

STAINLESS STEELS

Advamet® or Advacat® 17-4PH 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-17-4 PH.

Typical Chemical Composition (post Sinter)

C (%)	Cr (%)	Cu (%)	Si (%)	Mn (%)	Ni (%)	Nb + Ta (%)	Fe (%)
0.7 max	15.5-17.5	3-5	1.0 max	1.0 max	3-5	0.15-0.45	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	Apparent Hardness
	(g/cm ³)	(ksi)	(ksi)	%	HRC
As-sintered	7.5	130	106	6	27
Heat-treated*	7.5	172	158	6	35

*aged at 900° F (482°C) for 1 hr and air cooled.

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



STAINLESS STEELS

Advamet® or Advacat® 316L 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-316L.

Typical Chemical Composition (post Sinter)

C (%)	Cr (%)	Mo (%)	Si (%)	Mn (%)	Ni (%)	Fe (%)
0.3 max	16-18	2-3	1.0 max	2.0 max	10-14	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
	(g/cm ³)	(ksi)	(ksi)	%
As-sintered	7.6	75	25	50

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



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STAINLESS STEELS

Advamet® or Advacat® 420 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-420

Typical Chemical Composition (post Sinter)

C (%)	Cr (%)	Mn (%)	Si (%)	Fe (%)
0.15-0.4	12-14	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
	(g/cm ³)	(ksi)	(ksi)	(in./in.)
Heat-treated*	7.4	200	174	<1

*parts were austenized and tempered at 400°F (204°C) for a minimum of 1 hour

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

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STAINLESS STEELS

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
	(g/cm ³)	(ksi)	(ksi)	(in./in.)
As-sintered	7.55	60	35	25

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



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STAINLESS STEELS

Advamet® or Advacat® 440 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-440

Typical Chemical Composition (post Sinter)

C (%)	Cr (%)	Mo (%)	Si (%)	Mn (%)	Ni (%)	Nb (%)	Fe (%)
0.9-1.25	16-18	0.75 max	1.0 max	1.0 max	0.6 max	3.5 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
	(g/cm ³)	(ksi)	(ksi)	(in./in.)
Heat-treated*	7.5	190	170	<1

*austenized, oil quenched and tempered at 325°F (160°C) for 2 hours

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



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