

HEAT #161370 ORDER 673822/ 01 BOL 0239246 \* CERTIFICATION \* DELIVERY

SHIP TO:  
COPPER AND BRASS SALES  
4301 THYSSENKRUPP PARKWAY  
NORTHWOOD 436190000

5400348849 -- YOUR ORDER & DATE  
4/18/17 CUST# 0316001 CUST TAG#SSRD0047

ITEM DESCRIPTION  
GRADE 316L/316 PRODEC QUALITY Ship Condition CONDA  
Size 316L RND HRRT CONDA 8.5000 x 145.000 RL  
Country of Melt: UNITED KINGDOM Country of Mfg.: UNITED KINGDOM  
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 2420 Approx. Hot Red. Ratio 10:

NO 2072910 Bundles: 1C

SPECIFICATIONS  
AMS 5649M, 5653H SAE AMS-QQ S 763D  
ASME SA479 2007-2015 Ed. ASTM A182/A 32M 16a  
ASTM A262 15 Practice A/E ASTM A276-07  
ASTM A479/A479M 17 ASTM A484 16  
ASTM E112 96 ASTM A320 15a B8M Class 1  
ASTM A193 16 B8M DIN 50049/EN 10204 Type 3.1  
DIN 252.225.7009 10/4/11 Federal Spec QQ S-763E  
Copper & Brass 316L MAXX NACE MR0175-09, mid-had hard  
NACE MR0103-10 UNS S31600, AISI 316  
UNS S31603, AISI 316L

MECHANICAL & OTHER TESTS  
Hardness as shipped (143 HB )  
Hardness as shipped 76 HRB  
Grain size 6.5 Tensile strength, KSI (MPa) 83.0 ( 572 )  
Micro OK 0.2% Yield Strength, KSI (MPa) 35.9 ( 248 )  
Intergranular corrosion OK  
Elongation % in 4D 60.0  
Reduction of area % 76.0

CHEMICAL COMPOSITION  
Carbon (C) .02 Manganese (Mn) 1.710  
Phosphorus (P) .037 Sulphur (S) .025  
Silicon (Si) .340 Chromium (Cr) 16.650  
Nickel (Ni) 10.150 Cobalt (Co) .301  
Copper (Cu) .490 Moly (Mo) 2.050  
Nitrogen (N) .080  
Iron (Fe) Balance  
X-ray Practice EAF  
Refining Practice AOD  
De long Ferrite .8

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

May 18 / 2017

M.F. Marcanio

Thomas Sanchez

Outokumpu Stainless Bar, LLC  
3723 Oronow Plow  
Kennesaw, GA 30144

From: TK Materials CA, Ltd.

Cust. NEXXA INDUSTRIES LTD

Del.: 2405207836

CstAr

CstOr 80104

Qty.: 66.290 LB

Date 05/09/2017

4 pcs  
120  
G/F/E  
C/A  
7077  
W/H  
W/H  
W/H  
Thyssenkrupp