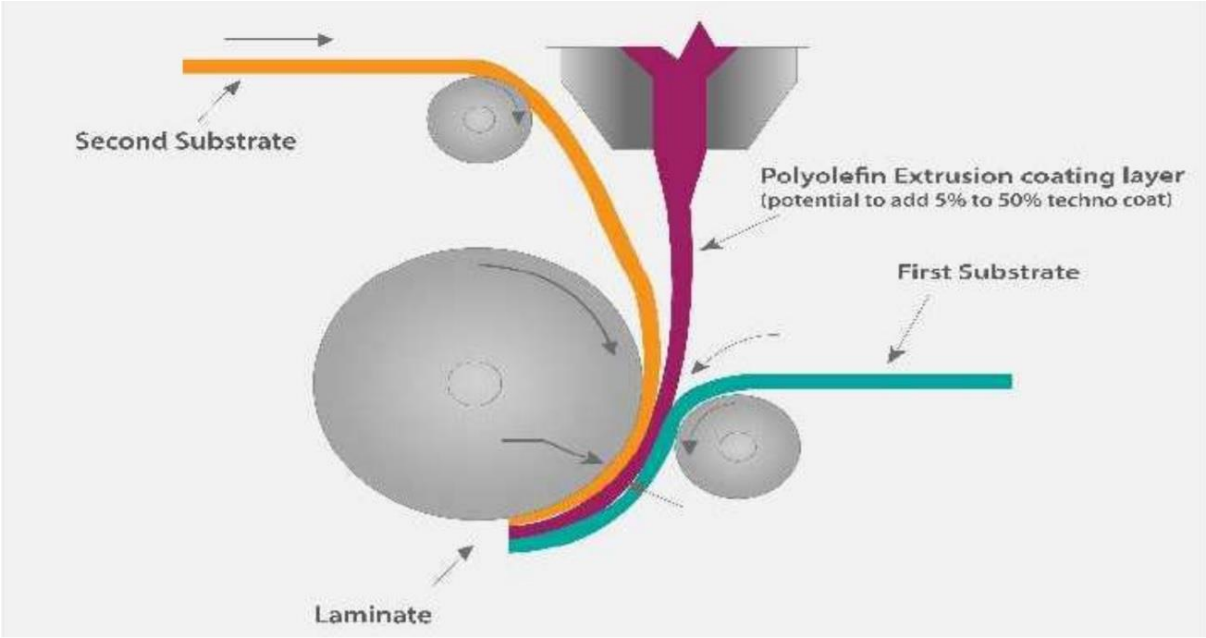
TECHNO COAT® WHITE PAPER

Improve Profitability, Productivity and Performance

Replacing a portion of the resin with a calcium carbonate concentrate such as TECHNO COAT® can result in savings from 5 to 12% depending on percentage of concentrate used. Higher line speeds, increased outputs, better adhesion, easier converting, improved COF and printability, and better barrier are among the many performance improvements that are possible with the addition of TECHNO COAT®.



Product Description

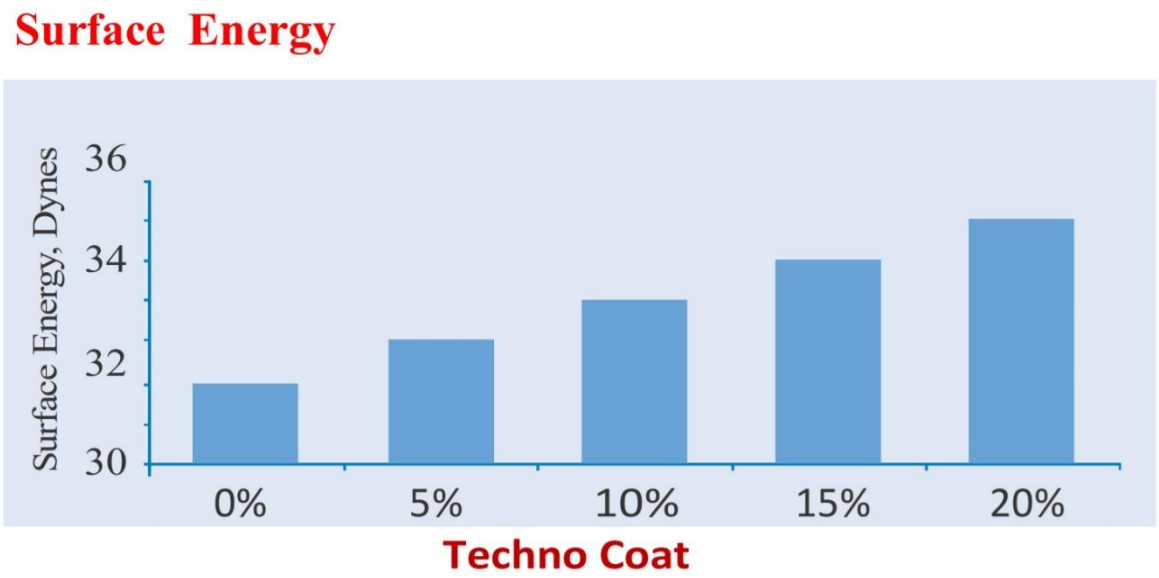
TECHNO COAT® is 65-85% of a fine ground surface treated CaCO3 in suitable polyolefin carrier. They are specifically formulated for use with the wide range of polypropylene and low density polyethylene extrusion coating resins currently used in this demanding high temperature process. TECHNO COAT® can be blended into the process at levels ranging from 5 – 50%, depending on the needs and the application.

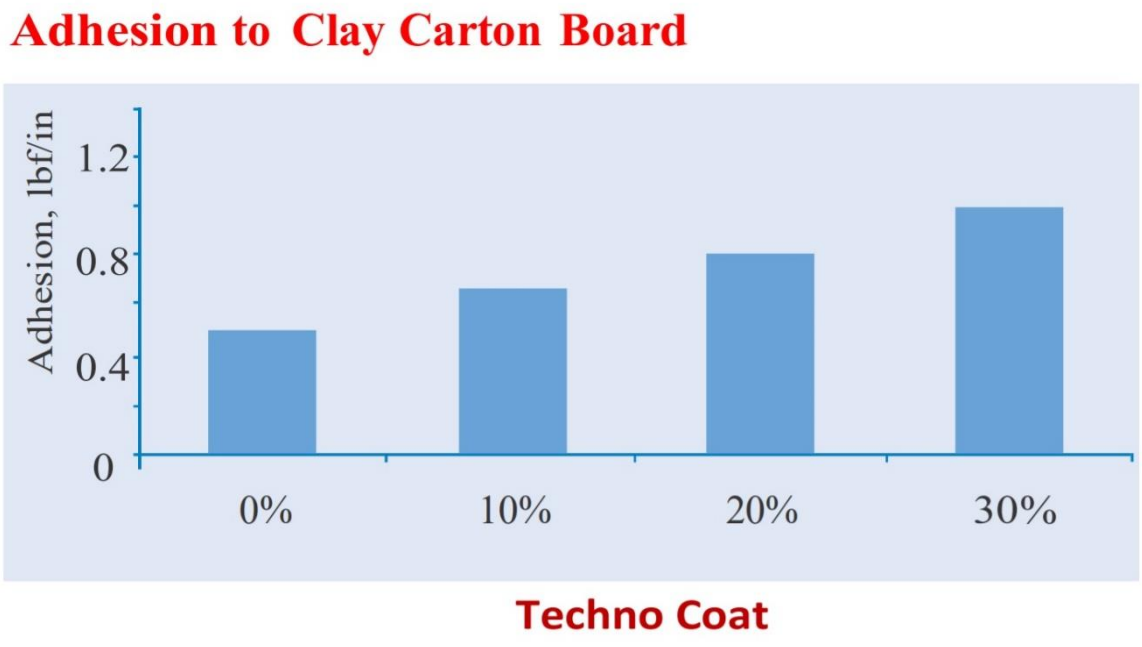
Extrusion Coating Processing

TECHNO COAT® concentrates can be added at levels from 5-50% via volumetric side feeders at the hopper or via gravimetric multi station systems. No changes in temperature profiles are required but optimized performance while maintaining adhesion may be possible with lower temperatures. Higher outputs and line speeds are often realized.

Physical Property Improvements

TECHNO COAT® improves coating adhesion to a variety of substrates, particularly flame-treated, clay-coated board without primer coating. Techno Coat also modifies the coating surface to increase surface energy, improving print quality. Improved sheet feeding and converting performance are often realized in addition to higher seal strengths. Mineral addition also improves barrier properties, reduces both the coating WVTR and OTR.





Summary

- Provide raw material and energy cost savings
- Better adhesion and printability
- Extrusion coating goods containing GCC lower the overall carbon footprint of packaging
- Improved output rates and increased run times

ECONOMIC BENEFITS

Application	**m/y**	**Weight (gr/mg)**	**Total Resin (tons/y)**	**Total (INR/y)**
LDPE Extrusion Coating	378,000,000	21	7938	INR 714,420,000
	LDPE price	INR 90,000		
	Techno Coat 01	INR 50,000		
	% of Techno Coat 01 in the formulation for extrusion coating			
	Resin consumption per year	10%	20%	24%
Raw material product mix	7,938	794	1588	1905
Cost saving for resin only*		INR 71,442,000	INR 142,884,000	INR 171,460,800
TECHNO COAT® 01 cost per year		INR 39,690,000	INR 79,380,000	INR 95,256,000
Potential raw material saving		INR 31,752,000	INR 63,504,000	INR 76,204,800
	% Saving	4%	9%	11%

SUSTAINABILITY BENEFITS

Carbon Footprint & Calcium Carbonate

Polymer Type	**Abbreviation**	**CO2 Emissions (Kg/mt)**
Amorphous Polyethylene Terephthalate	PET	2,800
High Density Polyethylene	HDPE	1,600
Low Density Polyethylene	LDPE	1,700
Polypropylene Homopolymer	PPH	1,700
High Impact Polystyrene	HIPS	2,800
General Purpose (Crystal) Polystyrene	GPPS	2,700
Un-plasticised Polyvinyl Chloride	uPVC	1,800
Calcium Carbonate Mineral Powder	CaCO3	75

Application	m/y	Weight (gr/mg)	Total Resin (tons/y)	% LDPE		Factor LDPE (Kg/MT)		Total C02 Emission Today Situation (Kg)
LDPE Extrusion Coating	378,000,000	21	7,938	100%		1,700		13,494,600
								9.56%
Application	***m/y***	**Weight** *(gr/mg)*	**Total Resin** *(tons/y)*	**% LDPE**	**% Techno Coat 01**	**Factor LDPE** *(Kg/MT)*	**Factor $CaCO_3$** *(Kg/MT)*	**Total CO_2 Emission with 7% of $CaCO_3$** *(Kg)*
LDPE Extrusion Coating	378,000,000	21	7,938	90%	10%	1,700	75	12,204,675
								19.12%
Application	*m/y*	**Weight** *(gr/mg)*	**Total Resin** *(tons/y)*	**% LDPE**	**% Techno Coat 01**	**Factor PP** *(Kg/MT)*	**Factor $CaCO_3$** *(Kg/MT)*	**Total CO_2 Emission with 14% of $CaCO_3$** *(Kg)*
LDPE Extrusion Coating	378,000,000	21	7,938	80%	20%	1,700	75	10,914,750
								22.94%
Application	*m/y*	**Weight** *(gr/mg)*	**Total Resin** *(tons/y)*	**% LDPE**	**% Techno Coat 01**	**Factor PP** *(Kg/MT)*	**Factor $CaCO_3$** *(Kg/MT)*	**Total CO_2 Emission with 14% of $CaCO_3$** *(Kg)*
LDPE Extrusion Coating	378,000,000	21	7,938	80%	24%	1,700	75	10,398,780

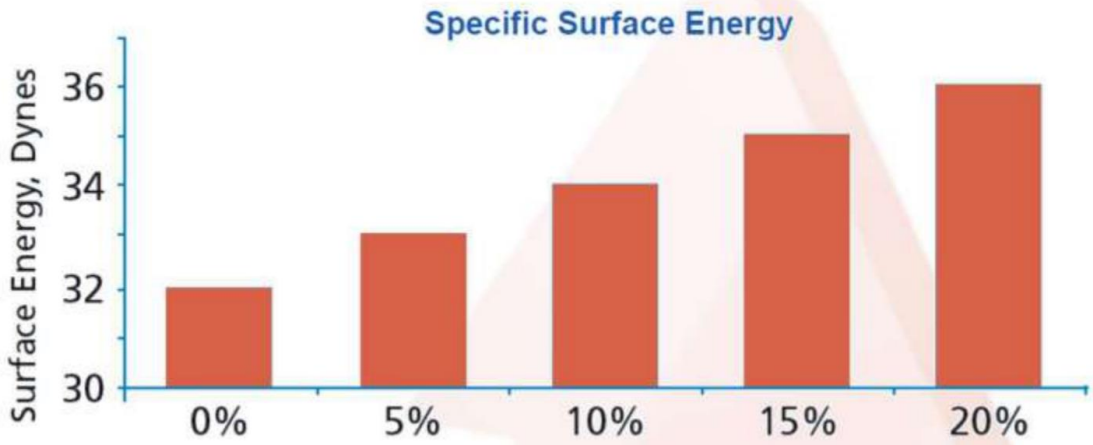
PROCESSING & IMPROVEMENTS

- Improved Output Rates
- Improved Mechanical Properties
- Raw Material Savings
- Increased Run Times
- Improved Economics
- Lower Carbon Foot Print

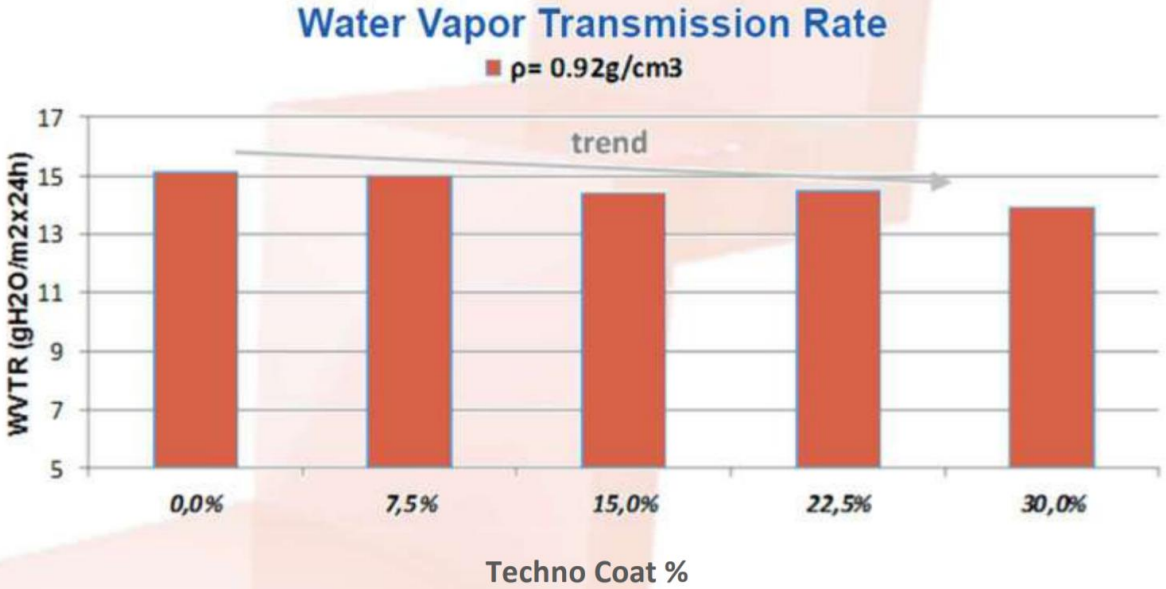
PRODUCT ENHANCEMENTS

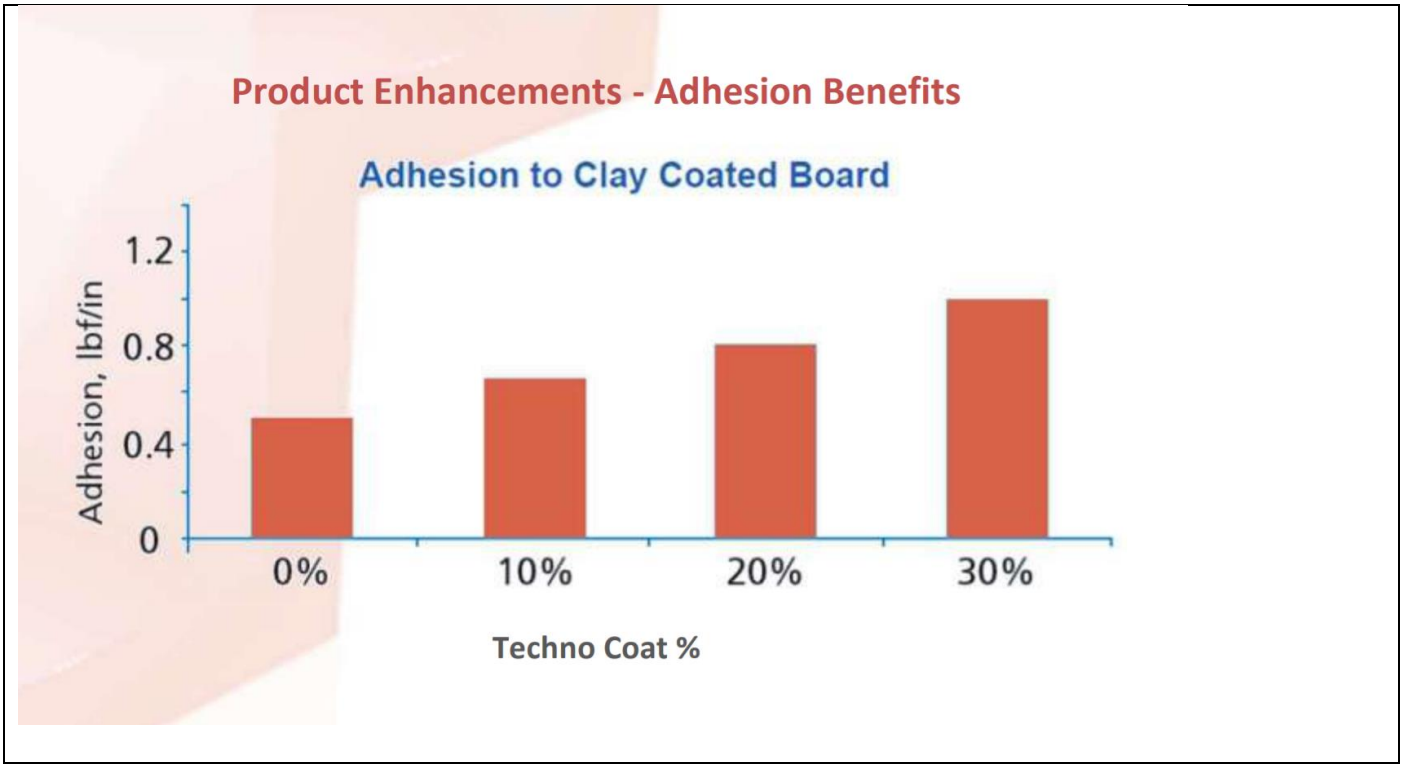
- Dart Impact Tear Resistance
- Lower COF
- Better Sealing Properties
- Printability & Barriers
- Adhesion to clay-coated board
- Adhesion to Aluminium

Product Enhancements - Printability



Product Enhancements - Barrier Improvements





CONCLUSION

- TECHNO COAT® improves coating adhesion to a variety of substrates, particularly aluminium foil and flame-treated, clay-coated board without primer coating.
- TECHNO COAT® also modifies the coating surface to increase surface energy, improving print quality.
- TECHNO COAT® enhances barrier properties, line speed, and anti-blocking effect.
- TECHNO COAT® offers raw materials, energy cost and carbon foot print savings

HEAD OFFICE: Plot No.112, Minerva Industrial Estate, P.K. Road, Near Hercules Hoist, Mulund (W), Mumbai - 400 080, India.

Tel: +91-22-6267 3500 | **E-mail:** masterbatchinfo@kandui.in | **Web:** www.kandui.in