

S O L D T O	COPPER & BRASS SALES INC 22355 WEST ELEVEN MILE ROAD SOUTHFIELD, MI 48034	S H I P T O	COPPER & BRASS SALES 4143 101ST STREET EDMONTON AB T6E 0A4, CANADA	CIL ORDER NO. P5-29861-2-01
				HEAT NO. A12313

CIL INSIDE SALES REP. L HINMAN	SHIPPED FROM SOLVAY, NY USA	CUSTOMER P.O. 5400160038-R05	CUSTOMER PART NO. SSRD01246
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QUANTITY SHIPPED 6136 LBS.

DESCRIPTION OF MATERIAL

CRU 316/316L RTA SIZE 15.000 RD
 AMS-5648-K AMS-5653-F ASME SA-479-10 ASTM-A276-10 ASTM-A479-11 CBS 316LNACE-0 (EX. 3.2, 3.4, 5.2.1) NACE-MR-01-75-03

CHEMICAL ANALYSIS

C	MN	P	S	SI	NI	CR	MO	CU	N
.030	1.72	.025	.022	.63	10.56	16.56	2.18	.30	.082

AS SHIPPED PROPERTIES

HARDNESS
 BHN 154/154
 LONGITUDINAL
 TENSILE PSI 84,490 GRAIN SIZE
 YLD. 2% PSI 40,460 4.0
 % ELONG4D 56.4 INTERGRANULAR CORROSION TEST OK PER ASTM A262, PRACTICE A FOR E
 RED/AREA% 75.5

AS SHIPPED MATERIAL CONDITION

MATERIAL ANNEALED AT 1900 DEG. F. - 30 MINUTES AT TEMP - WATER QUENCHED.
 REDUCTION RATIO: 4:1

ADDITIONAL MATERIAL STATEMENTS

MATERIAL MELTED BY ELECTRIC FURNACE AND ARGON OXYGEN DECARBURIZATION REFINED.
 ULTRASONIC PERFORMED TO ASTM-388/API6A - RESULTS ACCEPTABLE

THANK YOU FOR SELECTING A QUALITY PRODUCT MELTED AND MANUFACTURED WITH PRIDE AT CRUCIBLE INDUSTRIES LLC LOCATED IN SOLVAY, NY 13209, USA. WE PROVIDE MATERIAL THAT IS FREE FROM MERCURY CONTAMINATION AND RADIATION AT THE TIME OF SHIPMENT. NO WELD REPAIR IS DONE. CRUCIBLE INDUSTRIES LLC HOLDS A CERTIFICATE OF REGISTRATION TO ISO 9001:2008, PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC 7/2 ANNEX 1, PARAGRAPH 4.3 AND WORKS UNDER THE GUIDELINES OF NCA 3800 USING QP MANUAL DATED 8/28/12. WE ARE COMPLIANT WITH EU DIRECTIVE 2002/95/EC (ROHS), REACH, EN 10204 2004.3.1, AND DFARS 252.225.7001,7002,7008,7009 MATERIAL IS OF NAFTA ORIGIN. MATERIAL TESTING IS PERFORMED ON A PROLONGATION OF THE BAR, IN COMPLIANCE WITH INDUSTRY STANDARDS ASTM A370,E8,E10, E18,E23,E45,E112,E381,E604,E572,E1019,ANDE1086. THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES, INCLUDING FEDERAL LAW, TITLE 18, CHAPTER47.PRODUCTS, TECHNICAL DATA, TECHNOLOGY, AND SERVICES OF CRUCIBLE INDUSTRIES LLC ARE SUBJECT TO U.S. EXPORT CONTROLS UNDER THE APPLICABLE LAWS AND REGULATIONS OF THE UNITED STATES.

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED ACCORDANCE WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH THE SPECIFICATION REQUIREMENTS.
 CRUCIBLE INDUSTRIES LLC

CERTIFIED BY

William P. Mastroe

WILLIAM MASTROE - MANAGER OF QUALITY AND PROCESS ENGINEERING