

OUTOKUMPU

Certificate of Test

38671



* CERTIFICATION *

HT #
E41034

HEAT E41034 ORDER 0456871/010 SON 12699D BOL 0127204 TAG 1600925 08/12/04

----- YOUR ORDER & DATE -----
14406-OP 8/12/04 CUST TAG#11105255

----- ITEM DESCRIPTION -----
GRADE 304L/304
Size 304L HRART RND BAR 5-1/4 STD
Ship Condition A
Country of Melt: BRI
Country of Mfg.: USA
NAFTA Country of Origin is Country of Melt

Total Bundles 1 SON Weight 2580

----- SPECIFICATIONS -----
MFG TO FINISHED BAR IN THE USA FROM BILLETS IMPORTED FROM BRITAIN
AMS 5639H, 5647H
ASME SA182 E01 A03
ASME SA479 E01
ASTM A182-02
ASTM A276 03
ASTM A479 03
ASTM A320 01 B8 CLASS 1
DIN 50049/EN 10204 3.1B
TIME SUFF. TO SOLN CARBIDES
UNS S30400/S30403, AISI304/304L
SOL ANNEALED @ 1900 F MIN. WQ
NO WELD REPAIR
SAE-AMS QQ-S-763
ASME SA320 B8 CL1 E01
ASME SA193 B8 CL1 E01 A02
ASTM A262 98 PRACTICE E
ASTM A314 97
ASTM A484 03A
ASTM A193-01B B8 CLASS 1
SOL ANNEAL @ 1900F MIN/WQ
FKD STD QQ-S-763F
WATER QUENCHED
FREE OF MERCURY CONTAMINATION

----- MECHANICAL & OTHER TESTS -----
Test Condition A
Hardness as shipped 140 HBW
Hardness as shipped (76 HRBS)
Grain size 4.0
Micro OK
Intergranular corrosion OK
Macro OK
Tensile strength, KSI (MPa) 81.0 (558)
0.2% Yield Strength, KSI (MPa) 31.6 (218)
Elongation % in 4D 62.0
Reduction of area % 76.0

----- CHEMICAL COMPOSITION -----
Carbon (C) .025
Phosphorus (P) .028
Silicon (Si) .373
Nickel (Ni) 8.390
Copper (Cu) .326
Nitrogen (N) .067
Titanium (Ti) .003
Tin (Sn) .013
Manganese (Mn) 1.700
Sulphur (S) .027
Chromium (Cr) 18.230
Cobalt (Co) .124
Moly (Mo) .320
Columbium (Cb) .005
Aluminum (Al) .004
Vanadium (V) .100
Tantalum (Cb+Ta) .028
Iron (Fe) Balance
Melt Practice EAF
Refining Practice AOD
De-long Ferrite 5.5

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 chemical analysis and/or test results shown in this report are correct as contained in the records of the company.

M.F. Marcanio, Quality Manager

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