



575 STATE FAIR BLVD.
SOLVAY, NY 13209

Certificate of Test

A11679

C
O
P
P
E
R
S
A
L
E
S

COPPER & BRASS SALES INC
22355 WEST ELEVEN MILE ROAD
SOUTHFIELD, MI 48034

S
H
I
P
P
I
N
G
T
O
COPPER & BRASS SALES
10648 WEST LITTLE YORK
SUITE 400
HOUSTON, TX 77041

OUR ORDER NO.
P5-21203-1-01

DATE
07/20/11

CUSTOMER ORDER NO
5400101041-R05

CUSTOMER REQ NO

DISTRICT
L HINMAN

SHIPPED FROM
SYRACUSE

DESCRIPTION OF MATERIAL

CRU 316/316L RTA
ASTM-A479-11 ASTM A276-10 AMS-5648K AMS-5653F ASME-SA479-10ED

SIZE

13.000 RD

HEAT NO.

CHEMICAL ANALYSIS

HEAT NO.	C	MN	P	S	SI	NI	CR	MO	CU	N
A11679	.015	1.78	.029	.024	.65	10.31	16.36	2.11	.35	.075

QUANTITY HEAT NO.

MECHANICAL PROPERTIES

QUANTITY	HEAT NO.	TENSILE PSI	YLD.2%PSI	%ELONG4D	RED/AREA%	HARDNESS
6104 #	A11679	81,490	40,100	59.8	74.7	BHN 153

MACRO TEST OK

INTERGRANULAR CORROSION TEST OK.

GRAIN SIZE # 5.0

MATERIAL MELTED BY ELECTRIC FURNACE ARGON OXYGEN DECARBURIZATION REFINED.

MATERIAL ANNEALED AT 1950 DEG. F. - WATER QUENCHED.

SOLD TO: Technoworkz INC
 DATE: 11-10-11 CITY: 20PC
 CUSTOMER PO#: Danilo
 SWIPER NO: 2401346073
 BY: _____
 COPPER & BRASS SALES DIVISION

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 3/10/11. WE ARE COMPLIANT WITH EU DIRECTIVE 2002/95/EC (ROHS), REACH, EN 10204 2004 3.1, AND DFARS 252-225.7014 ALT1 & 225.7001, 7002 - 3 (b) (1) 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, AND E1086. 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, CHAPTER 47. 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 MASTROE - MANAGER QUALITY CONTROL & LABS