

# ALUMINUM 6061

IS FINALLY 3D PRINTABLE AND

# AVAILABLE

AL6061-RAM2%

(As built surface finish)

**E**lementum 3D is pleased to present AL6061-RAM2%, our newest 3D printable material. Elementum 3D's novel reactive additive manufacturing (RAM) technology has enabled introduction of an aluminum alloy that achieves properties comparable to wrought 6061-T6 on existing laser powder bed fusion equipment. Key advantages of this material include incredible print speed for low production costs, excellent surface finish, a desirable combination of properties, and the familiarity of 6061.

Aluminum 6061 is one of the most commonly used aluminum alloys and is widely used in aerospace, automotive, defense, and other industries. Designers, engineers and manufacturers are very familiar with 6061 and have expressed a clear desire for this material to be available in additive manufacturing (AM). Elementum 3D's mission is to expand the metal AM materials library; and importantly, new AM materials such as 6061 will enable designers, engineers and manufacturers to innovate with the design freedom of additive manufacturing.

Elementum 3D's printed AL6061-RAM2% meets customers demand for a versatile and light weight material that has excellent printability, strength, and ductility. In fact, AL6061-RAM2% meets or exceeds typical wrought 6061-T6 strengths while maintaining excellent ductility for an AM printed material. The printability and excellent properties of AL6061-RAM2% stem from improved microstructures, made possible by our patent pending RAM technology.

## Elementum 3D Printed Aluminum 6061 vs. Wrought 6061

Properties	Elementum 3D AL6061-RAM2%	Wrought 6061-T6
Density (g/cc)	2.73	2.70
*Ultimate tensile strength (MPa)	315	310
**Yield strength (MPa)	285	276
Elongation (%)	11-14	12-17
**Modulus of elasticity (GPa)	76	70

\*ASTM E8, \*\*ASTM E494-15

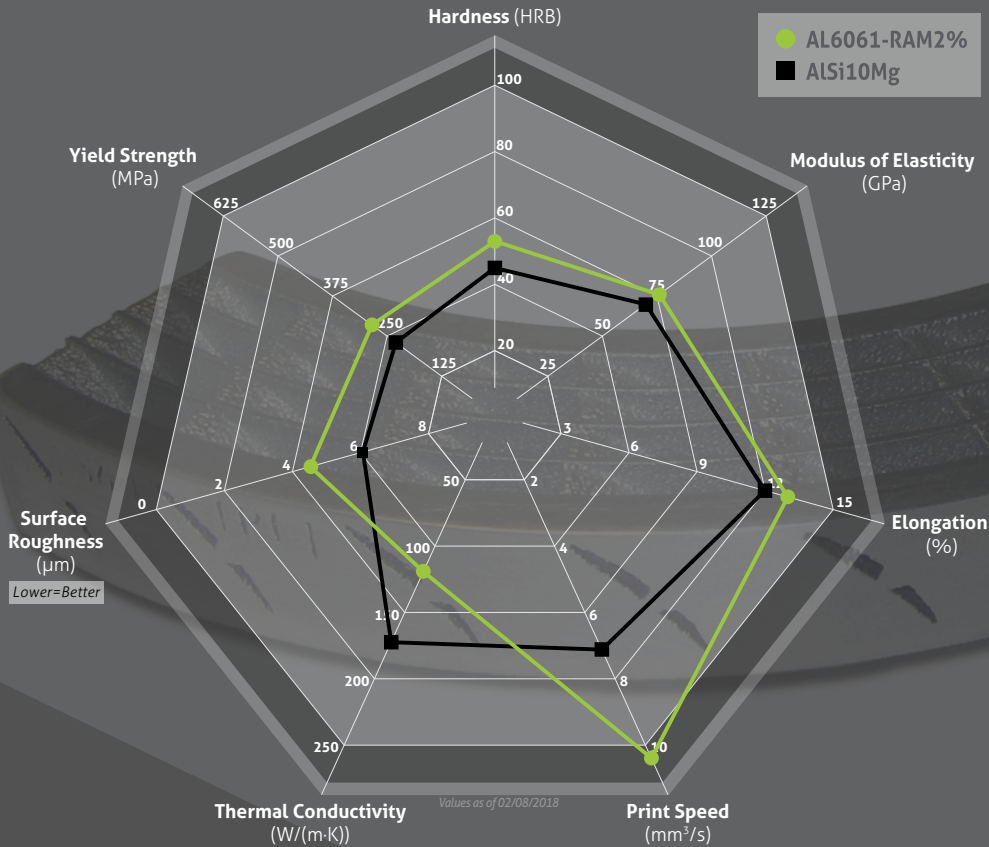
ELEMENTUM



Your AM Materials Expert

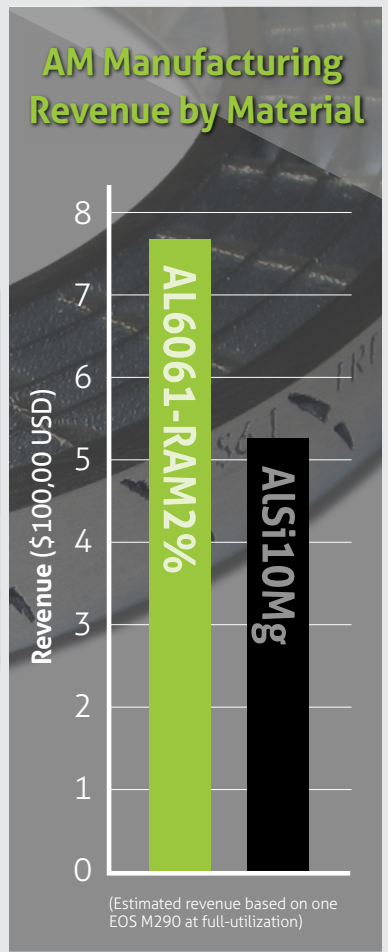
Although familiarity and excellent properties are important advantages, print speed is where this material really shines. AL6061-RAM2% is one of the most cost-effective metals AM materials because of its high deposition rate. On an EOS M290 printer, AL6061-RAM2% achieves a deposition rate of 10.4 mm<sup>3</sup>/sec which is a 44 percent faster rate than the next fastest material for this printer. Print speed is king in AM and faster print speed directly results in reduced production costs and increased revenue. Cost effective materials with good performance are critical to unleashing the next innovative advancement in manufacturing.

### 3D Printed Aluminum Properties Comparison (Elementum AL6061-RAM2% vs. AlSi10Mg)



Performance, efficiency, and familiarity are sweet music to the ears of the manufacturing world and Elementum 3D is in the forefront of producing new metal alloys and composites to meet the demands of designers and manufacturers. Elementum 3D was founded to enhance lives by introducing new AM materials to innovative people so they can turn their big ideas into reality. Find us on the web at [elementum3d.com](http://elementum3d.com) to learn more about how we can inspire your next big idea.

**Switch**  
to **AL6061-RAM2%**  
**AND**  
**INCREASE REVENUE**  
**\$237K/yr**



**ELEMENTUM**



Your AM Materials Expert  
[www.elementum3d.com](http://www.elementum3d.com)