PROCESS DATA SHEET

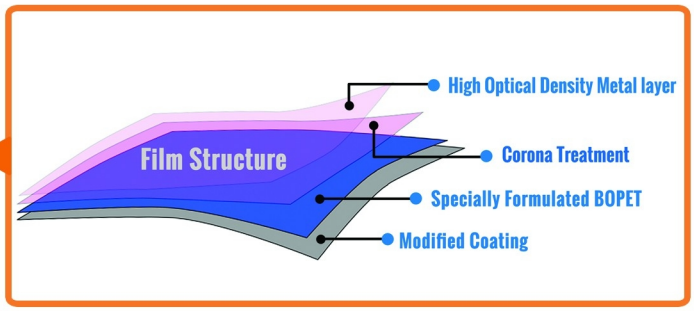
FLEXMETPROTECT™ F-HBP-M NEW

F-HBP Metallized High Barrier BOPET Film

Process Overview

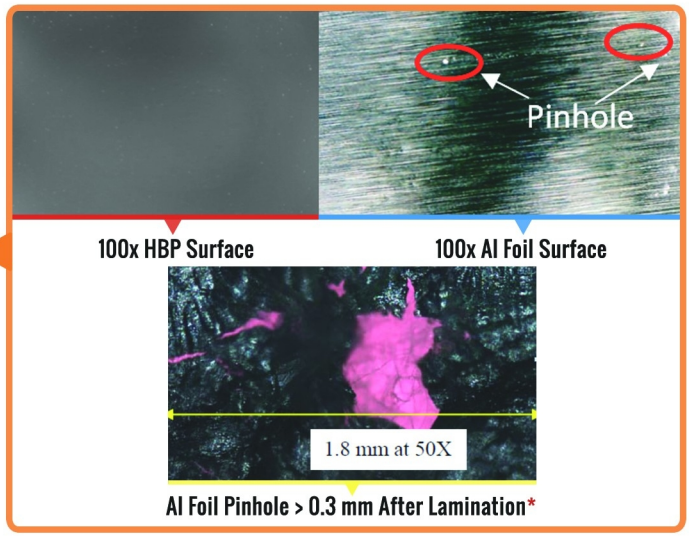
F-HBP (High Barrier Product) is a **new type of gas barrier film**. This film offers **high moisture** and **oxygen barrier** for many applications including foil replacement.

High barrier comes from **specially formulated BOPET film** with **High Optical Density**.This film is **100% web inspected**, for any metal defect, using our state of the art vision system.



Superior Metal Deposition

- Improved product quality
- Less pinhole density compared with foil*
- State of the art inspection technology
- High Optical Density
- Dependable barrier properties



Benefits to Customer

- Ideal film for foil replacement application
- Superior barrier properties
- Improve and extend product shelf life
- Quality assurance peace of mind
- Cost saving as a foil replacement opportunity

Film Type	Thickness Range	MVTR	O_2TR	Metal Adhesion
F-MTG	12-50 µ	1.20	1.20	150
F-CHE/M	12-50 µ	1.00	1.00	500
F-HMB/M	12-50 µ	0.60	0.60	1000
F-HBP/M	12 µ	0.14	0.24	200
**FOIL (Laminated)	9 µ	0.29	0.22	N/A

WVTR: gm/m2/Day, **O_2TR:** cc/m2/Day, **Metal Bond:** gmf/in

##Journal of applied packaging 08/2016: "Comparing Optimum Barrier Variables of Aluminum and MPET Foil Based laminates for Coffee Packaging"

Value Proposition

Key Features

- True foil replacement/substitution
- Excellent moisture and oxygen barrier
- Minimum pinhole density
- Low weight compare with aluminum foil
- Increase product efficiency

Applications

- Foil replacement
- Medical packaging
- Dried meats & nuts
- Coffee & Snacks packaging
- High barrier and aroma management

*Compared with 7 micron aluminum foil un-flexed. TAPPI 2005 PLACE conference "The Impact of Foil Pinholes and Flex Cracks on the Moisture and Oxygen Barrier of Flexible Packaging"

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Made in the USA | PDS Issued on 19-09-2018

*Consult with Flex Films for Further Detail

F-HBP Metallized High Barrier BOPET Film

Product Description:

➢The film is one side Modified Primer Coated and other side Metalized on Corona Treated

Application:

➢High barrier and aroma management

➢Ideal for products requiring extended shelf life & high barrier against oxygen and moisture

➢Foil replacement

Key Features:

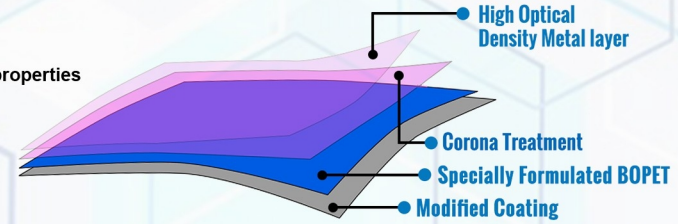
➢Superior gloss

➢Superior barrier properties

➢Excellent machinability & handling properties

➢Consistent metal deposition

Film Structure



FLEXMETPROTECT™ F-HBP-M is a metalized polyester film having superior barrier properties. The film has superior gloss and is available in 3.0 optical density. The bond strength between the metal and the Corona Treated surface (MT) is a minimum of 200gm/25mm.

PROPERTIES		TEST METHOD (ASTM)	UNIT	TYPICAL VALUES
OPTICAL DENSITY (TOLERANCE: +/- 5%)				Very High Density (VHD) 3.0 - Special Application
THICKNESS		Internal	Micron (Gauge)	12 48
YIELD			m^2/kg $in^2/lb.$	59.52 41934
SURFACE TENSION (range) (Modified Primer Coated surface)		D-2578	Dyne/cm	52-56
COF (max) (MI/MO)		D-1894	-	0.70
TENSILE STRENGTH AT BREAK (min)	MD	D-882	Kg/cm^2	1900
	TD			2000
	MD		(Psi)	27000
	TD			28500
ELONGATION AT BREAK (min)	MD		%	105
	TD			85
LINEAR SHRINKAGE (max) (30 Minute at 150°C)	MD	D-1204	%	1.5
	TD			0.6
GLOSS (min) (Metalized surface) (Bare surface)		D-2578	-	850 800
MVTR (typical) (38°C & 90%RH)		F-1249	$gm/m^2/day$ $(gm/100in^2/day)$	0.14 0.009
OTR (typical) (23°C & 0%RH)		D-3985	$cc/m^2/day$ $(cc/100in^2/day)$	0.24 0.0182

MI : Metal In

MO : Metal Out

STORAGE & HANDLING

FLEXMETPROTECT™ needs to be stored in a warehouse below 35°C (95°F) and should not be exposed to direct sunlight, bright light sources, or high humidity. If the material is stored in the recommended conditions, FLEXMETPROTECT™ is suitable for use within 6 month from the date of manufacturing.

FOOD CONTACT

FLEXMETPROTECT™ complies with EU and FDA regulations on plastic materials used for food grade application. Specific documents and SDS are available on request.

DISCLAIMER