ATO POWDERS

Due to the ordered nature of the ultrasonic atomization process, the output powder has a very narrow particle size distribution. Since the material is melted directly on the surface of the atomizing unit, there is no risk of crucible--related impurities occurring in the product. Argon atmosphere is recommended but the setup also allows for processing with nitrogen. ATO technology produces high quality metal powders with extremely low oxygen content, high particles sphericity and best flowability.

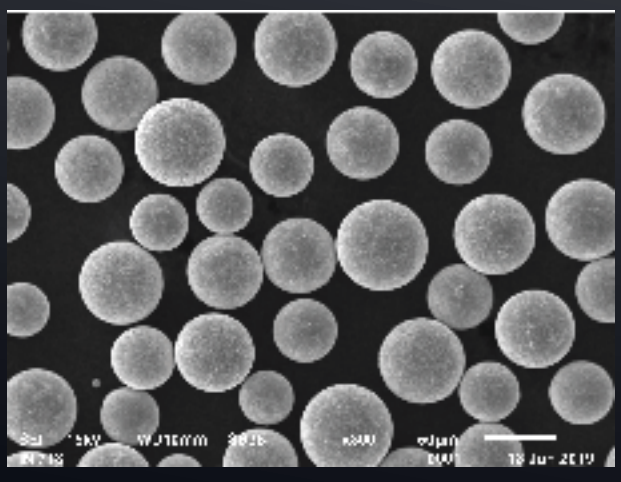
With ATO atomization technology it is possible to produce high-quality powder for various industries.

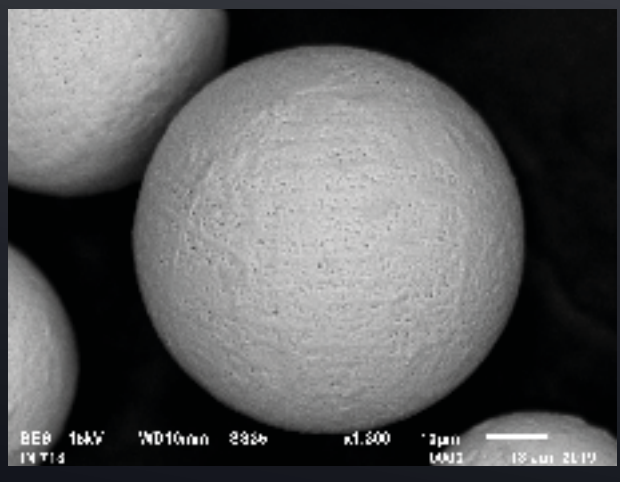
Powder quality plays an important role during powder processing.

TESTED ALLOYS

- Titanium-based alloys
- Steel (AISI316L)
- Nickel Alloys (In-718, In-625)
- Aluminum Alloys (Al4047)
- Platinum Alloys (PtRu10)
- Copper Alloys (CuNi3Si)
- Silver Alloys

HIGH CIRCULARITY





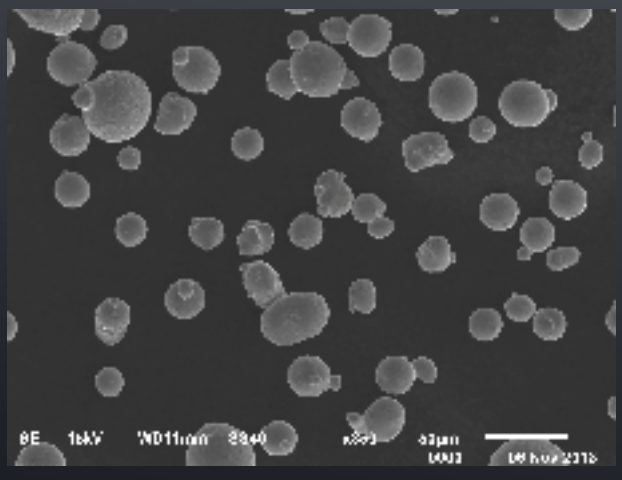
Powder exhibits high circularity with no satellites resulting in high flowability

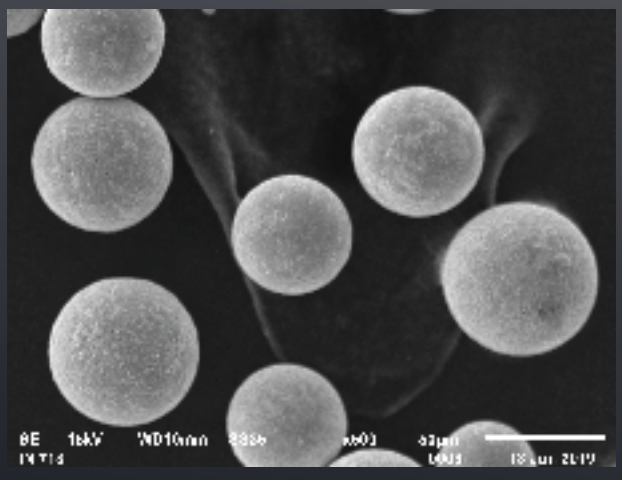
PARTICLE SIZE DISTRIBUTION

Distribution of powder size is very narrow. There are no fines what improves processability for 3D printing. Depending on alloy type mean is usually about ~50um. About 80% of produced powder is in acceptance limits for most demanding 3D Printing technologies.

MATERIAL	D10	D50	D90
Inconel 718	46.5	54.3	63.0
Steel316L	49.6	56.8	65.3
TiGr.5	45.5	50.8	57.5

Table 1.
PSD for basic atomized materials





Gas Atomized Powder vs. ATO Lab

OXYGEN LEVEL

Oxygen plays an important role on elements quality manufactured with Additive Manufacturing process. Oxygen content in atomized powders is similar or better comparing to the competition's powders.

ALLOY	OXYGEN LEVEL ATO [ppm]	OXYGEN LEVEL COMPETITION [ppm]
Inconel 718	150	160
Inconel 625	160	160
316L	260	420
Ti Gr.5	830	1000

UNCHANGED CHEMICAL COMPOSITION

After atomization process the chemical composition of materials stays in the acceptance limits (tested on 316L, Ti Gr.5, AlSi12)

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