



AncorTech® Warm Die Compaction for High Density

AncorMax® 200 and **AncorMax® 225** are engineered lubricant binder systems for high density applications. Both are “bonded” premixes combining low lubricant levels with elevated die temperatures enabling higher green and sintered densities. Both materials provide high green strengths with good part ejection characteristics.

AncorMax 200 utilizes 0.40% bonded lubricant and is recommended for green densities of 7.25 to 7.35 g/cm³ (depending on base iron and premix additives). It’s optimal part ejection temperature is 185 °F to 205 °F (85 °C - 96 °C).

AncorMax 225 utilizes 0.25% lubricant with a part ejection temperature of 210 °F to 230 °F (98 °C - 110 °C)

for part densities exceeding 7.3 g/cm³ (depending on base iron and premix additions). The AncorMax 225 is the preferred high density option for heat treated copper steels and sinter hardened materials.

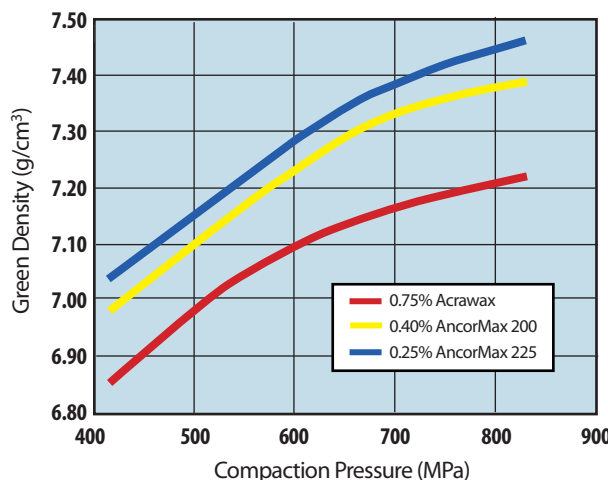
The choice between AncorMax 200 and AncorMax 225 will depend on the final part density requirements, part configuration, and the premix composition. AncorMax 200 has a higher lube and is more suitable for longer parts having greater die contact area. The lower lube content of the AncorMax 225 will promote higher densities.

For more detailed discussion of the benefits of AncorMax 200 and AncorMax 225 please consult with your Hoeganaes Account Manager or Service Engineer.

Key Characteristics of AncorMax 200 and AncorMax 225

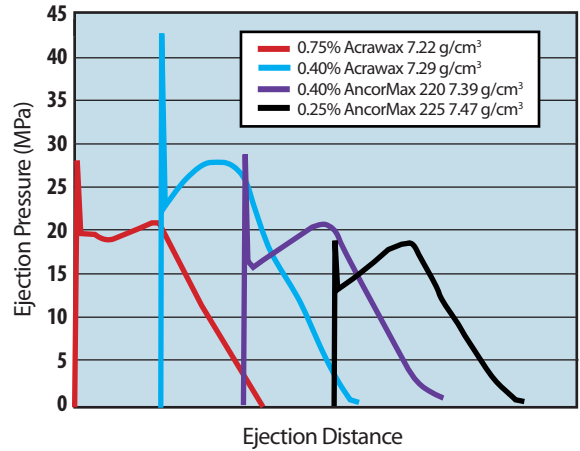
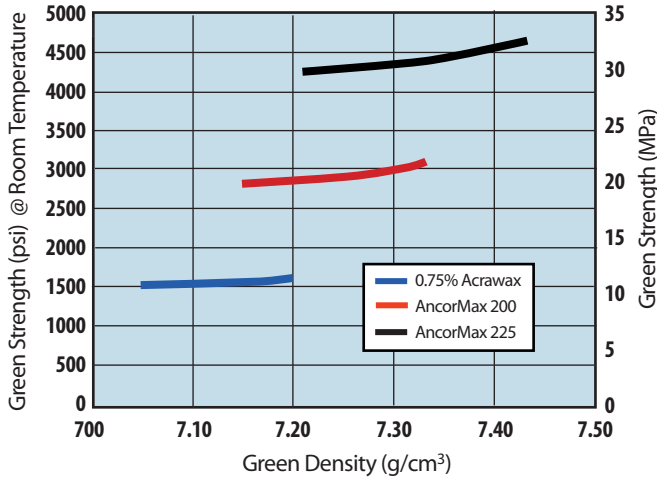
Characteristic	AncorMax 200	AncorMax 225
Powder Preheat	No	No
% lubricant (typical)	0.40	0.25
Part temperature °F (°C)	185 °F – 205 °F (85 °C – 96 °C)	210 °F – 230 °F (98 °C – 110 °C)
Part length	30 mm max (1.2 inch)	25 mm max (1.0 inch)
Part density	7.25 / 7.35 g/cm ³	>7.35 g/cm ³
Green strength	Greater than 3000 psi (20 MPa)	Greater than 4000 psi (27 MPa)
Materials	Not suitable for heat treated copper or sinter hardened	All materials
Ejection Characteristics	Good	Good
Bonded	Yes	Yes
Lube burn out	Good, minimal sooting	Good, minimal sooting

Compressibility Comparison of a Regular Premix vs. AncorMax 200 and AncorMax 225





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The green strength was measured on 12.5 x 12.5 x 32 mm rectangular bars according to MPlF Standard Test Method #15. Samples were compacted at 550, 690, and 830 MPa (40, 50 or 60 tsi) per the conditions most suitable for each material. The ejection characteristics were determined via compaction of a round cylinder 25.4 mm in length by 14 mm in diameter (1 inch by 0.55 inch) at 930 MPa or 60 tsi. Note the green strength of the AncorMax 225 is a significant improvement over a standard premix. Similarly the ejection characteristics of a AncorMax 200 and AncorMax 225 are superior to a standard premix.

**PM Alloy: Ancorsteel[®] 85 HP + 2.0% Ni + 0.3% graphite
Compacted at 60 tsi (830 MPa)
Sintered at 2050 °F (1120 °C) in 90N₂-10H₂**

Alloy	Density g/cm ³	Yield 10 ³ psi (MPa)	Tensile 10 ³ psi (MPa)	Elong %	Hard HRC
PM Alloy	7.46	155 (1070)	185 (1275)	1.5	40
AISI 8620	7.85	160 (1105)	195 (1345)	8.0	45

**Q&T samples austenitized at 1650 °F (900 °C) and oil quenched
Tempered at 400 °F (205 °C) for 1 hour**

NOTICE: The data shown are based on laboratory processing standard test pieces. Results may vary from those obtained in production processing.