Atomizers

Integrated Induction Alloying and Atomization System

Arcast

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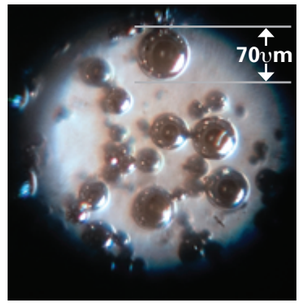
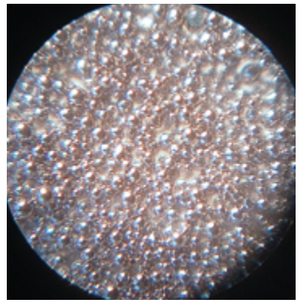
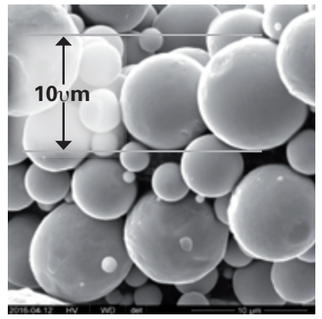




CP Ti Powder



Alloy Steel Powder

Arcast Atomizers are custom built to meet the growing demand for high quality, technically advanced metal powders to fulfill the requirements of today's pioneering manufacturing processes.

Built to Solve Difficult Problems

Building on its expertise with arc and induction melting systems and the past experience of its engineers in the field of gas atomization, Arcast has introduced gas atomization systems into its range of products. We focus on the specialist end of this technology for the production of powders from refractory (high melting point) metals and those with highly reactive melts that have, in the past, proved problematic using conventional methods and materials of containment.

Built to Meet Your Specific Needs

We manufacture systems tailored to our customers' specific requirements for the production of the cleanest and finest metal powders that can be achieved within the constraints of the process physics involved and the limitations imposed by the materials themselves.

Built to Produce Excellent Results

Our system designs optimize production of powders displaying the most consistently spherical morphology, and with the least tendency to 'satellite' formation. These characteristics allow powders to flow more freely and achieve increased packing densities, desirable for the optimization of such increasingly important manufacturing techniques as metal injection molding (MIM) and additive layer manufacturing.

Built for Flexibility

The size and type of vacuum system can be chosen according to the speed of pump-down and depth of evacuation desired.

The size of atomization chambers is usually determined by the flight length that is required to ensure solidification of atomized droplets before they contact the walls or base of the vessel. We do, however, manufacture our systems to be as compact as possible within the constraints imposed by process.

Options

Arcast can offer a variety of atomization options aimed, principally, at producing powders from reactive and/or refractory melts. Melting can be conducted under vacuum or controlled (oxygen free) atmospheres, and usually by means of induction melting using either conventional, ceramic refractory crucibles and guide tubes or by means of contactless, 'cold crucible' arrangements.

Arcast Capabilities

- System design
- Chamber and system manufacture
- Bulk powder production

Materials Atomized

- Titanium alloys
- Super alloys
- Refractory metals
- Reactive metals
- Ferrous and non ferrous alloys

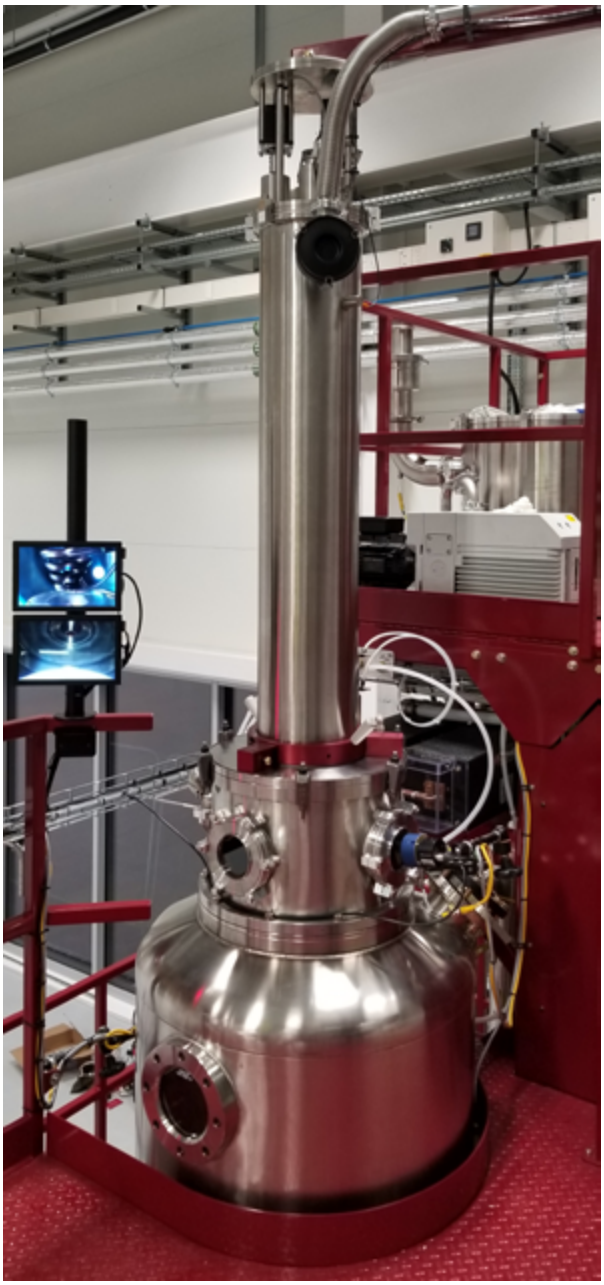
Features

- High vacuum levels
- Inert gas atmosphere
- Cyclone powder separation
- Compact system designs
- Low consumable use

CP Ti Powder in Production

Vacuum/Inert Gas Atomizer Range

Product	Typical charge mass	Furnace and pour type	Typical metal types	Typical powder size D50 µm
Arc 200 and 500	50-1000 g	Cold Crucible/Arc, Free Fall	Ti alloys and reactive and refractory metals	70-200
ATM DM 50 and 100	8-50 kg	Bar Feed, Induction Drip Melt and Free Fall	Ti alloys and reactive and refractory metals	50-150
ATM GP 10	5-10 kg	Ceramic Crucible, Induction, Close-Coupled	Fe, Ni, Co, Cu and Al based alloys	30-70
ATM GP 100	50-100 kg	Ceramic Crucible, Induction, Close-Coupled	Fe, Ni, Co, Cu and Al based alloys	30-70
ATM GP 200	100-200 kg	Ceramic Crucible, Induction, Close-Coupled	Fe, Ni, Co, Cu and Al based alloys	30-70
ATM GP 1000 +	1000 kg +	Ceramic Crucible, Induction, Close-Coupled or Free Fall	Mass Production of Fe, Ni, Co, Cu and Al based alloys	30-100



We also manufacture custom and specialist furnaces and atomizers

...with charge masses from 50 g to fully continuous; using cold, graphite or specialist ceramic crucibles; for common, precious, reactive or refractory metals; as well as glasses, oxides and nitrides - with powder sizes ranging from 10 µm to spray forming.

Common Options

Gas Heaters up to 500°C
O2 and Gas Monitors
Multiple Collection Hoppers
Quick Change Furnace

Material Processing using Advanced & Comprehensive Engineering Solutions

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