

HT# 56630



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

Customer Address  
 COPPER & BRASS SALES  
 ACCOUNTS PAYABLE  
 P.O. BOX 3116  
 SOUTHFIELD, MI 48066-511

Shipping Address  
 COPPER & BRASS SALES  
 WESTERN REGION MATERIALS  
 1338 ORDENDR. BUILDING H  
 SANTA FE SPRINGS, CA 90670

Print Date Time 31-Mar-2015 9:35  
 Ship Note 132660  
 Certification ID 160482-1  
 Customer Order Sales Order  
 3400251058-R05 122806

Grade: 304L  
 Specification: Type 304/304L (UNS S30400/S30403) - ASTM A182/A182M-14a (304/304L), AMS 5639H, ASTM A193/A193M-12W/304B, B8A1, ASTM A320/A320M-14 (304, B8, B8A1, SA-182, SA-193, SA-320, SA-336, SA-479 2013 Edition, NACE MR0175/ISO.  
 Condition: HOT ROLLED / HOT FORGED, ANNEALED  
 Finish: ROUGH TURNED

Sales Order 122806-1 Quantity 1 Heat 56630 Lot ID 56630-2B Weight 4.710 LB Diam: 11.0825 in Length: 170.7500 in Size Customer Mark

Lot	Test	Result	Low Limit	High Limit	56630-2B	Grain Size TT (GRS)	3	0	9999
SPECTRATOR RESULTS									
FINAL LADLE CHEMISTRY FOR AIRMELT									
56630	C	0.012	0.000	0.030	ASTM PRACTICES - ASTM A262		PASS		
56630	Mn	1.76	1.25	2.00	Prac E, LT				
56630	P	0.030	0.000	0.040					
56630	S	0.021	0.020	0.025					
56630	Si	0.55	0.00	1.00					
56630	Cr	18.52	18.00	20.00					
56630	Ni	8.15	8.00	10.50					
56630	Mo	0.33	0.00	0.75					
56630	N	0.084	0.000	0.100					
56630	Cu	0.67	0.30	0.75					
56630	Co	0.15	0.00	0.20					
PASS/FAIL TESTS									
56630-2B	Carb. Max	PASS							
56630-2B	Macro Etch	PASS							
REDUCTION AREA									
56630-2B	RA, LT (%)	76.4	50	999					
TENSILE									
56630-2B	LT, PEEL	82840	75000	100000					
2% YIELD OFFSET									
56630-2B	LT (PSI)	39720	30000	400000					
ELONGATION 4D									
56630-2B	LT (%)	54	40	459					
BRINELL									
56630-2B	(HBN)	153	140	132					
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 initial and correct results of tests on samples of the material. Results conform to the specifications listed above and are on record. All lines of shipment items and/or material produced under this order have not come into contact with Mercury or its compounds.

From: TK Materials CA, Ltd.  
 Cust.  
 CstAr  
 Wgt.: 756 LB

Del.: 2404250980  
 CstOr 2012-603  
 Date 12/09/2015

*Thomas Sanchez*



ELECTRALLOY  
G. O. CARLSON PLATE  
175 Main Street  
Oil City, PA 16201  
1 (800) 458-2773

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13338 ORDENDR., BUILDING H  
SANTA FE SPRINGS, CA 90670

Print Date/Time	Ship Note
31-Mar-2015 9:35	132660
Certification ID	
160482-1	
Customer Order	Sales Order
5400251058-R05	122806

**Quality Statements:**

ASTM E1019-11, ASTM E572-13 and ASTM E1086-14 are methods used to determine the chemical analysis for Fe Base (High Alloy) alloys utilizing XRF, OES and Combustion and Fusion Methods.

The reported results represent the actual attributes of the material furnished and indicate full compliance with all applicable specification and contract requirements. At time of shipment, items and/or material produced under this order have not come in contact with Mercury or its compounds.

Material Certification conforms to Certificate 3.1 as in EN 10204:2010  
Material represented is supplied in the Unstabilized Condition.  
Material represented was melted and manufactured in the USA  
Material represented was not weld repaired.

Material represented was produced in accordance with the Electricalloy Quality Control Program dated 01/22/2014, which meets the requirements of AS9100C ISO9001(2008), MIL-1-45208A including Amendment 1 and 2, ASME Code Section 3, Subsection NCA 3800.

Material represented was solution annealed at 1925 degrees F +/-25 degrees F, held minimum 30 minutes per inch of thickness and water quenched.  
Material represented was ultrasonically inspected in accordance with ASTM A 388 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.  
Method of Manufacture - Electric Arc Furnace Melt AOD Refined  
Restriction on Acquisition of Specialty Metals

The mechanical tests have been performed at Modern Industries, Materials Research Division located at 613 West 11th Street Erie, PA 16512-0399  
All items are in full compliance with all purchase order and specification requirements.

Name: David A. Fulkerson

Title: QC Technician/Works Inspector  
By:

Meets EU Electrical 'RoHS'. Contains NO "WEEE" relevant substances. Complies with DFARS-225 J-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 Electricalloy / GOC Plate. We hereby affirm that the reported results on this certification are correct and accurate. All tests and results and operations performed by Electricalloy/G.O. Carlson Plate or its subcontractors are in compliance with the applicable material/customer specifications.  
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.

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

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