

TEST REPORT

	<input type="checkbox"/> RMI TITANIUM COMPANY 1000 WARREN AVE. NILES, OHIO 44448	DATE 04/24/2015	SALES ORDER NO. 233006	GRADE 6Al-4V ✓	PACKING LIST NO. 80456742	
	<input checked="" type="checkbox"/> RTI TRADCO 1701 WEST MAIN ST. WASHINGTON, MO 63080	CUSTOMER NAME RTI LOS ANGELES		CUSTOMER ORDER NO. 7000010461		
IDENTIFICATION & REFER MATERIAL NUMBER 8H38703		INGOT NO 04	LOT 00	SPECIFICATION AMS 4911N ✓ DMS 1592H MIL-T-9046J AB-1 AM, 2 ✓ AMS-T-9046A AB-1 ✓ S-1000 DTD 12/4/13 ✓ S-400 10/15/12 ✓ F-14B DTD 9/30/13 F-17A DTD 8/30/13 F-22A DTD 8/2/13 F-23B DTD 9/3/13 ASTM B 265-13A GR. 5 PWA 300BL PWA 310BG ASTM F 1472-08E1 ✓ MIL-T-9046H TYPE 3 COMP. C ✓ RR9000:SABRE ED. 2 REV. 1		
PRODUCTION ORDER 30199724		MATERIAL H.R. ANN. & CLD. TI SHEET ✓				

CHEMISTRY: HEAT CODE: PBGYV (INGOT (AVERAGE of TOP-CENTER-BOTTOM)) (INGOT (AVERAGE of TOP-BOTTOM)) FINAL PRODUCT

ELEMENT	TEST	TEST INFORMATION	LAB	FRACTURE TOUGHNESS	KS I V IN
C	.013	Chem/Hyd ASTM E 1447-09	RTI Tradco, Washington, Mo	Specimen Size:	
N	.004	Balance Of Chem	RTI Titanium, Niles, OH	ID	Toughness # / Val. Ck
Fe	.19	Tensile/ASTM E 8-13	RTI Tradco, Washington, Mo		
Al	6.04	Bend/ASTM E 290-14	RTI Tradco, Washington, Mo		
V	3.83	Micro/Surface Cont.			
O	.16	ASTM E 3-01/ASTM E 407	RTI Tradco, Washington, Mo		
Y	<30PPM				
RESIDUAL ELEMENTS, EACH < 10%					
RESIDUAL ELEMENTS, TOTAL < 30%					
CHEMIS REPORTED IN % UNLESS OTHERWISE INDICATED					
CHEMISTRY TEST METHODS:					
ALLOY CHEM: SPARK OBS					
O2/N2: ASTM E 1409					
HYDROGEN: ASTM E 1447					
CARBON: ASTM E 1941					
TI	BALANCE				
FINAL PRODUCT	OXY HYD(PPM)	24			

PROPERTIES	ROOM TEMP.	ROOM TEMP.	ROOM TEMP.
ULTIMATE KSI	L 145.8 / 148.8	T 145.7 / 147.0	150.4
YIELD (2%) OFFSET	L 143.0 / 145.2	T 140.0 / 142.8	148.1
% ELONGATION (INCHES)	L 12.5 / 12.8	T 12.8 / 12.8	135.1
% REDUCTION IN AREA	L 4.5 TR / 9.0 TD	T 4.5 TR / 9.0 TD	143.5
BEND 105			13.6
HARDNESS			14.3
BETA TRANSUS			
CREEP			
ULTRASONIC			
HEAT TREAT / TEAT FORGE	PROD. ANNEAL 1450°F 15 MIN. A.C.		
SHIPPING			
NO. OF PIECES	24PC		
WEIGHT (LBS)	566#		
SIZE (IN)	0.0109 X 36.000 X 96.000		
TEST PIECES	X X		

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OTHER DATA: INGOT WAS MELTED AT RTI-NILES, NILES, OHIO USA. PRODUCT CONFORMS TO ALL OTHER TECHNICAL REQUIREMENTS OF THE SPECIFICATION. MATERIAL CHECKED FOR SURFACE CONTAMINATION AND MEETS THE REQUIREMENTS OF THE TEST. (ETCHANT - 2% HF / 98% WATER - 100X, 400X & 500X MAG.). MICROSTRUCTURE IS ACCEPTABLE AND MEETS THE REQUIREMENTS OF THE TEST. (ETCHANT - 2% HF / 98% WATER - 100X MAG.). MATERIAL HAS BEEN TESTED IN ACCORDANCE WITH THE RMI/PWA VENDOR AGREEMENT LABORATORY CONTROL AT SOURCE (LCS). TESTING WAS CONDUCTED IN COMPLIANCE TO MCL MANUAL SECTION F-23. RTI TRADCO, WASHINGTON, MO. ABBG NO. T6069 / RMI CO., NILES, OH. ABBG NO. 72166. MATERIAL IS FREE OF MERCURY CONTAMINATION. MATERIAL HAS NO WELD REPAIR. MATERIAL MELTED & ROLLED IN THE U.S. & COMPLIES WITH DFARS EDITION 1998, SECTION 252-225-7014. SHEETS TESTED # 1 & 13 L&T.
THIS IS TO CERTIFY THAT THE ABOVE TEST RESULTS ARE CORRECT AS CONTAINED IN THE RECORDS OF THE COMPANY AND CONFORM TO ORDER REQUIREMENTS

NAME/TITLE: GEORGE SCHRECKENGOST, CONSULTING AS SENIOR EXECUTIVE ADVISOR
 SIGNED: *[Signature]*
 DATE: 6/23/15

