



51664

C 064019

<b>MATERIAL CERTIFICATION REPORT and CERTIFICATION OF QUALITY CONFORMANCE</b>		<b>Customer Address</b>	<b>Shipping Address</b>	<b>Print Date Time</b>	<b>Ship Note</b>
 <b>ELECTRALLOY</b> G. O. CARLSON PLATE	 175 Main Street Oil City PA 16301 1 (800) 458-7273	ASA ALLOYS INC	ASA ALLOYS INC	10-Sep-2012 11:12	119747
		81 STEINWAY BLVD	20 CHALLENGER CRESCENT	<b>Certification ID</b>	
		ETOBICOKE ON M9W6H6	SHERWOOD PARK AB T8H2R1	132246-1	
		CANADA	CANADA	<b>Customer Order</b>	<b>Sales Order</b>
				P028161	114992

Grade: 316L  
 Specification: Type 316/316L(UNS S31600/S31603) - ASTM A262 practice E, ASTM A182/A182M-11a, AMS 5648L, AMS 5653G, ASTM A193/A193M-12,(316), ASTM A320/A320M-11a (316), ASTM A479/A479M-11, ASTM A314-08, ASTM A473-01(2009), ASTM A 276- 10,NACE Std-MR0175-03, QQ-S-763F, ASTM A336/A336M-10a, ASME SA-182/SA-182M, ASME SA-336/SA-336M, ASME SA - 320/SA-320 M, (316)ASME SA-479/SA-479M,ASTM A4 84/A484M-11, SA-193/A193M 2010 Edition and any additional specifications which may be listed below.  
 Condition: HOT ROLLED /HOT FORGED, ANNEALED  
 Finish: PEELED

Sales Order	Quantity	Heat	Lot ID	Weight	Size	Customer Mark
114992-1	1	51664	51664-3B	5,790 LB	Diam: 15.1250 in; Length: 112.2500 in	

Lot	Test	Result	Low Limit	High Limit
<b>SPECIFICATION RESULTS</b>				
<b>FINAL LADLE CHEMISTRY FOR AIRMELT</b>				
51664	C	0.016	0.000	0.030
51664	Mn	1.74	1.25	2.00
51664	P	0.026	0.000	0.040
51664	S	0.022	0.020	0.025
51664	Si	0.51	0.00	1.00
51664	Cr	16.66	16.00	18.00
51664	Ni	10.23	10.00	14.00
51664	Mo	2.09	2.00	3.00
51664	Cu	0.45	0.00	0.75
51664	N	0.086	0.000	0.100
51664	Co	0.15	0.00	0.20
<b>PASS / FAIL TESTS</b>				
51664-3B	Carb Net	PASS		
51664-3B	Macro Etch	PASS		
<b>REDUCTION AREA</b>				
51664-3B	LT (%)	79.2	50	999
<b>TENSILE</b>				
51664-3B	LT (PSI)	86000	75000	400000
<b>.2% YIELD OFFSET</b>				
51664-3B	LT (PSI)	46000	30000	400000
<b>ELONGATION 4D</b>				
51664-3B	LT (%)	58.5	45	999

<b>BRINELL</b>			
51664-3B	(BHN)	149	140 200
<b>GRAIN SIZE</b>			
51664-3B	Grain Size TT (GRS)	3.5	0 9999
<b>ASTM PRACTICES - ASTM A262</b>			
51664-3B	Prac E LT	PASS	

COG-1019

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



ELECTRALLOY  
G. O. CARLSON PLATE



175 Main Street  
Oil City PA 16301  
1 (800) 458-7273

**Customer Address**  
ASA ALLOYS INC  
81 STEINWAY BLVD  
ETOBICOKE ON M9W6H6  
CANADA

**Shipping Address**  
ASA ALLOYS INC  
20 CHALLENGER CRESCENT  
SHERWOOD PARK AB T8H2R1  
CANADA

<b>Print Date Time</b>	10-Sep-2012 11:12	<b>Ship Note</b>	119747
<b>Certification ID</b>	132246-1	<b>Customer Order</b>	P028161
		<b>Sales Order</b>	114992

**Quality Statements:**

ASTM E1019-08, ASTM E572-02a (2006)e2 and ASTM E1086-08 are methods used to determine the chemical analysis for Fe Base (High Alloy) alloys utilizing XRF, OES and Combustion and Fusion Methods.

All items are in full compliance with all purchase order and specification requirements.

At time of shipment, items and/or material produced under this order have not come in contact with Mercury or its compounds.

Compliant with DFARS 252.225-7014 Alt. 1. Preference for Domestic Specialty Metals

Material Certification conforms to Certificate 3.1 as in EN 10204:2010

Material represented was melted and manufactured in the USA

The mechanical tests have been performed at Modern Industries, Materials Research Division located at 613 West 11th Street Eric, PA 16512-0399

Material represented was produced in accordance with the Electralloy Quality Control Program dated 06/07/2011, which meets the requirements of ISO9001(2008), MIL-I-45208A including Amendment 1 and ASME Code Section 3, Subsection NCA 3800.

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

Material represented was ultrasonically inspected in accordance with ASTM A388 and found acceptable using a 1/8" flat bottom hole as the acceptance criteria.

Material was not exposed to Radium or other radioactive materials while at our facility.

Melting and Refining Source - Electralloy

Method of manufacture - Electric Arc Furnace, AOD refined.

Material represented was not weld repaired.

Meets EU Electrical "RoHS". Contains NO "WEEE" relevant substances. Complies with DFARS-225.1-Buy American Act-Supplies. HWRR = Minimum Hot Working Reduction Ratio. Electralloy only accepts residual and trace elements to the limits invoked by the specification and or customer. This document shall not be reproduced, except in full, without the written approval of Electralloy / GOC Plate. We hereby affirm that the reported results on this certification are correct and accurate. All tests and results and operations performed by (Electralloy/G.O. Carlson Plate) or its subcontractors are in compliance with the applicable material/customer specification(s).

Name: Bart Plyler

Title: QC Technician

By:

The parties agree that when title transfers for the products subject to this agreement, or when the products are delivered to purchaser, whichever occurs first, responsibility for the submission of any required export or re-export licenses or related export control approvals for these products also transfers to purchaser. Any export license requirement under any applicable export control statute, regulation, or practice, from any U.S. government agency, including but not limited to the Department of Commerce's Bureau of Industry and Security, the Department of Treasury, Office of Foreign Assets Control, the U.S. Department of State, Directorate of Defense Trade Controls, and the Nuclear Regulatory Commission, are solely the responsibility of the purchaser. Further, purchaser warrants that it will comply with all applicable export and re-export controls related to these products.

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.  
At time of shipment, items and/or material produced under this order have not come into contact with Mercury or its compounds.