

# STAINLESS STEEL MIM POWDERS

## Innovative and Advanced Metallurgical Technology

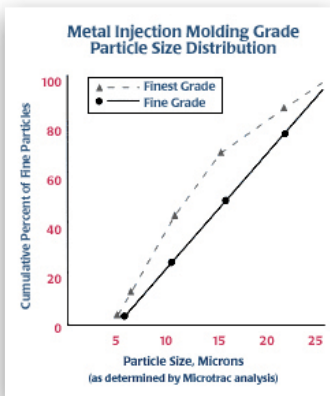
Recognizing the need for superfine powders for injection molding and other industry requirements, AMETEK has developed a proprietary method of producing and processing fine metal powders down to 10 microns. Special size distributions are available on a custom basis.

### AUSTENITIC STAINLESS STEEL

316L used in applications which require good corrosion resistance, strength and ductility. Also available 304L, 310L and 347L.

### FERRITIC STAINLESS STEEL

430L ferritic stainless steel combines good magnetic response and some corrosion resistance. Also available P410L, P434L, P409 and P420.



### 17-4 PH PRECIPITATION HARDENING STAINLESS STEEL

This precipitation hardening grade stainless is used to obtain strength and hardness. It offers better corrosion resistance than 400 series stainless steel. A range of properties and hardness can be achieved through heat treatment.

### NICKEL ALLOYS

Used in a variety of applications from alloying addition to high temperature and corrosion resistance. This family of alloys has significant application through MIM technology.

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AMETEK GRADE	NOMINAL CHEMICAL COMPOSITION (%)								
	Fe	Ni	Cr	Mo	C (max)	Cu	Cb	Mn (max)	Si (max)
316L	Bal.	10-14	16-18	2-3	0.03	-	-	0.5	1.0
430L	Bal.	-	16-18	-	0.05	-	-	1.0	1.0
17-4 PH	Bal.	3-5	15.5-17.5	-	0.07	3-5	0.15-0.45	0.5	1.0
PI600	6-10	Bal.	14-17	-	0.15	-	-	-	1.0
80/20 NiCr	-	80	20	-	-	-	-	-	-
70/30 FeCr	70	-	30	-	-	-	-	-	-

Other elements: total by difference may not exceed 1.0% combined.

## PROPERTIES FOR MIM COMPONENTS

MATERIAL CODE	PHYSICAL PROPERTIES				HARDNESS
	Ultimate Strength 10 <sup>3</sup> psi	Yield Strengths 10 <sup>3</sup> psi	Elongation %	Density g/cm <sup>3</sup>	Rockwell
316L	60-75	20-25	35-50	7.6	57 HRB
430L	50-60	30-35	20-25	7.5	65 HRB
17-4 PH	150-172	120-158	4.0-6.0	7.5	33 HRC

## AMETEK FINE POWDERS

**Metal Injection Molding**  
**Plastics Compounding and Other Applications**

### Grades:

17-4 PH  
316L  
70/30 FeCr  
80/20 NiCr  
PI 600  
P430L  
P410L  
Iron Aluminide  
Custom Alloys  
We Do Special Grades

### Advanced Testing:

Microtrac  
Tap Density  
Pycnometric Density

**Sizing** – Each order is processed per customer specifications.

-400 Mesh  
-500 Mesh  
-20µm D50 = 20 microns  
-15µm D50 = 15 microns  
-10µm D50 = 13 microns

**We have process alternatives to match your binder systems.**

**Call us to discuss options for custom formulation  
and custom grades and sizing.**



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