

Epson Atmix's superfine alloy powders

Epson Atmix's superfine alloy powders are divided into two main types according to the materials from which they are made and their uses: magnetic powder and metal injection molding (MIM) powder. The company produces these superfine alloy powders using a modified water atomization process^{*1}. In this process, metal that has been melted in a high-frequency induction furnace is atomized by blasting it with pressurized water. The atomized metal is then rapidly cooled, producing a powder with regularly-sized, micron-order particles, and uniform composition and characteristics.

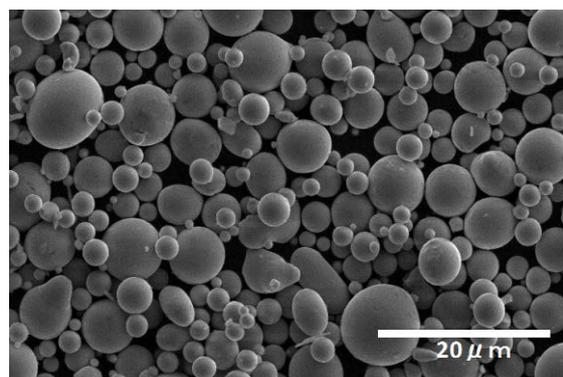
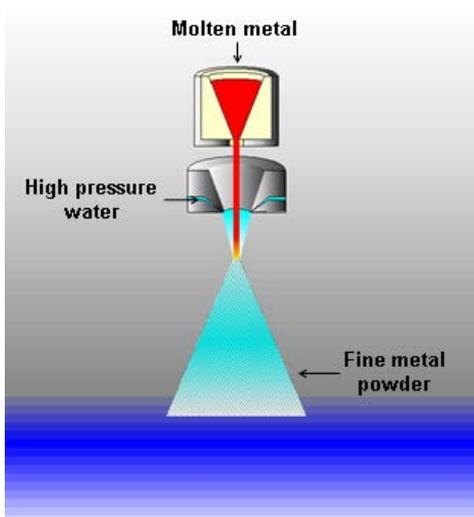
Magnetic powder is used in electronic components such as inductors, choke coils, and reactors that are needed to control voltages in smartphones, wearable products, and other high-performance mobile gear. Epson Atmix's magnetic powders in particular limit energy loss thanks to the company's atomizing technology. They thus help to significantly reduce the power consumption and size of voltage control components, as well as to support high frequencies and large currents. The expanding global mobile equipment market is not the only market driving demand for magnetic powder. This powder is also used in the automotive industry and the low-power industry, which see the potential for an expanding number of new applications.

MIM powder is used in the production of metal injection molded parts for applications that require parts with complex shapes yet high accuracy and strength. The applications range from special medical equipment to automobile engines. Epson Atmix has a broad lineup of MIM powders that includes, for example, stainless steel and low-alloy steel. In addition, the size of powder particles can be adjusted to suit a given application, helping to increase the strength of metal injection molded parts. There is expected to be steady future demand for MIM powder as the markets grow in the medical, automotive and other industries.

Glossary

^{*1} Water atomization process

One of the methods used to manufacture metal powder with very fine particle sizes. In this process metal that has been melted in a high-frequency induction furnace is atomized by blasting it with pressurized water to form fine powders.



Enlarged photo of superfine alloy powder