



CO2

MATERIAL CERTIFICATION REPORT and CERTIFICATION OF QUALITY CONFORMANCE  ELECTRALLOY G. O. CARLSON PLATE	 175 Main Street OH City PA 16301 1 (800) 458-7273	Customer Address	Shipping Address	Print Date Time	Ship Note
		<div style="border: 2px solid black; border-radius: 50%; width: 150px; height: 100px; display: flex; align-items: center; justify-content: center; font-size: 48px; font-weight: bold;">49741</div>		20-Oct-2010 16:31	107928
				Certification ID	
				107900-1	
		Customer Order	Sales Order		
		P00923	107456		

Grade: 316L
 Specification: Type 316/316L (UNS S31600/S31603) - ASTM A182/A182M-08a (F316,F316L) AMS 5648K, AMS 5653F ASTM A193/A193M-08b,(316), ASTM A479/A479M-06a, ASTM A276-08a, NACE Std-MR0175/ISO 15156-3 QQ-S-763F, ASME SA-182/SA-182M, SA-479/SA-479M, ASTM A484/A484M-08, ASME SA-193/SA-193M, ASTM A262 practice B (A allowed), Energy Steel SS1 rev 4 and any additional specifications which may be listed below.
 Condition: HOT ROLLED / HOT FORGED, ANNEALED
 Finish: ROUGH TURNED

Sales Order	Quantity	Heat	Lot ID	Weight	Size	Customer Mark
107456-10	1	49741	49741-1B	5,800 LB	Length: 149.5600 in; Diam: 13.1540 in	



Lot	Test	Result	Low Limit	High Limit	49741-1B	Grain Size TT (GRS)	3	0	9999
SPECIFICATION RESULTS					ASTM PRACTICES - ASTM A262				
FINAL LADLE CHEMISTRY FOR AIRMELT					49741-1B Prac E LT PASS				
49741	C	0.019	0.000	0.030					
49741	Mn	1.80	1.25	2.00					
49741	P	0.024	0.000	0.040					
49741	S	0.021	0.020	0.025					
49741	Si	0.54	0.00	1.00					
49741	Cr	16.41	16.00	18.00					
49741	Ni	10.28	10.00	14.00					
49741	Mo	2.11	2.00	3.00					
49741	Cu	0.52	0.00	0.75					
49741	N	0.076	0.000	0.100					
49741	Co	0.10	0.00	0.20					
PASS / FAIL TESTS									
49741-1B	Carb Net								PASS
49741-1B	Macro Etch								PASS
REDUCTION AREA									
49741-1B	LT (%)	75	50	999					
TENSILE									
49741-1B	LT (PSI)	88300	75000	400000					
.2% YIELD									
49741-1B	LT (PSI)	48200	30000	400000					
ELONGATION 4D									
49741-1B	LT (%)	52	45	999					
BRINELL									
49741-1B	(BHN)	152	140	200					
GRAIN SIZE									

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.

Lm#: 1
 SO#: 5032867
 Date: 1/7/2011
 Part: 11413005
 To: ASA ALLOYS EDMONTON
 Heat#: 49741

CO2

Ln#: 1
SO#: S032967
To: ASA ALLOYS EDMONTON
Heat#: 48741
Date: 1/7/2011
Part: 11413005

MATERIAL CERTIFICATION REPORT and CERTIFICATION OF QUALITY CONFORMANCE		Customer Address	Shipping Address	Print Date Time	Ship Note
 ELECTRALLOY G. O. CARLSON PLATE	 PLATE G PRODUCTS	175 Main Street Oil City PA 16301 1 (800) 458-7273		20-Oct-2010 16:31	107928
				Certification ID	
				Customer Order	Sales Order
				P00923	107456

Quality Statements:

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.
 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.
 The mechanical tests have been performed at Modern Industries, Materials Research Division located at 613 West 11th Street Erie, PA 16512-0399
 Material Certification conforms to Certificate 3.1 as in EN 10204:2004
 Material represented was melted and manufactured in the USA
 The reported results represent the actual attributes of the material furnished and indicate full compliance with all applicable specification and contract requirements.
 Material represented was produced in accordance with the Electralloy Quality Control Program dated 08/23/2010, which meets the requirements of ISO9001(2008), MIL-I-45208A 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.
 Stainless Steel Bar, electric arc furnace melted, A.O.D. refined.
 HWRR: 3.2:1 Part #1142505.



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: William A. Deets
Title: QC Technician/Works Inspector
By: