



TOPMET CLEAR™

The next-generation roll-to-roll vacuum coating system for advanced transparent barrier coatings

BENEFITS

- Higher transparency for product visibility
- Improves barrier performance and quality
- Production flexibility to meet demand
- Lowers operating costs
- Improves sustainability

FEATURES

- Configurable as standard metallizer, AlOx coater and/or organic top-coater
- Wide variety of substrates, including biodegradable films and polypropylene
- In-line process control system for optically uniform, fully transparent barrier layers
- Award-winning and patented 'Staggered Evaporation Boat' design improves coating uniformity
- Proven winding system based on industry leader TopMet® roll-to-roll coating system
- TreatMag™ substrate pre-treatment system for improved layer adhesion and barrier properties (optional)

DESCRIPTION

The Clear Solution

Based on the TopMet platform, this modular platform can be configured for standard metallizing, AlOx deposition with or without plasma deposition, and/or organic top coating.

TopMet CLEAR offers two advanced AlOx processes:

- The AlOx-ECON process minimizes capital cost while producing 20 nanometer thin, clear barrier coatings on PET substrates.
- The AlOx-HAD process is adopting a plasma-assisted deposition, developed in conjunction with the Fraunhofer Institute in Germany, depositing typically 10 nanometer thin layers with excellent barrier properties on a wide range of plastic packaging films.

Both processes integrate Applied Materials' robust patented evaporator boat design, winding system, and in-line control system for layer thickness monitoring. Together, these innovations generate uniform AlOx layers with higher barrier performance and higher transparency.



PERFORMANCE SPECIFICATIONS*

TopMet CLEAR Model Number	TMC 1250	TMC 2450	TMC 2850
17µm OPP AlOx-HAD			
Oxygen transmission rate (cm ³ /m ² day)	<100		
Water vapor transmission rate (g/m ² day)	<1		
Optical transparency (%)	>98		
Annual throughput (t)	1900	3600	4200
12µm PET AlOx-HAD			
Oxygen transmission rate (cm ³ /m ² day)	<2		
Water vapor transmission rate (g/m ² day)	<1		
Optical transparency (%)	>98		
Annual throughput (t)	2000	3800	4500
12µm PET AlOx-ECON			
Oxygen transmission rate (cm ³ /m ² day)	<3		
Water vapor transmission rate (g/m ² day)	<2		
Optical transparency (%)	>90		
Annual throughput (t)	2700	5200	6000
FRESHURE® TOPCOAT**			
Surface tension	>50 dyne/cm for 6-12 month		
Printability	Direct without primer		

* Barrier data depending on actual substrate type; throughput depends on customers production parameters

**Freshure® is a patented process developed and licensed by DSM/Knowfort

TECHNICAL SPECIFICATIONS

TopMet CLEAR Model Number	TMC 1250	TMC 2450	TMC 2850
Max. coating width (mm)	1250	2450	2850
Max. roll diameter (mm)	1250		
Max. web speed (m/s)	14		
Number of boats	14	26	30
Overall length (m)	22	24	26
Overall width (m)	11		12
Height above floor (m)	4.7		5.5

PROCESS OPTIONS

Dual Process Options	Organic Transparent Layer Options
Standard Al metallizing	Freshure® single coat directly on substrate material <ul style="list-style-type: none"> Improved oxygen barrier Improved long-term surface tension for better printability
AlOx clear barrier (standard metallizing with O ₂)	Freshure® topcoat on Al or AlOx <ul style="list-style-type: none"> For downstream protection of Al/AlOx layer Improved long-term surface tension for better printability



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