ACME METALS

Manufacturer

ACME Metal Works GmbH

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Customer

European Research Institute

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Digital Material Passport

ID	DMP-METAL-005	*Version*	1.0.0
Issue Date	2025-05-17	*Certificate Type*	EN 10204 3.1

Business Transaction

Order		**Delivery**	
Order ID	PO-23456	*Delivery ID*	DN-65432
Position	1	*Position*	1
Date	2025-05-01	*Date*	2025-05-16
Quantity	1000 kg	*Quantity*	1000 kg

Product Information

Product Name	Titanium Alloy Ti-6Al-4V ELI
Batch ID	T-65432-01
Heat Treatment	Annealed
Surface Condition	Machined
Production Date	2025-05-15
Country of Origin	DE

Product Norms

Designation	ASTM F136 (2022)

Material Designations

System	UNS
Designation	R56401

Product Shape

Form	RoundBar
Length	3000 mm
Diameter	30 mm

Chemical Analysis

Heat Number	T-65432
Melting Process	VAR
Casting Date	2025-05-14
Sample Location	Product

Elements

Symbol	**Ti**	**Al**	**V**	**Fe**	**O**	**C**	**N**	**H**
Unit	%	%	%	%	%	%	%	%
Min	-	5.5	3.5	-	-	-	-	-
Max	-	6.5	4.5	0.25	0.13	0.08	0.05	120
Actual	89.32	6.02 ± 0.05	3.95 ± 0.03	0.18	0.11	0.026	0.012	35

Mechanical Properties

Property	*Symbol*	*Actual*	*Minimum*	*Maximum*	*Method*	*Status*
Fatigue Test					ASTM E466	✓
Notch Sensitivity		0.85 - 0.92			Internal Method TS-5432	✓

Physical Properties

Property	*Symbol*	*Actual*	*Target/Min*	*Maximum*	*Method*	*Status*
Density		4.43 ± 0.01 g/cm³	4.43		ASTM B311	✓

Supplementary Tests

Property	*Actual*	*Target/Min*	*Maximum*	*Method*	*Status*
Microstructure Examination	Equiaxed alpha with intergranular beta	-		ASTM E407	✓
Ultrasonic Inspection	Yes No indications greater than reference standard	-		ASTM E2375	✓
Surface Quality Assessment	Class 1 - Medical Grade	-		Visual Inspection per ASTM F136	✓
Alpha Case Depth	5 µm	-	25	Microhardness Traverse	✓
Grain Size Distribution	8 - 10 ASTM No.	7 - 12		ASTM E112	✓
Hardness Profile	HV	-		ASTM E384	✓

Validation

We hereby certify that the material described above has been manufactured and tested in accordance with ASTM F136 and meets all requirements for surgical implant applications.

Validated By

Name	*Title*	*Department*	*Date*
Dr. Markus Weber	Head of Metallurgy	Research & Quality	2025-05-17

Data schema maintained by Material Identity. https://schemas.materialidentity.org/metals-schemas/v0.0.1/schema.json