

Material Specifications

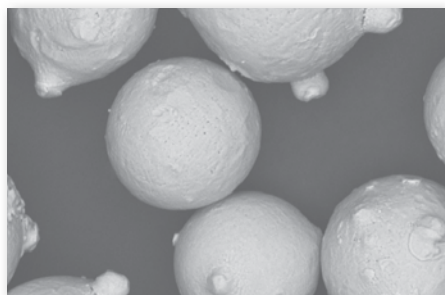


TruForm™ 718 Metal Powder

Our nickel metal powders for additive manufacturing flow easily and deposit evenly. The result? Successive layers with consistent density and uniform build rates. Ultimately, this helps your products meet the mechanical, performance, and final part specifications of 3D printed parts.

Particle Size Distribution

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



Typical Mechanical Properties (contact us for additional property data)

Room Temperature	Heat Treat per AMS 5662(5)	As Built	Minimum ASTM F3055-14
Tensile Strength (XY)	211 ksi (1450 MPa)	157 ksi (1080 MPa)	142 ksi (980 MPa)
Tensile Strength (Z)	192 ksi (1320 MPa)	139 ksi (958 MPa)	133 ksi (920 MPa)
Yield Strength (XY)	168 ksi (1160 MPa)	116 ksi (800 MPa)	92 ksi (635 MPa)
Yield Strength (Z)	159 ksi (1100 MPa)	90 ksi (623 MPa)	87 ksi (600 MPa)

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)



Element	Typical Composition
Aluminum (Al)	0.03 - 0.70
Bismuth (Bi)	0.00005 max
Boron (B)	0.006 max
Calcium (Ca)	0.01 max
Carbon (C)	0.02 - 0.08
Chromium (Cr)	17.00 - 21.00
Cobalt (Co)	1.00 max
Copper (Cu)	0.30 max
Iron (Fe)	15.00 - 21.00
Magnesium (Mg)	0.01 max
Manganese (Mn)	0.35 max
Molybdenum (Mo)	2.80 - 3.30
Nickel (Ni)	50.00 - 55.00
Niobium (Nb) + Tantalum (Ta)	4.75 - 5.50
Phosphorus (P)	0.015 max
Selenium (Se)	0.005 max
Silicon (Si)	0.35 max
Sulfur (S)	0.015 max
Tantalum (Ta)	0.50 max
Titanium (Ti)	0.75 - 1.15

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

CONTACT US

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

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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.



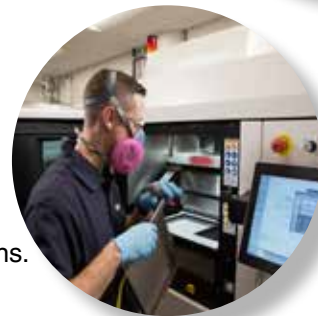
AM Quality Lab

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.



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