

5566.3.4



G & S TITANIUM, INC.

4000 EAST LINCOLN WAY
WOOSTER, OHIO 44691
PHONE [330] 263-0564
gs-titanium.com

WIRE DRAWING SPECIALISTS

CERTIFICATE OF TESTS

CUSTOMER. CUST. PO.	5566	DATE G&S MO.	MARCH 10, 2014 52126.10
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MATERIAL DESCRIPTION	WEIGHT POUNDS
.076" X 61" S/L TI 6-4	33.4 LBS.

SPECIFICATIONS	HEAT NUMBER
AMS 4928R	8716136

CHEMICAL COMPOSITION									
AL	6.72	V	3.94	FE	.19	C	.008	O	.19
N	.007	TI	BALANCE	Y	< .005	H	.0014		

HYDROGEN TESTED AT FINISH

MECHANICAL PROPERTIES

- TENSILE STRENGTH [KSI] . 153.7
- YIELD STRENGTH [KSI] .
- ELONGATION % 1" GL . 12.0
- REDUCTION OF AREA % .
- STRESS RUPTURE .
- BETA TRANSUS TEMP. .
- HEAT TREAT TEMP/TIME . VAC. ANN @ 1350 DEG. F. 1 HR. AT TEMP.
- MACRO/MICRO STRUCTURE . MICROSTRUCTURE ACCEPTABLE, NO ALPHA CASE
- EDDY CURRENT INSPECT .
- MILL SOURCE . RTI INTERNATIONAL - USA ATTACHED
- CONDITION SHIPPED . VACUUM ANNEALED, STRAIGHTENED, CLEANED MILL FINISH

THIS STATEMENT IS TO CERTIFY THAT THE ABOVE MATERIAL HAS NOT COME INTO CONTACT WITH MERCURY OR ANY OF ITS ALLOYS OR ANY RADIOACTIVE ELEMENTS WHILE AT G & S TITANIUM. WE ALSO CERTIFY THAT THE ABOVE MATERIAL MEETS ALL REFERENCED SPECIFICATIONS AND CUSTOMER PURCHASE ORDER REQUIREMENTS UNLESS OTHERWISE NOTED.

Dan Eagle

DAN EAGLE / QUALITY ASSURANCE MANAGER

GS-01 004 060110QM

	<input checked="" type="checkbox"/> RMI TITANIUM COMPANY 1000 WARREN AVE. NILES, OHIO 44446	DATE 6-15-07	SALES ORDER NO. 97294	GRADE 6AL-4V	PACKING LIST NO. 80162709
	<input type="checkbox"/> RTI TRADCO 1701 WEST MAIN ST. WASHINGTON, MO 63090	CUSTOMER NAME G & S TITANIUM		CUSTOMER ORDER NO. 24639	
IDENTIFICATION & REFER		INGOT NO	LOT	S-R	SPECIFICATION
MATERIAL NUMBER		8716136	02	00	CHEM ONLY: AMS 4928 REV. R, AMS 4967 REV. H
PRODUCTION ORDER		30107623			

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

ELEMENT	TOP	CENTER	BOTTOM	TEST	TEST INFORMATION	LAB	FRACTURE TOUGHNESS	KSI/IN
C	.008 ✓	.006	.006	TEST			Specimen Size:	
N	.006	.006	.007 ✓	ALL	RMI Titanium, Niles, OH		ID	Toughness # Val Ck
Fe	.19 ✓	.18	.15					
Al	6.60	6.64	6.72 ✓					
V	3.87	3.94	3.83					
O	.19 ✓	.18	.19					
Y	<30 PPM ✓	<30 PPM	<30 PPM					
					RESIDUAL ELEMENTS, EACH <10%			
					RESIDUAL ELEMENTS, TOTAL <30%			
					CHEMISTRY TEST METHODS:			
					ALLOY CHEM: SPARK OES			
					O2/N2: ASTM E 1409			
					HYDROGEN: ASTM E 1447			
					CARBON: ASTM E 1941			
TI	BALANCE							
FINAL	OXY							
PRODUCT	HYD (PPM)	OPP B3A3	21	B3A1 29	(PPM)	H2 TESTED A MID-RADIUS POSITION		

PROPERTIES	L	T					
ULTIMATE KSI	/	/	/	/	/	/	/
YIELD	/	/	/	/	/	/	/
(.2%) OFFSET	/	/	/	/	/	/	/
% ELONGATION	/	/	/	/	/	/	/
(INCHES)	/	/	/	/	/	/	/
% REDUCTION	/	/	/	/	/	/	/
IN AREA	/	/	/	/	/	/	/
BEND 105	/	/	/	/	/	/	/
HARDNESS	/	/	/	/	BEND 180	/	/
					STATIC NOTCH		

BETA TRANSUS DTA: OPPB3A3 1830°F ± 10°F B3A1 1825°F ± 10°F

CREEP	
ULTRASONIC	
HEAT TREAT/	
TEST FORGE	

SHIPPING		OTHER DATA:
NO. OF PIECES	6	INGOT WAS MELTED AT RMI TITANIUM COMPANY, NILES, OHIO. MATERIAL IS
WEIGHT (LBS)	1,407.0#	CAPABLE OF THE ABOVE SPECIFICATIONS IN FINAL PRODUCT. PRODUCT
SIZE (IN)	4.06" X DIA. X R/L	CONFORMS TO THE PURCHASE ORDER REQUIREMENTS.
TEST PIECES	X X	

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: LISA NICKLASH, MANAGER OF CERTIFICATIONS
 SIGNED: *[Signature]* Inv 6380

8716136