

LOW-ALLOY STEELS

Advamet® or Advacat® 2700 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-2700

Typical Chemical Composition (post Sinter)

C (%)	Ni (%)	Mo (%)	Si (%)	Fe (%)
0.1 max	6.5-8.5	0.5 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
	(g/cm ³)	(ksi)	(ksi)	(in./in.)
As-sintered	7.6	60	37	26

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



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LOW-ALLOY STEELS

Advamet® or Advacat® 4140 Datasheet

Advamet® is a wax/polymer binder system;

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

MPIF Standard 35: MIM-4140

Typical Chemical Composition (post Sinter)

C (%)	Cr (%)	Mo (%)	Si (%)	Mn (%)	Fe (%)
0.3-0.5	0.8-1.2	0.2-0.3	0.6 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.)
Austempered	7.5	240	180	5

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



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LOW-ALLOY STEELS

Advamet® or Advacat® 4340 Datasheet

Advamet® is a wax/polymer binder system.

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

Typical Chemical Composition (post Sinter)

C (%)	Cr (%)	Mo (%)	Ni (%)	Mn (%)	Fe (%)
0.37-0.43	0.7-0.9	0.2-0.3	1.65-2.00	0.8 max ¹	balance

Other elements not to exceed 1.0% combined.

All percentages are in weight percent.

Note 1: Mn may be specified to be between 0.6 – 0.8% by the customer to comply with AISI-SAE 4340 composition.

Typical Mechanical Properties

Nominal Typical Values	Density	UTS	YS	Elongation
	(g/cm ³)	(ksi)	(ksi)	%
As-sintered	7.5	90	70	6
Heat-treated	7.5	230	200	5

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



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LOW-ALLOY STEELS

Advamet® or Advacat® 4605 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-4605.

Typical Chemical Composition (post Sinter)

C (%)	Ni (%)	Mo (%)	Si (%)	Fe (%)
0.4-0.6	1.5-2.5	0.2-0.5	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)	%
As-sintered	7.5	64	30	15
Austempered	7.5	222	197	3

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



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LOW-ALLOY STEELS

Advamet® or Advacat® 8620 Datasheet

Advamet® is a wax/polymer binder system.

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

Typical Chemical Composition (post Sinter)

C (%)	Ni (%)	Mo (%)	Cr (%)	Fe (%)
0.12-0.23	0.40-0.70	0.15-0.25	0.40-0.60	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	7.4	94	58	3

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



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LOW-ALLOY STEELS

Advamet® or Advacat® 8740 Datasheet

Advamet® is a wax/polymer binder system.

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

Typical Chemical Composition (post Sinter)

C (%)	Ni (%)	Mo (%)	Cr (%)	Fe (%)
0.45-0.55	0.50-0.80	0.25-0.45	0.40-0.60	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	7.5	125	77	8
Heat-treated	7.5	232	203	5

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



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LOW-ALLOY STEELS

Advamet® or Advacat® FN-0205 Datasheet

Advamet® is a wax/polymer binder system.

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

Typical Chemical Composition (post Sinter)

C (%)	Ni (%)	Fe (%)
0.4-0.6	1.9-2.2	balance
Other elements not to exceed 1.0% combined.		
All percentages are in weight percent.		

Typical Mechanical Properties

Nominal Typical Values	Density (g/cm ³)	UTS (ksi)	YS (ksi)	Elongation (%)
As-sintered	7.5	55	25	3
Heat-treated (30HRC)	7.5	116	102	5
Heat-treated (55HRC)	7.5	174	145	2

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



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LOW-ALLOY STEELS

Advamet® or Advacat® 2200 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-2200

Typical Chemical Composition (post Sinter)

C (%)	Ni (%)	Mo (%)	Si (%)	Fe (%)
0.1 max	1.5-2.5	0.5 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
	(g/cm ³)	(ksi)	(ksi)	(in./in.)
As-sintered	7.65	42	18	40

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



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