

Epson Atmix 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)^{*1} powder. The company produces these superfine alloy powders using a modified high-pressure water atomization process^{*2}. 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.

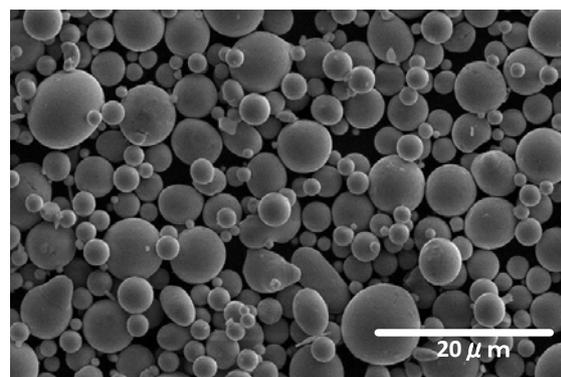
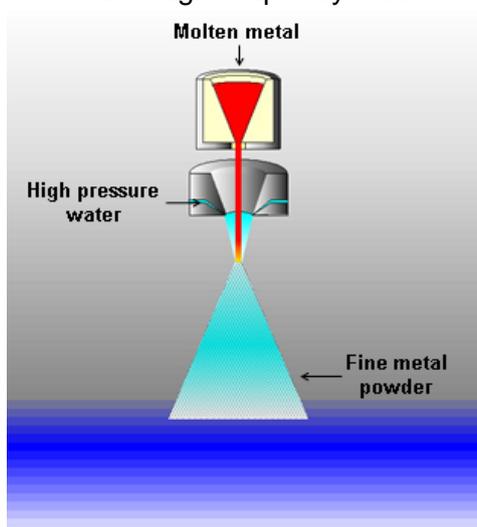
Magnetic powder is used in electronic components such as inductors, choke coils, and reactors that are needed to control voltages in smartphones, notebook PCs, and other high-performance mobile equipment. Epson Atmix's magnetic powder exhibits particularly good energy conductance and thus contributes significantly to reducing the power consumption and size of voltage control components, as well as to supporting 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 attracting considerable attention from the likes of the automotive industry and other industries demanding efficient power consumption, 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.

*1 Metal injection molding (MIM)

A metalworking process that has the features of both injection molding and powder metallurgy. MIM enables very fine alloy powder to be used to produce parts with complex configurations yet that are highly accurate, dense and strong.

*2 High-pressure water atomization process

This is a method of manufacturing superfine alloy powders. Powdered metal is created after metal melted in a high-frequency induction furnace is atomized using high-pressure water is cooled rapidly.



Enlarged photo of superfine alloy powder