

Copper-Graphene Powder

# AROS Cu<sup>®</sup> AM Grade 6

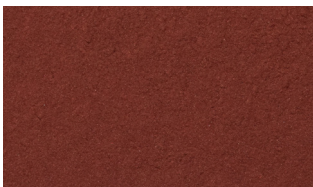
AROS Cu<sup>®</sup> AM is a graphene-treated copper powder, utilizing Graphmatech's tailored Aros Graphene<sup>®</sup> Technology. AROS Cu AM show has an even graphene distribution and a low reflectivity. The particle size distribution of this specific copper product is suitable for additive manufacturing and specifically selective laser melting, LB-PBF.

The Aros Graphene<sup>®</sup> Technology makes it possible to introduce graphene homogeneously into your metal matrix. Our treatment covers the surface of the metal powder particles with graphene, which is how we can secure an even distribution of graphene and thereby prevent the material from separating during transport and processing. The SEM-micrographs Figure 1, show a treated and untreated metal particle. Graphene can be observed as a wrinkling on the surface of the powder particle. Another parameter of interest for AM is the reflectance, which is a measure of how the surface of a material reflects radiant energy. The reflectance of the graphene treated material compared to pure copper it is significantly lower for the wavelength of the red laser used in most LBF systems, Figure 2.



- Decreased reflectivity at 600-1200 nm
- Homogeneous distribution of graphene in the powder matrix
- Suitable for additive manufacturing
- The material is available in variable concentrations and in different particle size distributions upon request

### POWDER QUALITY



- Gas atomized particles
- Spherical shape
- High purity

### TYPICAL CHEMICAL COMPOSITION

Element	wt%
Cu	> 99,5
Other elements	< 0,5

### FORMS OF SUPPLY

Particle size distribution	15-45µm Customized PSD upon request
Category	Metal powder composite
Packaging	1 kg containers Contact us for larger quantities

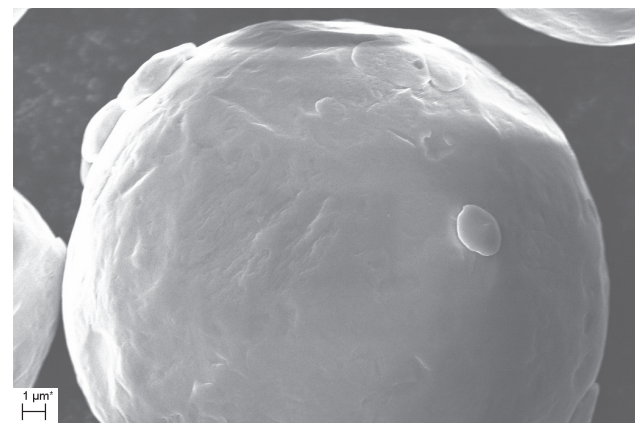
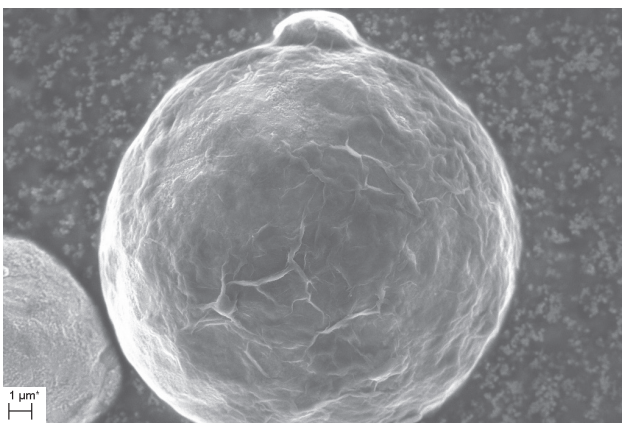


Figure 1. SEM image of a treated copper particle (left), the graphene flakes appears as wrinkles on the particle surface to be compared to an untreated powder particle (right).

Copper-Graphene Powder

# AROS Cu<sup>®</sup> AM Grade 6

## REFLECTANCE

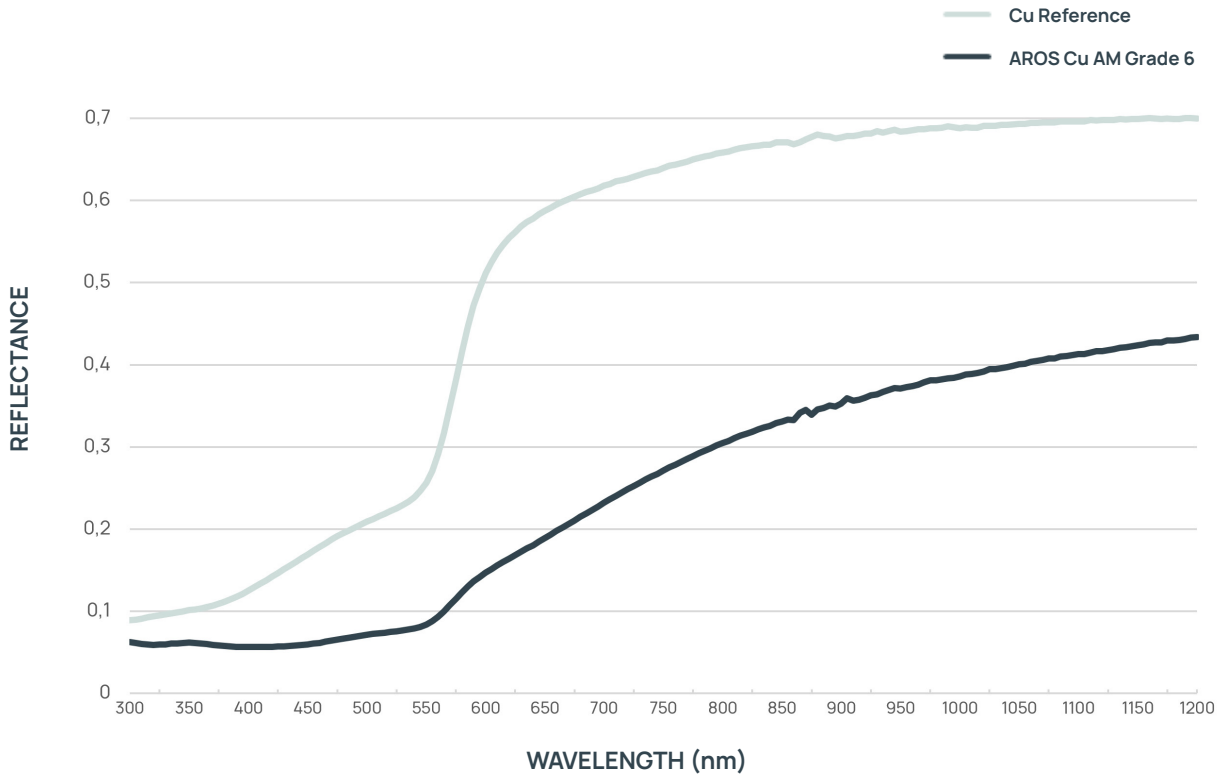


Figure 2. Reflectance of copper and graphene treated copper powder at different wavelengths.

Our Aros Graphene<sup>®</sup> Technology are available upon request for several metals/alloys. Our products creates new opportunities to introduce graphene into your metal matrix in any powder manufacturing technology since the material can be obtained in different particle size distributions.

### CONTACT GRAPHMATECH

Are you curious to learn more about AROS Cu AM, our Aros Graphene<sup>®</sup> Technology or a possible collaboration?

Contact our team at [sales@graphmatech.com](mailto:sales@graphmatech.com) or visit our website [Graphmatech.com](http://Graphmatech.com)

Aros Graphene<sup>®</sup> is a trademark held by Graphmatech AB

### DISCLAIMER

This product is recommended for R&D-use only. The typical values presented in in this data sheet are intended for quality control purposes. Actual values may vary with processing conditions. End-use performance of parts depends not only on materials but also on part design, environmental conditions, processing conditions, etc. Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of Graphmatech materials for the intended application. It is not intended for use in medical, pharmaceutical, and food applications. Graphmatech makes no warranty of any kind unless announced separately, to the fitness for any use or application. Graphmatech shall not be made liable for any damage, injury, or loss induced from the use of Graphmatech materials in any application.