

METAL ADDITIVES FOR PLASTICS

PRODUCT DATASHEET



As a world class manufacturer of metallic powders used as plastic additives and fillers, we engineer alloyed stainless steel powders in fine and coarse mesh sizes that are uniquely suited for critical plastic compounding applications.

PRODUCTS AND SIZES

We offer several different alloys and sizes of material specifically tailored for polymer compounding.

Grades: Our metallurgists and engineers have worked to develop our polymer compounding products from 316L, 304L, 430L, and 410L alloys, among others.

Sizes: The above grades are typically offered in fine sizes and with surface areas suited to suspension in a variety of polymers. Our *Plastic Compounding Fine Powder* has a particle size approximately 30 microns, and is desirable for most applications.

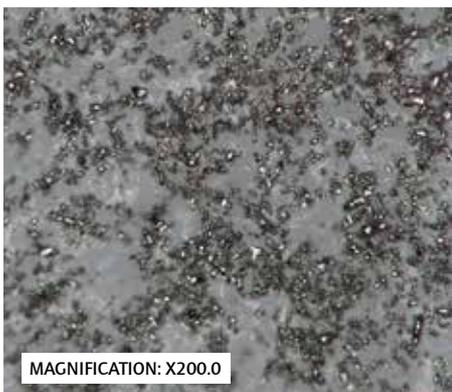
If you have a special requirement we have the expertise to develop custom metal powders tailored to your exacting polymer compounding needs.

ADVANTAGES

Our high performance 300 and 400 series stainless steel powders offer numerous advantages for engineered and detectable compounds. Our metal additive powders are used in sectors where performance and quality are crucial such as Food, Pharmaceutical, Defense, Industrial, and the Automotive industries. Key benefits include:

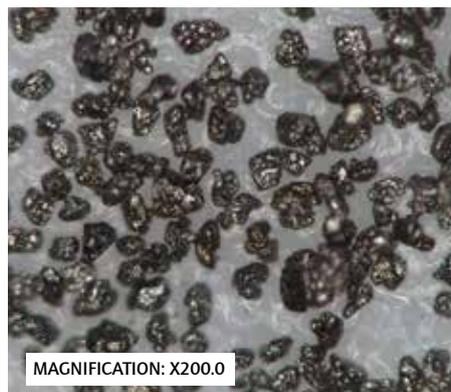
- High-quality supplier of atomized fine metal powders for nearly 50 years
- Metallic additives can impart beneficial detectability, wear, electrical, thermal, or dampening properties to the compound
- Exceptional overall value

304L Plastic Compounding Fine



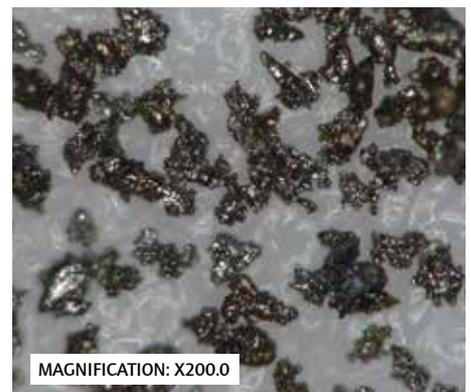
Plastic Compounding Fine Powder has a particle size of approximately 30 μ m, with distribution <50 μ m.

430L Plastic Compounding Coarse (Low surface area)



Plastic Compounding Coarse Powder has a particle size of approximately 100 μ m, with material 75-125 μ m.

430L Plastic Compounding Coarse (High surface area)



Plastic Compounding Coarse Powder has a particle size of approximately 100 μ m, with material 75-125 μ m.

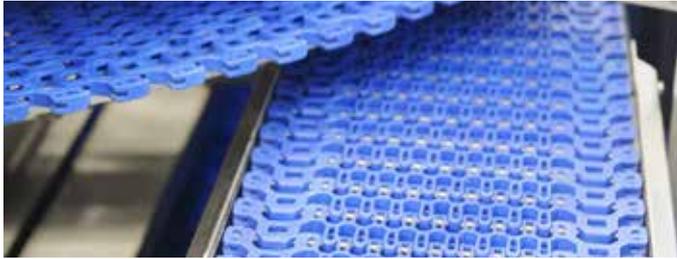
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APPLICATIONS

Our metal powders are used as fillers or reinforcement for plastics to improve a large variety of properties of the compound. When included as an additive, the following properties can be modified:



METAL AND X-RAY DETECTABILITY

The 2011 FDA Food Safety Modernization Act (FSMA) and European Union Regulation No 10/2011 require food industry implementation of detectability for plastics that contact food or could contaminate food. Addition of our metal alloys imparts magnetic and X-Ray detectability to help avoid foreign object contamination in food, beverage, and pharmaceutical products.



VIBRATION AND SONIC DAMPENING

Addition of metal powders to the compound creates a composite material whose vibration, density and acoustic properties can be modified and controlled.



WEAR RESISTANCE

Inclusion of tough, hard metallic particles imparts improved wear properties to components manufactured with metallic additives and fillers. These materials are also known as polymer matrix composites (PMC).



MAGNETIC PROPERTIES

When a polymer is compounded with certain metal alloys, the magnetic properties of the product can be controlled to allow for conveyance, e.g., the movement of parts by magnets, or adhesion in a variety of automotive and industrial applications.



ANTI-STATIC PROPERTIES

Addition of metal powders can increase the electrical conductivity of the material. This can result in anti-static or even conductive properties.

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CHEMICAL COMPOSITION

	316L	304L	410L	430L
Chromium	16.0 - 18.0%	18 - 20%	11.5 - 13.5%	16.0 - 18.0%
Nickel	10.0 - 14.0%	8 - 12%	-	-
Molybdenum	2.0 - 3.0%	-	-	-
Manganese	1.0% max	1.0% max	1.0% max	1.0% max
Silicon	1.0% max	1.0% max	1.0% max	1.0% max
Carbon	0.03% max	0.03% max	0.03% max	0.03% max
Sulfur	0.03% max	0.03% max	0.03% max	0.03% max
Phosphorus	0.045% max	0.045% max	0.04% max	0.04% max
Iron	Balance	Balance	Balance	Balance

EIGHTY FOUR / AMETEK®
SPECIALTY METAL PRODUCTS

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