FORM 44B REV 3/1/06

TEST REPORT

RTI International Metals, Inc.

☐ RMI TITANIUM COMPANY
1000 WARREN AVE.
NILES, OHIO 44446

☒ RTI TRADCO
1701 WEST MAIN ST.
WASHINGTON, MO 63090

DATE	SALES ORDER NO.	GRADE	PACKING LIST NO.
10/16/08	100325	6AL-4V	80205749

CUSTOMER NAME: RTI INTERNATIONAL METALS, LTD.

CUSTOMER ORDER NO.: RMI - 2641 A

MATERIAL: H.R ANN. & CLD. TI SHEET

SPECIFICATION: CAN 23023 REV.2 AMS 4911L RR9000:SABRE

IDENTIFICATION & REFER	INGOT NO	LOT	S-R
MATERIAL NUMBER	8820821	08	00
PRODUCTION ORDER	30125992		

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

ELEMENT				TEST	TEST INFORMATION LAB
C	.008			Chem/Hyd	RTI Tradco, Washington, Mo
N	.004			Balance Of Chem	RMI Titanium, Niles, OH
FE	.20			Tensile/ASTME 8	RTI Tradco, Washington, Mo
AL	6.26			Bend/ASTME 290	RTI Tradco, Washington, Mo
V	3.86			Micro/Surface Cont.	
O	.15			ASTME 3-01/ASTME 407	RTI Tradco, Washington, Mo
Y	<50PPM			Grain Size/ ASTME 112-01	RTI Tradco, Washington, Mo
					RESIDUAL ELEMENTS, EACH <.10%
					RESIDUAL ELEMENTS, EACH <.30%
					CHEMISTRY TEST METHODS:
					ALLOY CHEM: SPARK OES
TI	BALANCE				02/N2: ASTM E 1409
FINAL PRODUCT	OXY				HYDROGEN: ASTM E 1447
	HYD(PPM)	23			CARBON: ASTM E 1941

FRACTURE TOUGHNESS KSI √ IN

Specimen Size: ID	Toughness #	Val. Ck.

PROPERTIES						
ULTIMATE KSI	L	146.2 / 148.0	/	/	/	/
	T	146.2 / 147.9	/	/	/	/
YIELD (.2%) OFFSET	L	141.8 / 143.6	/	/	/	/
	T	140.3 / 142.1	/	/	/	/
% ELONGATION (INCHES)	L	11.2 / 11.4	/	/	/	/
	T	11.5 / 11.9	/	/	/	/
% REDUCTION IN AREA	L	/	/	/	/	/
	T	/	/	/	/	/
BEND 105	L	4.5 TR /	/	BEND 180	/	/
	T	4.5 TR /	/	STATIC NOTCH	/	/
HARDNESS						
BETA TRANSUS						
CREEP						
ULTRASONIC						
HEAT TREAT/ TEAT FORGE		PROD. ANN. 1450°F 15 MIN. A.C.				

SHIPPING	
NO. OF PIECES	10PCS
WEIGHT (LBS)	191#
SIZE (IN)	.0236 X 40.200 X 115.000
TEST PIECES	X X

OTHER DATA:
INGOT WAS MELTED AT RMI TITANIUM COMPANY, NILES, OHIO USA. MATERIAL IS CAPABLE OF MEETING THE REQUIREMENTS OF THE SPECIFICATIONS. MATERIAL PRODUCED IN ACCORDANCE WITH RMI'S ISO 9001:2000 & AS9100B APPROVALS. AIRBUS UK APPROVAL AUK/SA/30260. AIRBUS/MAT/CON/333. PRODUCT CONFORMS TO ALL OTHER TECH. REQUIREMENTS OF THE SPEC. MATERIAL CHECKED FOR SUR. CONT. & MEETS THE REQUIREMENTS OF THE TEST. (ETCHANT - 2% HF / 98% WATER - 100X, 400X & 500X MAG.). MICROSTRUCTURE IS ACCEPTABLE & MEETS THE REQUIREMENTS OF THE TEST. (ETCHANT - 2% HF / 98% WATER - 100X MAG.). 6/13 RA. MICRO GRAIN SIZE IS 12 OR FINER. SHEETS TESTED # 5 & 10 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

APPROVED CERTIFICATE

SERIAL NO. TO2016

NAME/TITLE: GEORGE SCHRECENGOST, SENIOR EXECUTIVE ADVISOR

SIGNED: [signature]

For and on behalf of RTI International Metals Inc.

DATE: 10/28/10

This certificate shall not be reproduced except in full without written approval of the RTI International Metals, Inc. lab at which it was prepared. The recording of false, fictitious, or fraudulent statements or entries on this documents may be punished as a felony under federal law.

TMS Titanium Sample Cert

FORM 44B REV 3/1/00

TEST REPORT

RTI International Metals, Inc.

☐ RMI TITANIUM COMPANY, 1000 WARREN AVE., NILES, OHIO 44446

☒ RTI TRADCO, 1701 WEST MAIN ST., WASHINGTON, MO 63090

DATE	SALES ORDER NO.	GRADE	PACKING LIST NO.
10/16/08	100325	6AL-4V	80205749

CUSTOMER NAME: RTI INTERNATIONAL METALS, LTD.

CUSTOMER ORDER NO.: RMI - 2641 A

MATERIAL: H.R. ANN. & CLD. TI SHEET

SPECIFICATION: CAN 23023 REV.2 AMS 4911L RR9000:SABRE

IDENTIFICATION & REFER	INGOT NO	LOT	S-R
MATERIAL NUMBER	8820821	08	00
PRODUCTION ORDER	30125992		

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

ELEMENT	
C	.008
N	.004
FE	.20
AL	6.26
V	3.86
O	.15
Y	<50PPM
TI	BALANCE
FINAL PRODUCT OXY	
FINAL PRODUCT HYD(PPM)	23

TEST INFORMATION	
TEST	LAB
Chem/Hyd	RTI Tradco, Washington, Mo
Balance Of Chem	RMI Titanium, Niles, OH
Tensile/ASTME 8	RTI Tradco, Washington, Mo
Bend/ASTME 290	RTI Tradco, Washington, Mo
Micro/Surface Cont.	
ASTME 3-01/ASTME 407	RTI Tradco, Washington, Mo
Grain Size/ ASTME 112-64	RTI Tradco, Washington, Mo
	RESIDUAL ELEMENTS, EACH <.10%
	RESIDUAL ELEMENTS, EACH <.30%
	CHEMISTRY TEST METHODS:
	ALLOY CHEM: SPARK OES
	O2/N2: ASTM E 1409
	HYDROGEN: ASTM E 1447
	CARBON: ASTM E 1941

FRACTURE TOUGHNESS MPAV M

Specimen Size:

ID	Toughness #	Val. Ck.

PROPERTIES

ULTIMATE MPA	L	1008 / 1020	/	/	/	/
	T	1008 / 1019	/	/	/	/
YIELD MPA (.2%) OFFSET	L	977 / 990	/	/	/	/
	T	967 / 979	/	/	/	/
% ELONGATION (INCHES)	L	11.2 / 11.4	/	/	/	/
	T	11.5 / 11.9	/	/	/	/
% REDUCTION IN AREA	L	/	/	/	/	/
	T	/ 0	/	/	/	/
BEND 105	L	4.50 / 0.00	/	BEND 180	0.00 /	/
	T	4.50 /	/	STATIC NOTCH	0.00 /	/

HARDNESS

BETA TRANSUS

CREEP

ULTRASONIC

HEAT TREAT/ TEAT FORGE: PROD. ANN. 788°C 15 MIN. A.C.

SHIPPING	
NO. OF PIECES	10PCS
WEIGHT (Kg)	86.82
SIZE (mm)	0.60 X 1021.08 X 2936.24
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

OTHER DATA:

INGOT WAS MELTED AT RMI TITANIUM COMPANY, NILES, OHIO USA. MATERIAL IS CAPABLE OF MEETING THE REQUIREMENTS OF THE SPECIFICATIONS. MATERIAL PRODUCED IN ACCORDANCE WITH RMI'S ISO 9001:2000 & AS9100B APPROVALS. AIRBUS UK APPROVAL AUK/SA/50260. AIRBUS/MAT/CON/333. PRODUCT CONFORMS TO ALL OTHER TECH. REQUIREMENTS OF THE SPEC. MATERIAL CHECKED FOR SUR. CONT. & MEETS THE REQUIREMENTS OF THE TEST. (ETCHANT - 2% HF / 98% WATER - 100X,400X & 300X MAG.). MICROSTRUCTURE IS ACCEPTABLE & MEETS THE REQUIREMENTS OF THE TEST. (ETCHANT - 2% HF / 98% WATER - 100X MAG.). 6/13 RA. MICRO GRAIN SIZE IS 12 OR FINER. SHEETS TESTED # 5 & 10 L&T.

APPROVED CERTIFICATE

SERIAL NO. TO2016

NAME/TITLE: GEORGE SCHREGENGOST, SENIOR EXECUTIVE ADVISOR

SIGNED: G E Schregengost

For and on behalf of RTI International Metals Inc.

DATE:

This certificate shall not be reproduced except in full without written approval of the RTI International Metals, Inc. lab at which it was prepared. The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under federal law.

TMS Titanium Sample Cert

FORM 44B REV. 3/1/06

TEST REPORT

RTI International Metals, Inc.

☐ RMI TITANIUM COMPANY
1000 WARREN AVE.
NILES, OHIO 44446

☒ RTI TRADCO
1701 WEST MAIN ST.
WASHINGTON, MO 63090

DATE	SALES ORDER NO.	GRADE	PACKING LIST NO.
10/16/08	100325	6AL-4V	80206749

CUSTOMER NAME	CUSTOMER ORDER NO.
RTI INTERNATIONAL METALS, LTD.	RMI - 2641 A

MATERIAL	H.R ANN. & CLD. TI SHEET
SPECIFICATION	CAN 23023 REV.2 AMS 4911L RR9000:SABRE

IDENTIFICATION & REFER	INGOT NO	LOT	S-R
MATERIAL NUMBER	8820821	08	00
PRODUCTION ORDER	30125992		

REISSUE INFORMATION

REASON	DATE	NAME - SIGNATURE
REISSUED TO ADD AMS 4911L & RR9000:SABRE	10/28/10	GEORGE CHUCE GOST, SENIOR EXECUTIVE ADVISOR

TMS Titanium Sample Cert