

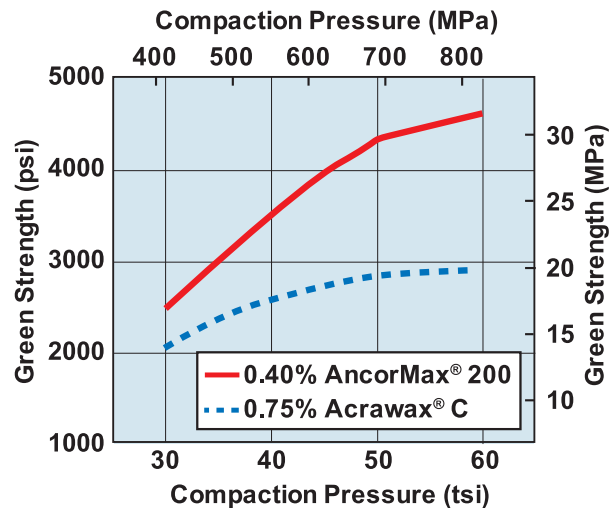
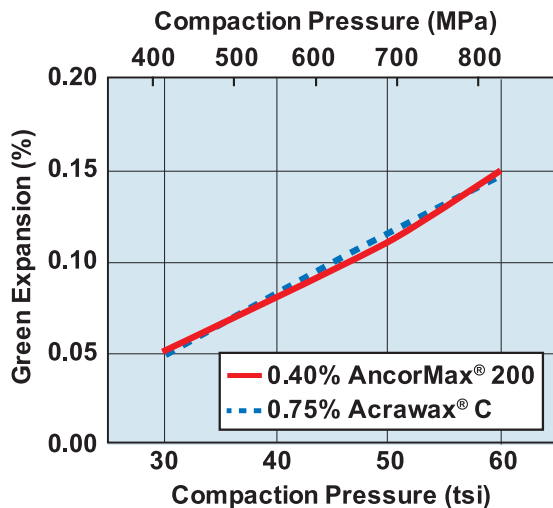
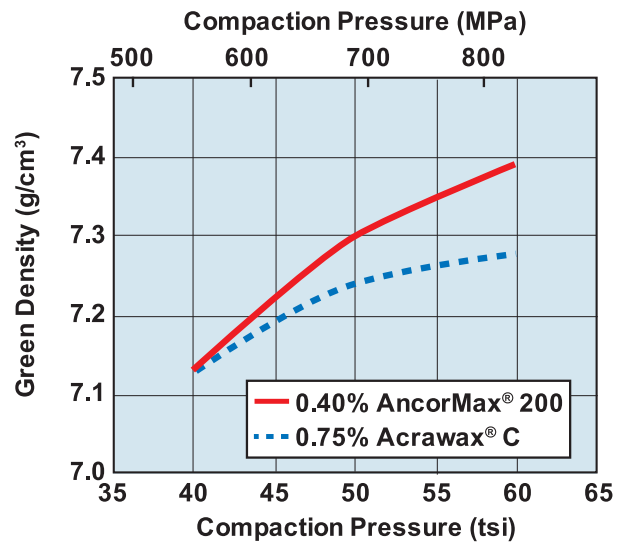
New AncorMax[®] 200 Provides Cost-Effective Route to High Densities

AncorMax[®] 200 is a newly engineered lubricant/binder system for high density applications. A low organic level in conjunction with elevated die temperatures enables density enhancements of up to 0.15 g/cm³ over conventional production systems. This unique lubricant/binder combination also provides good ejection properties and high green strength.

The recommended part surface ejection temperature for this system is 180 to 220 °F (80 to 105 °C). According to Bill Michael, Senior Vice President Sales and Marketing, "Hoeganaes Corporation continues to focus on developing products that achieve higher densities with fewer processing steps. AncorMax[®] 200 is just such a product."

ADVANTAGES

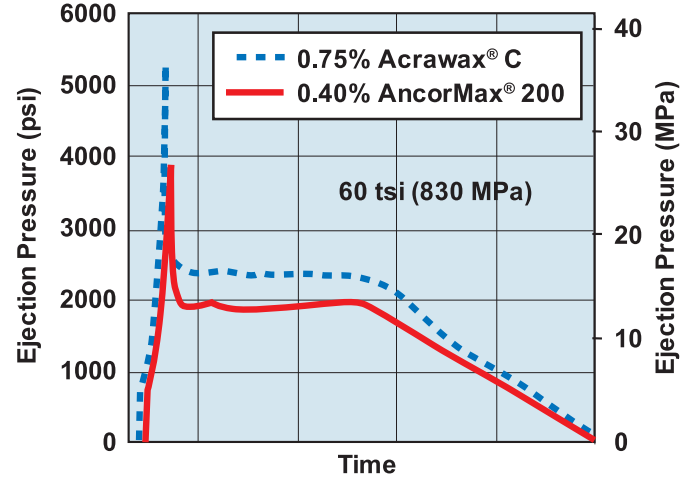
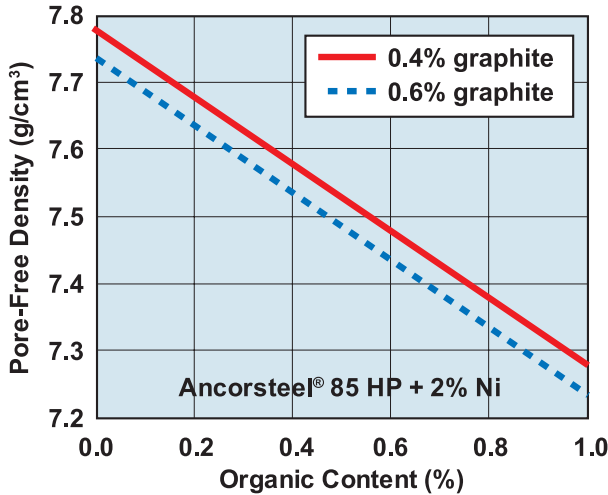
- High SP/SS densities
- Low green expansion
- High green strength
- Low ejection pressures
- No powder heating
- No die-wall lubrication



Sample alloy: Ancorsteel[®] 85 HP + 2% Ni + 0.4% graphite
 Part surface temperature upon ejection: 200 °F (93 °C)



Sample alloy: Ancorsteel® 85 HP + 2% Ni + 0.4% graphite
 Part surface temperature upon ejection: 200 °F (93 °C)



Organic additions of 0.75% are often used to provide adequate ejection properties. AncorMax® 200 allows for good ejection properties at organic levels such as 0.40%, resulting in an increase in pore-free density of up to 0.15 g/cm³. The lower organic level and engineered lubricant also enables very high green strength, up to 60% higher than the reference lubricant. High density PM performance provides SP/SS heat-treated properties that approach those of wrought gearing materials.

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/cm³	Yield 10³ psi (MPa)	Tensile 10³ 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.