

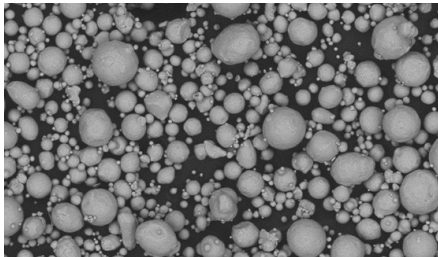
TruForm™ Metal Powders for Additive Manufacturing

TruForm™ 64 Metal Powder

TruForm™ 64 and TruForm™ 64ELI exhibit high strength, low density, and excellent corrosion resistance. Ti6Al4V is the most widely used titanium alloy, and powder is available in standard Grade 5 and Grade 23 (ELI) as well as others. Parts produced are commonly found in the aviation, automotive, and medical industry.

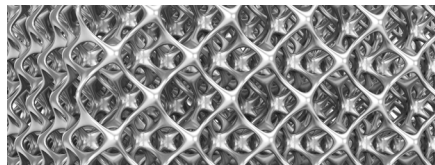
Particle Size Distribution

Powders are available in a wide variety of particle size distributions and can be customized for your applications.



TruForm™ Metal Powders for All Additive Manufacturing Processes Including:

- Direct Metal Deposition (DED)
- Direct Metal Laser Sintering (DMLS)
- Electron Beam Melting (EBM)
- Laser Metal Deposition (LMD)
- Selective Laser Melting (SLM)



Typical Mechanical Properties (contact us for additional property data)

Ti-64 Grade 5

Ti-64 Grade 23

Room Temperature	Typical HIP Properties	HT Min. ASTM B348	Typical HIP Properties	HT Min. ASTM F136
Tensile Strength (XY)	1020 ± 40 MPa 148 ± 6 ksi	895 MPa 130 ksi	970 ± 40 MPa 141 ± 6 ksi	895 MPa 125 ksi
	1000 ± 40 MPa 145 ± 6 ksi		960 ± 50 MPa 139 ± 7 ksi	
Tensile Strength (Z)	943 ± 50 MPa 137 ± 7 ksi	828 MPa 120 ksi	920 ± 50 MPa 133 ± 7 ksi	795 MPa 115 ksi
	925 ± 50 MPa 134 ± 9 ksi		892 ± 50 MPa 129 ± 9 ksi	
Elongation (XY)	12 ± 2%	10%	14 ± 2%	10%
	13 ± 3%		15 ± 3%	

Element	Typical Composition
Ni	Bal
Al	5.50 - 6.50
V	3.50 - 4.50
Fe	0.25 Max
C	0.08 Max
O*	0.2 Max
O**	0.13 Max
N	0.05 Max
H	0.015 Ma
Others	0.10 Max
Total Others	0.40 Max

*Grade 5
** Grade 23



Powder Atomization Capabilities

Praxair is a worldwide resource for fine and spherical, gas-atomized powders and a leader in vacuum induction melt argon gas atomization (VIM-AGA) technology. We operate 5 VIM AGA units and pour more than 3 million lbs of powder each year.

AM Quality Lab

Our quality laboratory is registered as an ISO-9001:2008, Nadcap AS7101, and AS9100 facility. We offer 100 percent lot inspection along with a certificate of analysis that details the variety of quality tests we conduct from our state-of-the-art facility to ensure your printed products meet your performance and surface finish specifications.



Additive Manufacturing Lab

We are printing parts every day with our AM metal powder to ensure that layer by layer, you are getting a premium product that can produce products to your exacting specifications.



A global leader in metal powders for 50 years, aerospace—grade is our benchmark.

With five powder atomizers, a fully-outfitted AM quality lab, an R&D lab complete with a metal 3D printer, and a staff of credentialed experts...

Praxair is the only partner you need to deliver on the promise of metal AM

TruForm™
Metal Powders



CONTACT US

Contact our technical sales team for guidance in selecting a material, requesting an alloy not listed here, or for additional details.

praxairsurfacetechologies.com/am

Contact us at: 1-317-240-2650 or
praxair_am@praxair.com

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