

Anna C. Riggs



Certificate of Test E80641

* CERTIFICATION *

HEAT E80641 ORDER 0501803/001 SON D68297 BOL 0151472 TAG 1933415 09/16/08

SHIP TO:
COPPER & BRASS SALES
2923 Technology Dr

Rochester Hills MI 48309

----- YOUR ORDER & DATE -----
CY2254 9/16/08 CUST# COPBRA01 CUST TAG#399401-9

----- ITEM DESCRIPTION -----

GRADE 316L/316
Size 316L HRART RND BAR 5-1/4 STD Country of Melt: BRI
Ship Condition A Country of Mfg.: SWE
NAFTA Country of Origin is Country of Melt

Total Bundles 1 SON Weight 1905

----- SPECIFICATIONS -----

AMS 5648K, 5653F	SAE-AMS QQ-S-763B
ASME SA479 E07	ASTM A182-07A CHEMISTRY
ASTM A262 O2A PRACTICE A/E	ASTM A276 08
ASTM A479 06A	ASTM A484 06B
ASTM E112 96	DIN 50049/EN 10204 3.1B
DFARS 252.225.7014 6/05	FEDERAL SPEC. QQ-S-763F
SOLUTION ANNEALED CONDITION	FREE OF CONT. CARBIDE NETWORK
NO WELD REPAIR	FREE OF MERCURY CONTAMINATION

----- MECHANICAL & OTHER TESTS -----

Test Condition	A		
Hardness as shipped	(143 HBW)		
Hardness as shipped	77 HRBS		
Grain size	6.0	Tensile strength, KSI (MPa)	86.9 (599)
Micro	OK	0.2% Yield Strngth, KSI (MPa)	38.7 (267)
Intergranular corrosion	OK		
Macro	OK	Elongation % in 4D	57.0
		Reduction of area %	70.0

----- CHEMICAL COMPOSITION -----

Carbon (C)	.023	Manganese (Mn)	1.650
Phosphorus (P)	.035	Sulphur (S)	.025
Silicon (Si)	.329	Chromium (Cr)	17.260
Nickel (Ni)	10.100	Cobalt (Co)	.178
Copper (Cu)	.443	Moly (Mo)	2.030
Nitrogen (N)	.082	Columbium (Cb)	.021
Titanium (Ti)	.002	Aluminum (Al)	.004
Tin (Sn)	.009	Boron (B)	.001
Tantalum (Ta)	.006	Vanadium (V)	.050
Columbium/ Tantalum (Cb+Ta)	.027		
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

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