

# SOFT-MAGNETIC ALLOYS

## Advamet® or Advacat® Fe-3%Si Datasheet

Advamet® is a wax/polymer binder system;

Advacat® is a POM based (catalytic) binder system.

Both systems are compliant to MPIF Standard 35: MIM-Fe-3%Si

### Typical Chemical Composition (post Sinter)

C (%)	Si (%)	Fe (%)
0.05 max	2.5-3.5	balance

Other elements not to exceed 1.0% combined.

All percentages are in weight percent.

### Typical Mechanical Properties

Nominal Typical Values	Density	UTS	YS	Elongation	Mag. Perm	H <sub>c</sub>	B <sub>r</sub>	B <sub>25</sub>	B <sub>500</sub>
	(g/cm <sup>3</sup> )	(ksi)	(ksi)	(in./in.)	μ max	Oe	kG	kG	kG
As-sintered Grade 1	7.62	77	57	24	8,500	0.7	12.0	14.5	19.5
As-sintered Grade 2	7.50	77	57	24	6,000	1.0	12.0	14.5	19.0

Actual results depend on processing – sintering and heat treatment cycles – used.



4511 W. 99th St.,  
Carmel, IN 46032 USA  
317-337-0441  
info@ampmim.com



# SOFT-MAGNETIC ALLOYS

## Advamet® or Advacat® Fe-50%Co Datasheet

Advamet® is a wax/polymer binder system;

Advacat® is a POM based (catalytic) binder system.

Both systems are compliant to MPIF Standard 35: MIM-Fe-50%Co

### Typical Chemical Composition (post Sinter)

C (%)	Co (%)	V (%)	Si (%)	Fe (%)
0.05 max	48-50	2.5 max	1.0 max	balance

Other elements not to exceed 1.0% combined.  
All percentages are in weight percent.

### Typical Mechanical Properties

Nominal Typical Values	Density	UTS	YS	Elongation	Mag. Perm	H <sub>c</sub>	B <sub>r</sub>	B <sub>25</sub>	B <sub>500</sub>
	(g/cm <sup>3</sup> )	(ksi)	(ksi)	(in./in.)	μ max	Oe	kG	kG	kG
As-sintered	7.75	30	20	<1	5,200	1.5	14.0	20.0	22.0

Actual results depend on processing – sintering and heat treatment cycles – used.



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# SOFT-MAGNETIC ALLOYS

## Advamet® or Advacat® Fe-50%Ni Datasheet

Advamet® is a wax/polymer binder system;

Advacat® is a POM based (catalytic) binder system.

Both systems are compliant to MPIF Standard 35: MIM-Fe-50%Ni

### Typical Chemical Composition (post Sinter)

C (%)	Si (%)	Ni (%)	Fe (%)
0.05 max	1.0 max	49-51	balance

Other elements not to exceed 1.0% combined.  
All percentages are in weight percent.

### Typical Mechanical Properties

Nominal Typical Values	Density	UTS	YS	Elongation	Mag. Perm	H <sub>c</sub>	B <sub>r</sub>	B <sub>25</sub>	B <sub>500</sub>
	(g/cm <sup>3</sup> )	(ksi)	(ksi)	(in./in.)	μ max	Oe	kG	kG	kG
As-sintered Grade 1*	7.75	66	23	30	47,500	0.13	10.0	14.0	15.0
As-sintered Grade 2*	7.75	66	23	30	27,000	0.20	10.0	14.0	15.0

\*Interstitials (oxygen, nitrogen) content and grain size affect magnetic response

Actual results depend on processing – sintering and heat treatment cycles – used.

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# SOFT-MAGNETIC ALLOYS

## Advamet® or Advacat® 430L Datasheet

Advamet® is a wax/polymer binder system;

Advacat® is a POM based (catalytic) binder system.

Both systems are compliant to MPIF Standard 35: MIM-430L

### Typical Chemical Composition (post Sinter)

C (%)	Cr (%)	Mn (%)	Si (%)	Fe (%)
0.05 max	16-18	1.0 max	1.0 max	balance
Other elements not to exceed 1.0% combined.				
All percentages are in weight percent.				

### Typical Mechanical Properties

Nominal Typical Values	Density	UTS	YS	Elongation	Mag. Perm	H <sub>c</sub>	B <sub>r</sub>	B <sub>25</sub>	B <sub>500</sub>
	(g/cm <sup>3</sup> )	(ksi)	(ksi)	(in./in.)	μ max	Oe	kG	kG	kG
As-sintered	7.55	60	35	25	1,500	1.8	5.5	11.5	15.8

Actual results depend on processing – sintering and heat treatment cycles – used.



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