L/304 PRODEC QUALITY 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 2580 Approx. Hot Red. Ratio 5:1

WO 2073101 Bundles: 1B

----- SPECIFICATIONS -----
AMS 5639J, 5647J SAE AMS-QQ-S-763D
UNS S30400, AISI 304 ASME SA479 2007-2015 Ed.
UNS S30403, AISI 304L ASTM A276-16a
ASTM A479/A479M 16a ASTM A484 16
DIN 50049/EN 10204 Type 3.1 Solution Annealed Condition
Federal Spec QQ-S-763F Copper & Brass 304L MAXX
ASTM A182/A182M 16a ASTM F899 12b
NACE MR0103-10 NACE MR0175-09, ISO 15156:09

----- MECHANICAL & OTHER TESTS -----
Hardness as shipped (148 HB)
Hardness as shipped 78 HRB
Grain size 6.0 Tensile strength, KSI (MPa) 84.8 (585)
Micro OK 0.2% Yield Strngth, KSI (MPa) 35.8 (247)
Intergranular corrosion OK
Elongation % in 4D 60.0
Reduction of area % 76.0

----- CHEMICAL COMPOSITION -----
Carbon (C) .021 Manganese (Mn) 1.660
Phosphorus (P) .035 Sulphur (S) .023
Silicon (Si) .500 Chromium (Cr) 18.240
Nickel (Ni) 8.080 Cobalt (Co) .183
Copper (Cu) .460 Moly (Mo) .380
Nitrogen (N) .081 Columbium (Cb) .030
Titanium (Ti) .005 Aluminum (Al) .006
Tin (Sn) .010 Cerium (Ce) .005
Boron (B) .001 Tantalum (Ta) .001
Vanadium (V) .080 Tungsten (W) .070
Columbium/
Tantalum (Cb+Ta) .031
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