BUILD BOLDLY
WITH 6K POWDERS

BUILD WITH INFINITE OPTIONS
BUILD THE HIGHEST PERFORMANCE PARTS
BUILD SUSTAINABLY FOR THE CIRCULAR ECONOMY

6K ADDITIVE
IF YOU CAN THINK IT, WE CAN MAKE IT

DESIGN OPTIMALLY FOR ANY PLATFORM
At 6K, 100% of powder PSD in a production run can be tailored to any Additive Manufactures (AM) platform including powder bed, EBM, and Binder Jet, direct energy deposition and cold spray, plus PM processes like MIM and HIP.

DESIGN WITH AN UNPRECEDENTED RANGE OF MATERIALS
Any metal or alloy that is machined can now become a feedstock for 6K’s premium powders. Design a new alloy that cannot be realized through conventional melt approaches.

IMPROVE PROJECT ROI, ADOPT NEW BUSINESS MODELS
Rejuvenate used powders. Control & optimize your supply chain, by transforming “waste” from your subtractive manufacturing processes into powder for AM.

BUILD WITH INFINITE POSSIBILITIES

THE PERFORMANCE OF UNIFORM PLASMA
6K Additive continues to expand the portfolio of best in class spherical, no satellite powders in any powder size distribution.

INCONEL 718
INCONEL 625
TI-6Al-4V
MOLYBDENUM
RHENIUM
STAINLESS STEEL 17-4
ALUMINUM AlSiMg
TANTALUM
TUNGSTEN
8% YTTRIA STABILIZED ZIRCONIA
UNIMELT®: THE WORLD’S MOST CAPABLE PLASMA PRODUCTION TECHNOLOGY

The most advanced production plasma system in the world, UniMelt uses high-frequency microwave plasma to produce advanced materials across a series of industries and applications.

THE POWER OF UNIMELT GOES FAR BEYOND ADDITIVE MANUFACTURING

- Batteries & Storage
- Specialty Ceramics
- Lighting & Displays
- Aerospace & Defense

UNIQUELY 6K

Unimelt is Not Gas Atomization (GA) or Plasma Atomization (PA). The world’s only microwave-based plasma metal powder production systems.

THE MOST UNIFORM & PRECISE PLASMA IN THE WORLD

Unimelt®: THE WORLD’S MOST CAPABLE PLASMA PRODUCTION TECHNOLOGY

AT 6000 DEGREES, UNIMELT IS CAPABLE OF PROCESSING CERAMICS, THERMOPLASTICS, METALS, AND ALLOYS

- Highly-uniform plasma production zone
- Continuous, zero-contamination process
- 99%+ efficiency (microwave to plasma)
- Inert, reducing, and oxidizing atmospheres

UNIMELT MICROWAVE PLASMA SYSTEM

THE MOST UNIFORM & PRECISE PLASMA IN THE WORLD
BUILD WITH CONFIDENCE USING 6K POWDERS

HIGHEST PERFORMING POWDERS AS BACKED BY STRINGENT QUALITY CONTROL

ZERO POWDER POROSITY
Unlike competitive technologies, 6K’s process delivers fully dense, highly-spherical powders without porosity.

100% YIELD & TUNABLE PSD
6K’s UniMelt process can deliver 100% yield into the target PSD for a sustainable process delivering exactly what our partners require.

HIGH SPHERICITY & NO SATELLITES
6K process delivers the highest-quality powder with high-sphericity void of any satellites.

HIGH FLOW AND SPREADABILITY
6K’s process produces powders with high flowability and spreadability, ensuring maximum production in an AM system.

COMPREHENSIVE POWDER TEST & QC
Highest performing powders backed up by rigorous quality control: micro-CT, gas analysis, ICP, XRD, SEM, EDS.

PART PRODUCTION & TESTING
Meeting or exceeding ASTM and ASM standards

POWDER TRACKING & PREPARATION
Industry-standard methods for powder blending, lot control, and packaging.
HIGH VOLUME 6K PRODUCTION SCALE PLASMA SYSTEMS

Highly reliable premium powder production

THE WORLD’S MOST CAPABLE PLASMA PRODUCTION SYSTEMS, ENGINEERED FOR:

- Up to 100 tons per year
- Continuous feed process not limited by wire or ingot feedstock
- Capable of processing ceramics, metals, alloys, and thermoplastics
- Highly-uniform plasma zone
- High uptime systems, recipe-driven, remote operation
- Nano through 100s microns

6K ADDITIVE’S PRODUCTION TEAM HAS EXTENSIVE EXPERIENCE IN ALLOYS, METAL RECLAMATION, AND POWDERS PRODUCTION

- ISO9001 facility
- AS9100 (3Q20)
- Over 1 million lb titanium per year sold into premium alloying for aero, medical, and auto industries
- 80,000 sq ft metals conversion, alloys products, and AM powder production
- 40,000 sq ft new state-of-the-art powder production (1Q20)
BUILD SUSTAINABLY
Better powders, better parts, with a better business model—all done sustainably.

POWDER PRODUCTION EFFICIENCIES
6K produces powders in a dramatically more sustainable process than conventional powder processes.

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<th>6K GA</th>
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<th>6K ICP</th>
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<tbody>
<tr>
<td>5X Lower INERT GAS USAGE</td>
<td>~100%</td>
<td>20%-30%</td>
<td>4-5X greater</td>
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<tr>
<td>4-5X greater POWDER YIELD FOR LPBF (15 TO 45 UM)</td>
<td>2X greater</td>
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<tr>
<td>20%-30%</td>
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<td>40%-45%</td>
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DRIVING THE CIRCULAR ECONOMY

- USE CERTIFIED CHEMISTRY
- MACHINING SCRAP
- USE SUPPORT STRUCTURES
- REJUVENATE USED POWDERS
- PREMIUM POWDERS

USE MATERIAL FROM FAILED PRINTS

Inductively Coupled Plasma (ICP)
At 6K, we’re breaking the bounds of chemistry to develop engineered materials into revolutionary products that will advance industries across additive manufacturing, renewable energy, aerospace, consumer electronics, and more. With 6K’s advanced microwave plasma technology and sustainable processes, you can bring your innovations from ideation to development at speeds never before possible. We tailor-make the purest, best-in-class materials all with sustainability as a focus regardless of the industry we serve.

At 6K, we’ve assembled a team of material, process, and production experts to deliver materials for today, tomorrow, and beyond. Whether it’s in our innovation labs in Massachusetts or our production facility in Pennsylvania, our patented 6K technology and sustainable processes enable you to convert an infinite combination of materials that accelerate ideation and enable limitless possibilities.

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