

E120757

HEAT E120757 ORDER 631065/ 01 BOL 0217768 * CERTIFICATION * 06/15/12

SHIP TO:
COPPER & BRASS SALES ***ST***
5441 NE 148TH AVENUE
SUITE 106
PORTLAND 972300000

----- YOUR ORDER & DATE -----
5400142445 6/15/12 CUST# 0316001 CUST TAG#SSRD00456

----- ITEM DESCRIPTION -----
GRADE 316L/316 Ship Condition CONDA
Size 316L RND CFA CONDA 3.0000 x 144.000 RL
Country of Melt: UNITED KINGDOM Country of Mfg.: UNITED STATES
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 1998

WO 2033620 Bundles: 1J

----- SPECIFICATIONS -----
MFG TO FINISHED BAR IN THE USA FROM BILLETS IMPORTED UNITED KINGDOM
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
Copper & Brass 316L MAXX NACE MR0175-03, mid-rad hard

----- MECHANICAL & OTHER TESTS -----
Hardness as shipped 153 HB
Hardness as shipped (80 HRB)
Grain size 8.0 Tensile strength, KSI (MPa) 86.4 (596)
Micro OK 0.2% Yield Strngth, KSI (MPa) 37.9 (261)
Intergranular corrosion OK
Elongation % in 4D 54.5
Reduction of area % 73.6

----- CHEMICAL COMPOSITION -----
Carbon (C) .019 Manganese (Mn) 1.740
Phosphorus (P) .034 Sulphur (S) .020
Silicon (Si) .390 Chromium (Cr) 16.620
Nickel (Ni) 10.070 Cobalt (Co) .356
Copper (Cu) .490 Moly (Mo) 2.040
Nitrogen (N) .074 Columbium (Cb) .017
Titanium (Ti) .001 Aluminum (Al) .002
Tin (Sn) .010 Boron (B) .001
Tantalum (Ta) .005 Vanadium (V) .050
Tungstem (W) .094
Columbium/
Tantalum (Cb+Ta) .022
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. R. Marciano, Quality Manager