

Fort Wayne Metals Research Products Corp

PHN 260.747.4154 9609 Ardmore Avenue
 FAX 260.747.0398 Fort Wayne, IN 46809

fwmetals.com



F-QM-50
 rev. November 04, 2018

FORT WAYNE METALS
 Turning knowledge into solutions.

CERTIFICATION OF COMPLIANCE

Certification: 1351862-1	Manufactured Date: 02/26/2021	Batch: 16241404	<i>Kristin Davis</i>
Customer: TNS Korea		Sales Order: 1108591	
Customer Part: FWMTNS001HR004		Purchase Order: TNS #200221-005 6of9	Certified By Kristin Davis Inspector
Quantity Shipped: 208.653 kg (374 ea)			26 February, 2021 Date
Finish: Centerless Ground & Polished, Chamfer			
Alloy: Ti-6Al-4V ELI		Condition: Annealed	
Size: 8 mm x 2500 mm			
Specification: ASTM F136	The material in this shipment has been certified to comply to the above specification		

RAW MATERIAL CHARACTERISTICS

Heat Number: 8T63873
Batch Description: Coil

Aluminum (Al) (%)	5.9700	Balance	Titanium
Carbon (C) (%)	0.0205	Cobalt (Co) (%)	< 0.1000
Hydrogen (H) (%)	0.0022	Iron (Fe) (%)	0.1800
Nitrogen (N) (%)	0.0065	Other Single Trace (%)	< 0.1000
Oxygen (O) (%)	0.1250	Total Trace Elements (%)	< 0.3000
Vanadium (V) (%)	3.9350	Yttrium (Y) (%)	< 0.0010
RM Country of Origin	USA	RM DFARS Compliant	Compliant
Ultrasonic Tested	Yes		

FINISHED GOOD MATERIAL CHARACTERISTICS

Size Tolerance: Diameter +0.00000 / -0.00889 mm	Discrete Part Length +49.9999 / -49.7459 mm
Batch Description: Centerless Ground and Polish	

Diameter (mm)	7.99719	Discrete Part Length (mm)	2,527.3000
Breakload (kg)	5,267	Tensile Strength (mpa)	1,028
Elongation (%)	17.4	4D Elongation (%)	17.4
Yield Load (kg)	4,466	Yield Strength (mpa)	872
Cold Work (%)	37.2	Hydrogen (H) (%)	0.0030
Beta Transus (°C)	971.0000	MetLab Report Number	21-01-71868
Microstructure	A1	Rockwell Hardness C (ea)	34.00
Reduction of Area (%)	49.9		

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 CERTIFIES THAT THIS IS COPY OF THE ORIGINAL
 MILL TEST REPORT NOW ON FILE RECEIVED AND INSPECTED

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2021-09-02

BY

Nathan Kwon
 NATHAN KWON / CEO

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TESTING PROPERTIES

Crosshead Speed (mm/min)	1.2446	Secondary Crosshead Speed (mm/min)	25.4000
Gauge Length (mm)	50.8000		

Batch Description: **Eddy Current Tested**

Eddy Current Test Pass

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Nathan Kwon
NATHAN KWON / CEO