



American International Chemical, Inc.

N, N' ETHYLENE BISSTEARAMIDE (EBS) TECHNICAL DATA

Product Code	Description	Ave. Particle Size
EBSFIP	Fine Powder	6 – 24 microns
EBSFIA	Very Fine Powder	4 -15 microns

FACI EBS-W is a micronized wax powder designed to provide lubrication to powdered metal parts. It possesses a high melting point and can withstand temperatures generated by metal parts mass production. **FACI EBS** lubricates the die wall, increases tool life and minimizes ejection pressure.

FACI EBS – N contains no metallic ions and therefore can be burned cleanly and completely. Typical usage levels range from 0.5% to 1.25%.

FACI EBS is available in two particle sizes for your specific application needs.

Specifications	
Acid Value	8 max.
Bulk Density	330g/l max.
Melting Point	140 – 145 °C
Amine Value	2 max.

TSCA registered. Meets requirements for FDA 21 CFR 175.105, 175.300 and 176.170

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Comparison of FACI EBS to Acrawax® C

Abstract:

Two lubricants were placed in a side-by-side comparison to examine their performance in a common powdered metal formulation. The lubricants, while having the same basic chemistry, N,N' Ethylene Bisstearamide (EBS), varied with respect to particle size. Both lubricants performed statistically similarly.

Experiment:

Four lubricants, FACI EBS – N (EBSFIP), EBS – W (EBSFIA), Acrawax® C powdered and Acrawax® C Atomized were used. The iron powder mixture consisted of 98.45% Base Iron, 0.80% Graphite and 0.75% lubricant. The ingredients were blended for 30 minutes and tested for powder properties and Green Strength following MPIF standards. Parts were sintered in a laboratory furnace at 1130 °C for 45 minutes.

Results:

Green Properties			
Lubricant Type	Apparent Density (g/cc)	Flow rate (secs)	Green Strength (50TSI)
EBSFIA	3.06	33.0	1788
Acrawax® C Atomized	3.06	34.0	1784
EBSFIP	3.08	32.0	1853
Acrawax® C Powdered	3.09	30.0	1838

Sintered Properties				
Lubricant Type	Sintered Density g/cc	D.C (% from die size)	TRS (KSI)	
			@ 30 TSI	@ 50 TSI
EBSFIA	6.76	0.36	98.5	124.2
Acrawax® C Atomized	6.75	0.37	94.8	122.9
EBSFIP	6.73	0.36	92.9	119.9
Acrawax® C Powdered	6.70	0.36	85.6	109.1

Conclusions:

FACI EBS – W and Acrawax C Atomized have very fine particles in the range of 6 to 12 microns on average. These lubricants offer the benefit of higher compressibility. FACI EBS – N and Acrawax C Powdered are coarser powders averaging 20 to 30 microns and offer the advantage of higher Apparent Density and Green Strength in the comparison above. There does not appear to be a significant difference in the properties with respect to the manufacturer of the EBS.

Acrawax is a registered trademark of Lonza, Inc.