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CP-CA80-PE • Calcium Carbonate ($CaCO_3$) Compound

Micro-Coated Filler Compound for Blown Film & Injection Cost Optimization

GRADE: MODIFIER COMPOUND

1. PRODUCT DESCRIPTION & CHARACTERISTICS

AdCol CP-CA80-PE is an advanced mineral modifier compound containing 80% surface-treated, ultra-fine calcium carbonate ($CaCO_3$) dispersed in a specialty virgin LLDPE/PP carrier matrix. Engineered to lower formulation costs, increase thermal conductivity (reducing cooling cycle times), enhance anti-blocking characteristics, and improve dimensional stability and tensile modulus in polyolefin film and moulding applications.

2. TYPICAL PHYSICAL & RHEOLOGICAL PROPERTIES

Property / Parameter	Test Method	Unit	Typical Value	Tolerance
Calcium Carbonate Content ($CaCO_3$)	ASTM D5630 / ISO 3451-1	%	**80.0**	± 1.5%
$CaCO_3$ Average Particle Size (D50)	Sedigraph / Laser Particle Size	µm	**1.5**	± 0.2
Top Cut Particle Size (D98)	Laser Diffraction	µm	**≤ 6.0**	Max
Surface Coating	Stearic Acid Treated	—	**Hydrophobic Monolayer**	—
Carrier Polymer System	FTIR Identification	—	**Virgin LLDPE / PE Matrix**	—
Specific Gravity (Density @ 23°C)	ASTM D792 / ISO 1183	g/cm³	**1.92**	± 0.04
Melt Flow Index (190°C / 2.16 kg)	ASTM D1238 / ISO 1133	g/10 min	**4.5**	± 1.5
Moisture Content / Volatiles	ASTM D6980 (Moisture Analyzer)	%	**≤ 0.08**	Max
Whiteness Index (CIE L* / Whiteness)	Spectrophotometer	%	**≥ 95.0**	Min
Dispersion & Mesh Retention	DIN 53770 (45 µm screen)	%	**≤ 0.01**	Zero Grits
Thermal Heat Stability	DIN 53772	°C	**300**	Superior

Recommended Addition Levels & Applications

- **HDPE Shopping & Garbage Bags:** 15% to 45% (Improves dart impact & stiffness).
- **LLDPE/LDPE General Packaging:** 8% to 25% (Improves heat sealing & yield).
- **Injection Moulding / Housewares:** 10% to 35% (Accelerates mould cycle cooling).
- **PP Woven Sacks & Raffia Tapes:** 3% to 12% (Prevents splitting & slippage).

Regulatory, Packaging & Plant Support

- **Compliance:** Complies with FDA 21 CFR 177.1520 and RoHS non-heavy metal norms.
- **Packaging:** 25 kg moisture-proof PP woven sacks with internal poly liner.
- **Technical Support:** Laboratory extrusion trials and screw torque matching available upon request.

Recommendation: When loading above 25% on blown film lines, adjust extruder temperature profile slightly lower (+5°C to 10°C on feed zone, lower on die) to harness the improved thermal conductivity of calcium carbonate.