

Chemical composition:

50	Cert	C. Tital.	Sam	3,		Kanin,	Mple	. <	NS	iling
	3	No wi	um	96 Co.	THS	, IW)g, (eit	GAN.	arri s
-	Cell	"S Ita.	San	Co.		Kanic	Sauble		Mo	anium
Certificate No. 477	7.1.5W10	M.	IIIII.	aple	TMS	Muis		Cell	S	75
Customer: TMS	C (8)	- Killo	60	<i>.</i>		" VICE	olk	,	(b)	ill.
Purchase Order #		3.5	~	C(0)	·	Illo	MA	A .		alle
Heat No.: 0-28-06	682	M.	WILL	.01	5	•	20		X	Ko.
Quantity: 5 lbs	X		U	2010	1W	7.		Co	5	C
50		110					.0	1		
			-0		X				M.	
alical compo	Gition	5	50	, _ (e		. Kallie	MPle		(h.	Cill.
Chemical compo		NS	50	, Ce	Fe	AI	Carple	Resid	luals,	taniul.
Chemical compo	esition:	NS I	SO	The Co	Fe G		Sav	each/	total 🔨	itaniui.
Element		O 0.18	0.030	H 0.015	0.22	6.75	4.50	each/ <0.05	total <0.20	itanium.
Spec max, %	C 0.05	0.18					3.50	each/ <0.05 n/a	total <0.20 n/a	itanium.
Spec max, % Spec min., %	0.05 0.00	0.18	0.030	0.015	0.22	6.75		each/ <0.05	total <0.20	itanium.
Spec max, % Spec min., % Actual, %	C 0.05	0.18	0.030	0.015 0.000	0.22	6.75 5.50	3.50	each/ <0.05 n/a	total <0.20 n/a	itanium
Spec max, % Spec min., % Actual, % Y<0.001% Balance - Titaniul	0.05 0.00 0.02	0.18 0.12 0.12	0.030	0.015 0.000	0.22	6.75 5.50	3.50	each/ <0.05 n/a	total <0.20 n/a	itanium itanium
Spec max, % Spec min., % Actual, % Y<0.001%	0.05 0.00 0.02	0.18 0.12 0.12	0.030	0.015 0.000	0.22	6.75 5.50	3.50	each/ <0.05 n/a	total <0.20 n/a	itanium

Mechanical Properties:

Mechanical Pr	operties:	ins	Coll	Cliffo So.	Cert C	ita.
50	Tensile Strength	Yield Strength	Elongation %	Reduction of Area, %	Bend Test	dillo
Spec max.		63		Life Cigo	<u> </u>	. KOLL
Spec min.	ole Me		Co	n/a	n/a	
Actual	n/a	n/a	o n/a	11/4	To the)
5	awn, straightened	CX2	N X	WALL!	161 111	Uis

Based on chemical composition and mechanical properties (if applicable), the material confirms to the requirements of the following specifications: ERTi-5 per AWS A5.16-07 & AMS-4954H (chemistry only)

Material did not come into contact with Mercury during products: ikaning cample Cert MS litaning

Ary fre and in the strains of 29-Nov-21 Titanium Sample Cert

Form GT-8242 Rev. 0

NS Titanium Sami Cital. G

G&S Cert INS Titanium:

TITANIUM, INC.

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

OF TESTS 4000 EAST LINCOLN WAY WOOSTER, OHIO 44691 PHONE [3301

CERTIFICATE OF TESTS

_	G&S TITANIUM INC.
/	4000 EAST LINCOLN WAY
	G&S WOOSTER, OHIO 44691 PHONE [330] 263-0564 gs-titanium.com
1	gs-titanium.com
	Co The Call
	WIRE DRAWING SPECIALISTS
	CERTIFICATE OF TESTS
4	CUSTOMER. DATE . APRIL 23, 2012 G&S MO. 48128
	CUST. PO. G&S MO. 40123
	WEIGHT/QUANTITY
	MATERIAL DESCRIPTION
4	.063" X 36" S/L TI 6AL-4V 361.75 LBS

MATERIAL DESCRIPTION

WEIGHT/QUANTITY

	-		
.063"	X	36"	S/L

SPECIFICATIONS

HEAT NUMBER

MS Titanium

NS Titanium

CHEMICAL COMPOSITION

M II	.063" X 36" 5/L	2 - 6		
I. alipi	SPECIFICATION	IS(I)	HEAT NUMBER	THO C
Titia	AWS A5.16-07 ERTI-5	, AMS 4954H	0-28-06682	0° 15' 111'
als in	Co. Ch.	CHEMICAL COMPOSITIO	N ANIE APIE	LIM. Will
Lip Gin	de Ma	(8)	Alio Collins	COL CITIES
K.Ha.	C *.02 FE *.18	H *.0016 N	*.004 0 *.	
5	AL 6.27 V 3.83	Y < .001	· jull offe	Kh. inu.
Mi W	8 5.	500	Cital Call.	t stall
, AM	40,	10° C	5	C8, C1,
C Tills	CO TOTAL DES	MEMED	10 10	The im
als .	()() ()	METER	- Tital MP	anit
(ii)	S 18 1	MECHANICAL PROPERTI	50	cert Litte
THO!	TENSILE STRENGTH [KSI].	:1711. 16 ×1		S' S'
5	YIELD STRENGTH [KSI]. ELONGATION % IN 4D	i, Wb, * ,	anile applications	, Lh, in
M I	REDUCTION OF AREA %	coll coll	Litia Sulli	t xall
\approx (1)	STRESS RUPTURE BETA TRANSUS TEMP.		S	Co, Life
.x'0	HEAT TREAT TEMP/TIME . MACRO/MICRO STRUCTURE .	rilli rolle 1	in in ?	e as
.6	ROCKWELL HARDNESS	VSMPO - RUSSIA	is all	. Lip gill.
The is	MELT SOURCE CONDITION SHIPPED	- a manufact out a TCU	TENED, CLEANED, FT	COE
	COMPTITUE	CONVERSION OF CUS'	LOWER SOLLTING MY	ELTITIO

^{*} TESTED AT FINISH DIAMETER

VSMPO - RUSSIA AS DRAWN, STRAIGHTENED, CLEANED, FTOE CONVERSION OF CUSTOMER SUPPLIED MATERIAL

rank Cent TINS Titanius 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. WE ALSO CERTIFY THAT THE ABOVE MATERIAL MEETS ALL REFERENCED SPECIFICATIONS AND CUSTOMER PURCHASE ORDER REQUIREMENTS - Sample UNLESS OTHERWISE NOTED

DAN EAGLE / QUALITY ASSURANCE MANAGER

DAN E GS-01 004 060110QM