

45041-2A

40608-1-07



ELECTRALLOY
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**MATERIAL CERTIFICATION
REPORT and CERTIFICATE
OF QUALITY CONFORMANCE**

61336

4 pgs.

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<u>CUSTOMER NAME AND ADDRESS</u>	<u>CUSTOMER ORDER NO.</u> P70725AM805 <u>IDENTIFICATION</u> Heat No. 45041
<u>PRODUCT DESCRIPTION</u> SPEED-E-MAC, Stainless Steel Bar, electric arc furnace melted, A.O.D. refined, press forged, solution annealed, water quenched, bar peeled, with saw cut square ends.	

SPECIFICATIONS

Type 316/316L (UNS S31600/S31603) - ASTM A182/A182M-04, AMS 5648K, AMS 5653F
 ASTM A193/A193M-04a, (316), ASTM A320/A320M-03 (316), ASTM A479/A479M-04
 ASTM A314-97, ASTM A473-01, ASTM A276-04a, NACE Std-MR0175-99, OO-S-763F,
 ASTM A336/A336M-03a1, ASME SA-182/SA-182M, ASME SA-336/SA-336M, ASME SA-
 320/SA-320M02, (316) ASME SA-479/SA-479M, A484/A484M-06a, (All July, 1, on
 (Edition) MIL-S-7720 and AMS S7720, ASTM SA-193/SA-193M-94

CHEMICAL ANALYSIS

Heat Number	C	MN	P	S	SI	CR	NI	MO
45041	0.010	1.81	0.025	0.023	0.47	16.33	10.21	2.10
	CU	N	CO					
	0.40	0.083	0.13					

ITEM DESCRIPTION

Heat Number	HWRR	Quantity & Weight	Size
45041-2A		1 Bar - 2,685 Pounds.	Nom. 9" Rd. x 144.31" lg.

TENSILE PROPERTIES

Heat Number	Test Dir	Test Loc	Tensile (PSI)	.2% Yield (PSI)	Reduction (%)	Elong 4D (%)
45041-2A	LT	TOP	* 87890	* 42250	* 79.1	* 54.6

BRINELL/ROCKWELL

Heat Number	Test Loc	Brinell
45041-2A	TOP	* 148

Note: The recording of false, fictitious, or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute.

The above are true and correct results of tests on samples of the material. Results conform to the specification(s) listed above and are on record.

Meets EU Electrical "RoHS".
Contains NO "WEEE" relevant substances.
Complies with DFARS-225.1-Buy American Act-Supplies.

HWRR = Minimum Hot Working Reduction Ratio.

By : William A. Deets Date: 09/18/07

Name : William A. Deets

Title: QC Technician/Works Inspector

40608-1-07



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CUSTOMER NAME AND ADDRESS	CUSTOMER ORDER NO. F70725AMS05 IDENTIFICATION Heat No. 45041
PRODUCT DESCRIPTION SPEED-B-MAC, Stainless Steel Bar, electric arc furnace melted, A.O.D. refined, press forged, solution annealed, water quenched, bar peeled, with saw cut square ends.	

PASS/FAIL TESTS

Heat Number	Carb Nat	Macro Etch						
45041-2A	* P	* P						

ASTM PRACTICES (Normal)

Heat Number	FRAC E					
	TT	LT				
45041-2A	* P					

OTHER TESTS

Heat Number	Grain Size					
	TT	LT				
45041-2A	* 3.5					

<<<< TESTS MARKED BY (*) ARE QUALIFIED BY THE MASTER HEAT >>>>

ITEM DESCRIPTION

Heat Number	HWRB	QUANTITY & WEIGHT	Size
45041-2B		1 Bar - 3,205 Pounds.	Nom. 9" Rd. x 172.56" lg.

TENSILE PROPERTIES

Heat Number	Test Dir	Test Loc	Tensile (PSI)	.2% Yield (PSI)	Reduction (%)	Elong 4D (%)
45041-2B	LT	TOP	87890	42250	79.1	54.6

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Meets EU Electrical "RoHS".
Contains NO "WEEE" relevant substances.
Complies with DFARS-225.1-Buy American Act. Applies

HWRB = Minimum Hot Working Reduction Ratio.
By : *[Signature]* Date: 09/18/07
Name : William A. Deats
Title: QC Technician/Works Inspector

REP: JEL. JCP-ET-EQUIPMENT/ 16:10 37800 ORIGINAL 17/01/000 203 1028 P.023/063

40508-1-07



ELECTRALLOY
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CUSTOMER NAME AND ADDRESS		CUSTOMER ORDER NO. P70725AM805
		IDENTIFICATION Heat No. <u>45041</u>
PRODUCT DESCRIPTION SPEED-E-MAC, Stainless Steel Bar, electric arc furnace melted, A.O.D. refined, press forged, solution annealed, water quenched, bar peeled, with saw cut square ends.		

BRINELL/ROCKWELL

Heat Number	Test Loc	Brinell
45041-2B	TOP	148

PASS/FAIL TESTS

Heat Number	Carb Net	Macro Etch					
45041-2B	P	P					

ASTM PRACTICES (Normal)

Heat Number	EPAK E					
	TT	LT				
45041-2B	P					

OTHER TESTS

Heat Number	Grain Size				
	TT	LT			
45041-2B	3.5				

STATEMENTS

Material represented was melted and manufactured in the USA
 At time of shipment, items and/or material produced under this order have not come in contact with mercury or its compounds.
 Material represented was not weld repaired.

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Meets EU Electrical "RoHS".
 Contains NO "WEEE" relevant substances.
 Complies with DFARS-225.1-Buy American Act Applies.

HWR = Minimum Hot Working Reduction Ratio.

By : William A. Deets Date: 09/18/07
 Name : William A. Deets
 Title: QC Technician/Works Inspector

DEF-EL-COU(1100) 12:12 38K06 DRIDJUL

178A/000 003 1324

P. 030/003

40608-1-07



ELECTRALLOY
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<p><u>CUSTOMER NAME AND ADDRESS</u></p>	<p>CUSTOMER ORDER NO. <u>P70725AMB05</u> IDENTIFICATION Heat No. <u>45041</u></p>
<p>PRODUCT SPEED-E-MAC, Stainless Steel Bar, electric arc furnace melted, DESCRIPTION A.O.D. refined, press forged, solution annealed, water quenched, bar peeled, with saw cut square ends.</p>	

STATEMENTS

Material represented was solution annealed at 1925 deg. F +/- 25 deg. F held 30 minutes per inch of thickness and water quenched

Material represented was produced in accordance with the Electralloy Quality Control Program dated 09/26/2006, which meets the requirements of ISO9001 (2000), MIL-I-45208A and ASME Code Section 3, Subsection NCA 3800

ASTM E1019-03, ASTM E572-02a, and ASTM E1086-94, are the methods used to determine the chemical analysis for Fe base (high alloy), Ni base and Cu base alloys.

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BY : William A. Deets Date: 09/18/07
Name : William A. Deets
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