

# FlexPak Product Matrix

2023



**Flexible Packaging Overlaminates**

**48 Gauge Ultra Clear PET Spec# 78792**

**48 Gauge Gloss Selfwound PET Spec# 78918**

Structure		
<b>Description</b>	48 Gauge Ultra Clear polyester film treated one side for ink adhesion. Specifically designed for print surface on laminations	48 Gauge clear polyester selfwound overlaminated with permanent acrylic adhesive. Not designed for printing.
<b>Construction</b>	Single Ply	Single Ply
<b>Total Construction Caliper</b>	.47 mils	.98 mils
<b>Printability / Ink Recommendations (Contact your ink supplier for best recommendation)</b>	Print Treated One Side - Flexo UV and Water Base	NONE
Exterior Layer Performance Properties		
<b>Dimension Stability</b>	Excellent	Excellent
<b>Flex Crack Resistance</b>	Excellent	Excellent
<b>Stiffness/Flexibility</b>	Good	Good
<b>Tear Resistance (grams-force)</b>	Not Tested	Not Tested
Barrier Layer Performance Properties		
<b>Chemical Resistance</b>	Limited	Limited
<b>Light</b>	N/A	N/A
<b>Moisture Vapor Transmission Rate</b>	3.7 grams/m <sup>2</sup> / day	3.7 grams/m <sup>2</sup> / day
<b>Odor</b>	Fair	Fair
<b>Oxygen Transmission Rate</b>	9.1 cc / 100 sq in / day	9.1 cc / 100 sq in / day
Sealant Layer Performance Properties		
<b>Caulk &amp; Flow</b>	N/A	N/A
<b>Hot Tack</b>	N/A	N/A
<b>Coefficient of Friction</b>	0.35 (Kinetic)	<.30 (Kinetic)
<b>Puncture Resistance</b>	N/A	N/A
<b>Seal Initiation Temperature</b>	N/A	N/A
<b>Seal Strength</b>	N/A	N/A
<b>Seal through Contamination</b>	N/A	N/A
<b>Mullen Burst Strength</b>	N/A	N/A
<b>Material Strengths</b>	Can be reverse printed and laminated to flexible packaging structures to add dimensional stability or used as an ultra clear press applied overlam	Selfwound PET with adhesive designed to withstand packaging process. Press applied like standard selfwound overlam
Packaging Applications		
<b>Compliance</b>	21 CFR 177.1630	CFR 177.1630 for facestock. CFR 175.105 for adhesive
<b>Dry Ingredients</b>	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes
<b>Liquids</b>	Yes	Yes
<b>End-Use Applications</b>	Film is specifically designed to be a top layer on a flexible packaging lamination. May be printed or used as true laminate. Must be wet-laminated on press.	Flexible Packaging overlaminate for protecting inks in applications such as food, cosmetics, nutraceutical and pet food

**Flexible Packaging Overlaminates**

**48g Matte Selfwound PET Spec #79861**

**Flexible Packaging Components**

**White Single-Ply Snack Web 170 Spec# 78806**

<b>Description</b>	48g matte clear selfwound polyester with permanent acrylic adhesive. Not designed for printing	1.7 mil white opaque, coextruded, biaxially oriented polypropylene film. Sealable one side. Treated one side
<b>Construction</b>	Single Ply	Single layer
<b>Total Construction Caliper</b>	.92 mils	1.7 mils
<b>Printability / Ink Recommendations (Contact your ink supplier for best recommendation)</b>	NONE	Treated one side - requires corona treat prior to printing. Flexo - Water Base and Solvent.
Exterior Layer Performance Properties		
<b>Dimension Stability</b>	Excellent	Excellent
<b>Flex Crack Resistance</b>	Excellent	Excellent
<b>Stiffness/Flexibility</b>	Excellent	Good
<b>Tear Resistance (grams-force)</b>	Not Tested	Not Tested
Barrier Layer Performance Properties		
<b>Chemical Resistance</b>	Limited	Limited
<b>Light</b>	N/A	Good
<b>Moisture Vapor Transmission Rate</b>	3.7 grams / 100 sq in / day	.27 grams/100 sq. in./day
<b>Odor</b>	Fair	Fair
<b>Oxygen Transmission Rate</b>	9.1 cc / 100 sq in / day	100-120 cc/100 sq. in./day
Sealant Layer Performance Properties		
<b>Caulk &amp; Flow</b>	N/A	N/A
<b>Hot Tack</b>	N/A	Good
<b>Coefficient of Friction</b>	.16 Kinetic	.35 Kinetic/Print Side
<b>Puncture Resistance</b>	N/A	Not Tested
<b>Seal Initiation Temperature</b>	N/A	200°F
<b>Seal Strength</b>	N/A	Seal to Seal: 400 (g/in) @ 230°F/ 20 PSI/0.5 sec.
<b>Seal through Contamination</b>	N/A	Poor
<b>Mullen Burst Strength</b>	N/A	Not Tested
<b>Material Strengths</b>	Matte Flexible packaging overlaminate for protecting inks in applications such as food, cosmetics, nutraceuticals and pet food/treats	Stand alone it is designed for horizontal filling machines. As a sealant film in lamination it can be vertically filled. Excellent opacity and low temperature sealing.
Packaging Applications		
<b>Compliance</b>	CFR 177.1630 for facestock. CFR 175.105 for adhesive	FDA regulation 21 CFR 177.1520
<b>Dry Ingredients</b>	Yes	Yes
<b>Powdered Ingredients</b>	Yes	No
<b>Liquids</b>	Yes	Not recommended
<b>End-Use Applications</b>	Flexible Packaging overlaminate for protecting inks in applications such as food, cosmetics, nutraceutical and pet food	Horizontal packaging of snacks, baked goods and ice cream novelties. Inner sealing web of laminations for vertical packaging.

Flexible Packaging Film/Film Laminations

	White Multi-Ply Snack Web 260 SB Spec# 79122	White Multi-Ply Snack Web 260 HB Spec# 79123
<b>Structure</b>		
<b>Description</b>	PET face laminated to white PE film	PET face laminated to white EVOH/m LLDPE film
<b>Construction</b>	48 ga. PET/adh/2 Mil White LLDPE	48 ga. PET/adh/2 Mil White EVOH/mLLDPE film
<b>Total Construction Caliper</b>	2.6 mils	2.6 mils
<b>Printability / Ink Recommendations (Contact your ink supplier for best recommendation)</b>	Flexible Packaging Film Inks - Contact Ink Supplier	Flexible Packaging Film Inks - Contact Ink Supplier
<b>Exterior Layer Performance Properties</b>		
<b>Dimension Stability</b>	Excellent	Excellent
<b>Flex Crack Resistance</b>	Good	Good
<b>Stiffness/Flexibility</b>	Average	Average
<b>Tear Resistance (grams-force)</b>	Not Tested	Not Tested
<b>Barrier Layer Performance Properties</b>		
<b>Chemical Resistance</b>	Average	Average
<b>Light</b>	Good	Good
<b>Moisture Vapor Transmission Rate</b>	0.45 grams/100 sq. in./day	0.31 grams/100 sq. in./day
<b>Odor</b>	Average	Average
<b>Oxygen Transmission Rate</b>	9.0 cc./100 sq. in./day	.05 cc./100 sq. in./day
<b>Sealant Layer Performance Properties</b>		
<b>Caulk &amp; Flow</b>	Good	Good
<b>Hot Tack</b>	Good	Good
<b>Coefficient of Friction</b>	0.25 (Kinetic, seal to seal)	0.25 (Kinetic, seal to seal)
<b>Puncture Resistance</b>	Not Tested	Not Tested
<b>Seal Initiation Temperature</b>	300°F	300°F
<b>Seal Strength</b>	300°F/ 20 PSI/ 1.0 sec.	300°F/ 20 PSI/ 1.0 sec.
<b>Seal through Contamination</b>	Good	Good
<b>Mullen Burst Strength</b>	Not Tested	Not Tested
<b>Material Strengths</b>	Good Opacity and OTR barrier properties (without saran), good MVTR, and hermetic seals for extended shelf life.	Good Opacity with EVOH provides excellent OTR barrier properties, good MVTR and hermetic seals for extended shelf life
<b>Packaging Applications</b>		
<b>Compliance</b>	21 CFR 177.1520 and/or 21 CFR 177.1350, 21 CFR 177.1330	21 CFR 177.1520 and/or 21 CFR 177.1350, 21 CFR 177.1330
<b>Dry Ingredients</b>	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes
<b>Liquids</b>	Not recommended	Yes
<b>End-Use Applications</b>	Opaque Packaging: Nuts and other oxygen sensitive salted snacks. Some liquids	Opaque Packaging: Spices, snacks and novelties requiring extra barrier. Hard to hold contents snacks and nuts

Flexible Packaging Film/Film Laminations

	Clear Multi-Ply Snack Web 260 HB Spec# 79125	White & Silver/Metallized Multi-Ply Snack Web 260 HB Spec# 79355 - White Spec# 79354 - Silver
<b>Structure</b>		
<b>Description</b>	PET face laminated to clear EVOH/m LLDPE film	PET face laminated to Metallized PET film with extrusion seal
<b>Construction</b>	49 Ga. PET/2m Clear EVOH/mLLDPE	48 ga. PET/10#(W)LDPE/48 ga. Metallized PET/12#Metalocene
<b>Total Construction Caliper</b>	2.6 mils	2.6 mils
<b>Printability / Ink Recommendations (Contact your ink supplier for best recommendation)</b>	Flexible Packaging Film Inks - Contact Ink Supplier	Flexible Packaging Film Inks - Contact Ink Supplier
<b>Exterior Layer Performance Properties</b>		
<b>Dimension Stability</b>	Excellent	Excellent
<b>Flex Crack Resistance</b>	Good	Good
<b>Stiffness/Flexibility</b>	Average	Average
<b>Tear Resistance (grams-force)</b>	Not Tested	Not Tested
<b>Barrier Layer Performance Properties</b>		
<b>Chemical Resistance</b>	Average	Average
<b>Light</b>	Poor	Poor
<b>Moisture Vapor Transmission Rate</b>	0.41 grams/100 sq. in./day	0.02 grams/100 sq. in./day
<b>Odor</b>	Average	Average
<b>Oxygen Transmission Rate</b>	0.05 cc./100 sq. in./day	0.04 cc./100 sq. in./day
<b>Sealant Layer Performance Properties</b>		
<b>Caulk &amp; Flow</b>	Good	Good
<b>Hot Tack</b>	Good	Good
<b>Coefficient of Friction</b>	0.25 (Kinetic, seal to seal)	0.25 (Kinetic, seal to seal)
<b>Puncture Resistance</b>	Not Tested	Not Tested
<b>Seal Initiation Temperature</b>	300°F	300°F
<b>Seal Strength</b>	300°F/ 20 PSI/ 1.0 sec.	2500 (g/in) @ 350°F/ 20 PSI/ 0.5 sec.
<b>Seal through Contamination</b>	Good	Good
<b>Mullen Burst Strength</b>	Not Tested	Not Tested
<b>Material Strengths</b>	Clarity, EVOH provides excellent OTR barrier properties, good MVTR and hermetic seals for extended shelf life	Topcoated face with good OTR barrier properties (without Saran®), good MVTR, and hermetic seals for extended shelf life. White outside/ silver inside
<b>Packaging Applications</b>		
<b>Compliance</b>	21 CFR 177.1520 and/or 21 CFR 177.1350, 21 CFR 177.1330	21 CFR 177.1520, 21 CFR 178.3860, 21 CFR 176.170
<b>Dry Ingredients</b>	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes
<b>Liquids</b>	Yes	Not recommended
<b>End-Use Applications</b>	Spices, snacks and novelties requiring clear packaging and extra barrier. Hard to hold contents snacks and nuts	Dry snacks and powders

Flexible Packaging Film/Film Laminations

**Metallized Coffee Web 200 HB  
Spec# 79426**

**Clear Multi-Ply SUP 360 SB  
Spec # 79934**

Structure		
<b>Description</b>	Metallized PET face laminated to LLDPE film	Print treated PET laminated to Clear EVOH sealant
<b>Construction</b>	48 ga. metallized PET/Adh/1.5 Mil LLDPE film	48g Clear PET / 3M Clear EVOH/mLLDPE
<b>Total Construction Caliper</b>	2.0 mils	3.6 mils
<b>Printability / Ink Recommendations (Contact your ink supplier for best recommendation)</b>	Flexible Packaging Film Inks - Contact Ink Supplier	Print treated - Flexible Packaging Film Inks - Contact Ink Supplier
Exterior Layer Performance Properties		
<b>Dimension Stability</b>	Excellent	Excellent
<b>Flex Crack Resistance</b>	Good	Good
<b>Stiffness/Flexibility</b>	Average	Excellent
<b>Tear Resistance (grams-force)</b>	Not Tested	61 MD / 60 CD
Barrier Layer Performance Properties		
<b>Chemical Resistance</b>	Average	Average
<b>Light</b>	Poor	Poor
<b>Moisture Vapor Transmission Rate</b>	0.1 grams/100 sq. in./day	.35 grams/100 sq in / day
<b>Odor</b>	Average	Average
<b>Oxygen Transmission Rate</b>	0.1 cc/100 sq. in./day	.07 cc/ 100 sq in / day
Sealant Layer Performance Properties		
<b>Caulk &amp; Flow</b>	Good	Good
<b>Hot Tack</b>	Good	Good
<b>Coefficient of Friction</b>	0.2 (Kinetic, seal to seal)	.215 Kinetic (seal to seal)
<b>Puncture Resistance</b>	Not Tested	Good
<b>Seal Initiation Temperature</b>	300°F	290 F
<b>Seal Strength</b>		Destruct
<b>Seal through Contamination</b>	Good	Good
<b>Mullen Burst Strength</b>	Not Tested	Not Tested
<b>Material Strengths</b>	Topcoated face provides excellent printability and excellent UV, OTR and MVTR barrier properties and hermetic seals for extended shelf life.	Clarity, EVOH provides excellent OTR barrier, good hermetic seals for extended shelf life, high barrier and heavier sealant for stand up pouch with added ability to add reclosable functionality.
Packaging Applications		
<b>Compliance</b>	21CFR 177.1520, 177.1350, 178.2010, 178.3297 and 178.3860.	
<b>Dry Ingredients</b>	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes
<b>Liquids</b>	Not recommended	Yes
<b>End-Use Applications</b>	Coffee - single serve, ground coffee packages. Not suitable for coffee beans. Can be used for dry snacks like peanuts.	Food, Personal Care, Nutracuetical and Pet including snacks, pet foods, treats, personal care

Flexible Packaging Film/Film Laminations

**White Multi-Ply SUP 360 SB  
Spec # 79935**

**Clear Recyclable SUP 400 SB  
Spec # B1900**

Structure		
<b>Description</b>	Print treated PET laminated to Clear EVOH sealant	Corona treated Polyethylene laminated to Polyethylene
<b>Construction</b>	48g Clear PET / 3M White EVOH/mLLDPE	150G Polyethylene / 250G Polyethylene
<b>Total Construction Caliper</b>	3.6 mils	4.0 mils
<b>Printability / Ink Recommendations (Contact your ink supplier for best recommendation)</b>	Print treated - Flexible Packaging Film Inks - Contact Ink Supplier	Corona treated - Flexible Packaging Film Inks, HP Digital and EBeam - Contact Ink Supplier
Exterior Layer Performance Properties		
<b>Dimension Stability</b>	Excellent	Excellent
<b>Flex Crack Resistance</b>	Good	Excellent
<b>Stiffness/Flexibility</b>	Excellent	Excellent
<b>Tear Resistance (grams-force)</b>	78 MD / 58 CD	150 MD / 150 CD
Barrier Layer Performance Properties		
<b>Chemical Resistance</b>	Average	Average
<b>Light</b>	Excellent	Poor
<b>Moisture Vapor Transmission Rate</b>	.35 grams/100 sq in / day	.08 grams / 100 sq in / day
<b>Odor</b>	Average	Average
<b>Oxygen Transmission Rate</b>	.07 cc/ 100 sq in / day	.11 cc / 100 sq in / day
Sealant Layer Performance Properties		
<b>Caulk &amp; Flow</b>	Good	Good
<b>Hot Tack</b>	Good	Excellent
<b>Coefficient of Friction</b>	.239 Kinetic (seal to seal)	<.30 Kinetic (seal to seal)
<b>Puncture Resistance</b>	Good	Good
<b>Seal Initiation Temperature</b>	290 F	290 F
<b>Seal Strength</b>	Destruct	Destruct
<b>Seal through Contamination</b>	Good	Good
<b>Mullen Burst Strength</b>	Not Tested	Not Tested
<b>Material Strengths</b>	Good Opacity, EVOH provides excellent OTR barrier, good hermetic seals for extended shelf life, high barrier and heavier sealant for stand up pouch with added ability to add reclosable functionality.	Good contact clarity suitable for pre-formed pouches and traditional FFS, good hermetic seals for extended shelf likfe and added ability to add reclosable functionality. Fully recyclable.
Packaging Applications		
<b>Compliance</b>		
<b>Dry Ingredients</b>	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes
<b>Liquids</b>	Yes	No
<b>End-Use Applications</b>	Food, Personal Care, Nutracuetical and Pet including snacks, pet foods, treats, personal care	Dry goods: snack foods, nuts, grains, sweeteners, cookies, crackers, spices, seasonings, pet food and treats

Flexible Packaging Paper Laminations

	25# PFP 410 Spec# 79850	25# PFP w/Surlyn® 385 Spec# B4986	25# PPMOPP 250 Spec# 75746
<b>Structure</b>			
<b>Description</b>	Coated paper facestock with foil barrier and LDPE sealant	Coated paper facestock with foil barrier and Surlyn® sealant	Coated paper face with metallized OPP sealant
<b>Construction</b>	25# C1S/7.2# LDPE/Foil/13# LDPE	25# C1S/ 7.2# LDPE/Foil/ 22# Surlyn®	25# C1S/7# LDPE/Heat-Sealable MOPP
<b>Total Construction Caliper</b>	3.05 mils	3.8 mils	2.5 mils
<b>Printability / Ink Recommendations</b> (Contact your ink supplier for best recommendation)	Flexible Packaging paper inks.	Flexible Packaging paper inks.	Flexible Packaging paper inks.
<b>Exterior Layer Performance Properties</b>			
<b>Dimension Stability</b>	Excellent	Excellent	Excellent
<b>Flex Crack Resistance</b>	Average	Average	Good
<b>Stiffness/Flexibility</b>	Good	Good	Average
<b>Tear Resistance (grams-force)</b>	40 MD/58 CD	80 MD/80 CD	30 MD/33 CD
<b>Barrier Layer Performance Properties</b>			
<b>Chemical Resistance</b>	Average	Average	Average
<b>Light</b>	Excellent	Excellent	Excellent
<b>Moisture Vapor Transmission Rate</b>	0.000 grams/100 sq. in./day	0.001 grams/100 sq. in./day	0.008 grams/100 sq. in./day
<b>Odor</b>	Excellent	Excellent	Excellent
<b>Oxygen Transmission Rate</b>	.000 cc./100 sq. in./day	.000 cc./100 sq. in./day	1.0 cc./100 sq. in./day
<b>Sealant Layer Performance Properties</b>			
<b>Caulk &amp; Flow</b>	Good	Excellent	Average
<b>Hot Tack</b>	Good	Excellent	Good
<b>Coefficient of Friction</b>	.567 Kinetic (Seal to Seal)	.486 Kinetic (Seal to Seal)	.4 Kinetic (Seal to Seal)
<b>Puncture Resistance</b>	3.7 (pounds-force)	3.9 (pounds-force)	9.8 (pounds-force)
<b>Seal Initiation Temperature</b>	250°F	240°F	230°F
<b>Seal Strength</b>	2400 (g/in) @ 300°F/ 20 PSI/ 0.5 sec.	300°F/ 202400 (g/in) @ 300°F/ 20 PSI/ 0.5 sec. PSI/ 1.0 sec.	1000 (g/in) @ 350°F/ 20 PSI/ 0.5 sec.
<b>Seal through Contamination</b>	Good	Excellent	Poor
<b>Mullen Burst Strength</b>	30 psi	26 psi	46 psi
<b>Material Strengths</b>	Better quality print surface than uncoated facestock. Runs well and widely accepted on a variety of packaging equipment. PFP will tear open without initiation notch. Good Deadfold.	Surlyn® layer helps seal thru contamination when sealing. Runs well and widely accepted on a variety of packaging equipment.	Foil-less pouch stock contributes to better packaging durability. Test for packaging line machinability. Requires a notch to open.
<b>Packaging Applications</b>			
<b>Compliance</b>	21 CFR Sections 177.1520 and 177.1310, 21 CFR section 176.170 (c), Tables 1 and 2	21 CFR Sections 177.1520 and 177.1310, 21 CFR section 176.170 (c), Tables 1 and 2	FDA - CFR177.1520
<b>Dry Ingredients</b>	Yes	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes	No
<b>Liquids</b>	Not recommended	Not recommended	Not recommended
<b>End-Use Applications</b>	Lightweight packages such as dry powders and other dry packaged foods.	Lightweight packages such as light, dry powders and mixes that are difficult to seal due to contamination. Good for towelettes and airborne powder.	Lightweight packages such as soup mix and other dry packaged goods.

Flexible Packaging Paper Laminations

	35# C1S/ 14# LDPE 310 HB Spec# 79026	35# PPMOPP 315 Spec# 75742	35# PFP 385 Spec# 79851
<b>Structure</b>			
<b>Description</b>	Heavyweight coated paper facestock with LDPE sealant	Heavyweight coated paper face with metallized OPP sealant	Heavyweight coated paper facestock with foil barrier and LDPE sealant
<b>Construction</b>	35# C1S / 14# LDPE	35# C1S/7# LDPE/Heat Sealable MOPP	35# C1S / 7.2# LDPE/ Foil/13# LDPE
<b>Total Construction Caliper</b>	3.2 mils	3.15 mils	3.6 mils
<b>Printability / Ink Recommendations</b> (Contact your ink supplier for best recommendation)	Flexible Packaging paper inks.	Flexible Packaging paper inks.	Flexible Packaging paper inks.
<b>Exterior Layer Performance Properties</b>			
<b>Dimension Stability</b>	Good	Excellent	Excellent
<b>Flex Crack Resistance</b>	Good	Good	Average
<b>Stiffness/Flexibility</b>	Average	Average	Good
<b>Tear Resistance (grams-force)</b>	32.9 MD/43.1 CD	37.3 MD/44.8 CD	60 MD/50 CD
<b>Barrier Layer Performance Properties</b>			
<b>Chemical Resistance</b>	Poor	Average	Average
<b>Light</b>	Average	Excellent	Excellent
<b>Moisture Vapor Transmission Rate</b>	1.33 grams/100 sq. in./day	0.008 grams/100 sq. in./day	0.000 grams/100 sq. in./day
<b>Odor</b>	Average	Excellent	Excellent
<b>Oxygen Transmission Rate</b>	195 cc./100 sq. in./day	1.0 cc./100 sq. in./day	.001 cc./100 sq. in./day
<b>Sealant Layer Performance Properties</b>			
<b>Caulk &amp; Flow</b>	Good	Average	Good
<b>Hot Tack</b>	Good	Good	Good
<b>Coefficient of Friction</b>	.4 Kinetic (Seal to Seal)	.4 Kinetic (Seal to Seal)	.507 Kinetic (Seal to Seal)
<b>Puncture Resistance</b>	Not Tested	9.5 (pounds-force)	3.7 (pounds-force)
<b>Seal Initiation Temperature</b>	230°F	260°F	250°F
<b>Seal Strength</b>	325°F/ 20 PSI/ 0.3 sec.	1000 (g/in) @ 350°F/ 20 PSI/ 0.5 sec.	2400 (g/in) @ 300°F/ 20 PSI/ 0.5 sec.
<b>Seal through Contamination</b>	Poor	Poor	Good
<b>Mullen Burst Strength</b>	Not Tested	36 psi	35 psi
<b>Material Strengths</b>	Simple paper/poly lamination for dry goods with short shelf life and no exposure to moisture. Higher end to a sugar packet material.	Foil-less pouch stock contributes to better packaging durability and heavier weight paper provides packaging stiffness. Test for packaging line machinability. Material requires notch for opening.	Heavier weight paper provides packaging stiffness. Runs well and widely accepted on a variety of packaging equipment. Does not require a notch to open.
<b>Packaging Applications</b>			
<b>Compliance</b>	CFR title 21, Sections: 176.170 / 177.1520	21 CFR 177.1520(c)2.2	21 CFR Sections 177.1520 and 177.1310, 21 CFR section 176.170 (c), Tables 1 and 2
<b>Dry Ingredients</b>	Yes	Yes	Yes
<b>Powdered Ingredients</b>	Some	Yes	Yes
<b>Liquids</b>	Not recommended	Not recommended	Not recommended
<b>End-Use Applications</b>	Dry goods - short shelf life: candy, granular packets.	Applications requiring additional package stiffness and puncture resistance such as noodles or rice.	Applications requiring additional package stiffness, good deadfold and puncture resistance such as gravy and soup mixes.

**Flexible Packaging StickPack Laminations**

**White StickPak LDPE 290 HB  
Spec# 79340**

**White StickPak w/Metallocene 320 HB  
Spec# 78432**

Structure		
<b>Description</b>	Printable polyester-faced laminated pouching material designed for tubular form fill and seal equipment	Printable polyester - faced laminated pouch film design for tubular form / fill machines
<b>Construction</b>	48 ga. PET Film/White PE/ Foil/21.6# LDPE	48 ga. PET/10# (W)LDPE/ Foil/7#LDPE/1.25 Mil Metallocene
<b>Total Construction Caliper</b>	2.9 mils	3.2 mils
<b>Printability / Ink Recommendations</b> (Contact your ink supplier for best recommendation)	Flexible Packaging Film Inks.	Flexible Packagig Film Inks NOTE: must corona treated prior to printing
Exterior Layer Performance Properties		
<b>Dimension Stability</b>	Excellent	Excellent
<b>Flex Crack Resistance</b>	Very Good	Good
<b>Stiffness/Flexibility</b>	Good	Good
<b>Tear Resistance (grams-force)</b>	29.8 MD/40.8 CD	84.0 MD/90.5 CD
Barrier Layer Performance Properties		
<b>Chemical Resistance</b>	Average	Excellent
<b>Light</b>	Excellent	Excellent
<b>Moisture Vapor Transmission Rate</b>	0.0004 grams/100 sq. in./day	0.0004 grams/100 sq. in./day
<b>Odor</b>	Excellent	Excellent
<b>Oxygen Transmission Rate</b>	.01 cc./100 sq. in./day	.01 cc./100 sq. in./day
Sealant Layer Performance Properties		
<b>Caulk &amp; Flow</b>	Average	Excellent
<b>Hot Tack</b>	Average	Excellent
<b>Coefficient of Friction</b>	.015 (Kinetic, seal to seal)	0.23 (Kinetic, seal to steel)
<b>Puncture Resistance</b>	11 (pounds-force)	12.7 (pounds-force)
<b>Seal Initiation Temperature</b>	340°F	260°F
<b>Seal Strength</b>	7000 (g/in) @ 350°F/ 40 PSI/ 1.2 sec.	7000 (g/in) @ 350°F/ 20 PSI/ 0.5 sec.
<b>Seal through Contamination</b>	Good	Excellent
<b>Mullen Burst Strength</b>	55 psi	52.5 psi
<b>Material Strengths</b>	Good stickpak stock for general purpose. PET film offers high gloss and resists staining.	Excellent gloss. Good chemical resistance, printability and stiffness for packaging line machinability. COF allows this to run very well on multi-lane stickpack equipment
Packaging Applications		
<b>Compliance</b>	CFR title 21, Sections: 176.170 / 177.1520	21 CFR 176.170
<b>Dry Ingredients</b>	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes
<b>Liquids</b>	Not recommended	Some - Must Test
<b>End-Use Applications</b>	Dry goods packaged in vertical stickpak machines	Designed for high speed, tubular formed, powdered drink mix packets.

**Flexible Packaging StickPack Laminations**

**White or Silver StickPak w/Surlyn® 285 HB  
Spec# 79343 - White  
Spec# 79344 - Silver**

**White Cello StickPak Surlyn® Plus 320 HB  
Spec# B3891**

Structure	
<b>Description</b>	Printable polyester-faced laminated pouching material design for tubular form/fill/seal equipment.
<b>Construction</b>	48 ga. PET/10# WLDPE/Foil/18# SURLYN®
<b>Total Construction Caliper</b>	2.85 mils
<b>Printability / Ink Recommendations</b>	Flexible Packaging Film Inks.
Exterior Layer Performance Properties	
<b>Dimension Stability</b>	Excellent
<b>Flex Crack Resistance</b>	Good
<b>Stiffness/Flexibility</b>	Good
<b>Tear Resistance (grams-force)</b>	38.4 MD / 44.8 CD
Barrier Layer Performance Properties	
<b>Chemical Resistance</b>	Excellent
<b>Light</b>	Excellent
<b>Moisture Vapor Transmission Rate</b>	0.0004 grams / 100 sq in /day
<b>Odor</b>	Excellent
<b>Oxygen Transmission Rate</b>	.01 cc./100 sq. in./day
Sealant Layer Performance Properties	
<b>Caulk &amp; Flow</b>	Average
<b>Hot Tack</b>	Average
<b>Coefficient of Friction</b>	0.4 (Kinetic, seal to steel)
<b>Puncture Resistance</b>	13.4 (pounds-force)
<b>Seal Initiation Temperature</b>	250°F
<b>Seal Strength</b>	4000 grams @ 350°F/ 40 PSI .5 sec
<b>Seal through Contamination</b>	Excellent
<b>Mullen Burst Strength</b>	48.8 psi
<b>Material Strengths</b>	Excellent gloss. Good chemical resistance and printability. Best seal thru contamination product
Packaging Applications	
<b>Compliance</b>	21 CFR 177.1330(a)
<b>Dry Ingredients</b>	Yes
<b>Powdered Ingredients</b>	Yes
<b>Liquids</b>	Some - Must Test
<b>End-Use Applications</b>	Applications requiring excellent seal through contamination properties such as high dust environments, and high oil or fat concentrations. Drink mixes, sugar sweeteners for retail and food service packaging, nutritional supplements.

  

<b>Description</b>	Easy Tear Cellulose faced laminated pouch material designed for tubular form/fill machines.
<b>Construction</b>	75 ga film/10# WLD/Foil/18# Surlyn®
<b>Total Construction Caliper</b>	3.2 mils
<b>Printability / Ink Recommendations</b>	Flexible Packaging Film Inks.
Exterior Layer Performance Properties	
<b>Dimension Stability</b>	Excellent
<b>Flex Crack Resistance</b>	Excellent
<b>Stiffness/Flexibility</b>	Good
<b>Tear Resistance (grams-force)</b>	44 MD / 47.6 CD
Barrier Layer Performance Properties	
<b>Chemical Resistance</b>	Excellent
<b>Light</b>	Excellent
<b>Moisture Vapor Transmission Rate</b>	0.0004 grams / 100 sq in /day
<b>Odor</b>	Excellent
<b>Oxygen Transmission Rate</b>	.01 cc./100 sq. in./day
Sealant Layer Performance Properties	
<b>Caulk &amp; Flow</b>	Average
<b>Hot Tack</b>	Average
<b>Coefficient of Friction</b>	0.15 (Kinetic, seal to steel)
<b>Puncture Resistance</b>	13.4 (pounds-force)
<b>Seal Initiation Temperature</b>	230°F
<b>Seal Strength</b>	4000 grams @ 350°F/ 20 PSI .5 sec
<b>Seal through Contamination</b>	Excellent
<b>Mullen Burst Strength</b>	57.2 psi
<b>Material Strengths</b>	Bio-Based film face with excellent gloss. Good chemical resistance, printability and stiffness for packaging line machinability. Note: No notch required to open
Packaging Applications	
<b>Compliance</b>	CFR title 21, Sections: 179.3910 / 177.1520
<b>Dry Ingredients</b>	Yes
<b>Powdered Ingredients</b>	Yes
<b>Liquids</b>	Some - Must Test
<b>End-Use Applications</b>	Excellent seal through contamination properties such as high dust environments, and high oil or fat concentrations. Designed for high speed, tubular forms. Common usages: powdered drink mix packets sugar sweeteners for retail, food service packaging and nutritional supplements. Designed to tear easily with no notching required.



**Flexible Packaging Film/Foil Laminations**

	<b>White Cosmetic Web 350 SB Spec# 75758</b>	<b>White or Silver Cosmetic Web 350 HB Spec# 79332 - White Spec# 79333 - Silver</b>	<b>White Sustainable Cosmetic Web 350 HB Spec #B1885</b>
<b>Structure</b>			
<b>Description</b>	White PET faced laminated pouch film	White PET faced laminated pouch film	White print treated PCR PET laminated pouch film
<b>Construction</b>	48 ga. PET/10# WLDPE/Foil/10# HB/PE/1.5 Mil LLDPE Film	48 ga. PET/10# WLDPE/Foil/10# HB/PE/1.5 Mil Metallocene Film	48g PCR PET/ 10# WLDPE/Foil/1-# HB-PE/1.5M Bio -Based PE
<b>Total Construction Caliper</b>	3.5 mils	3.5 mils	3.5 mils
<b>Printability / Ink Recommendations</b> (Contact your ink supplier for best recommendation)	Flexible Packaging Film Inks - Contact Ink Supplier	Flexible Packaging Film Inks - Contact Ink Supplier	Flexible Packaging Film Inks - Contact Ink Supplier
<b>Exterior Layer Performance Properties</b>			
<b>Dimension Stability</b>	Excellent	Excellent	Excellent
<b>Flex Crack Resistance</b>	Good	Good	Good
<b>Stiffness/Flexibility</b>	Average	Average	Average
<b>Tear Resistance (grams-force)</b>	59 MD/72 CD	57 MD/67 CD	114.4 MD / 162.3 CD
<b>Barrier Layer Performance Properties</b>			
<b>Chemical Resistance</b>	Good	Good	Good
<b>Light</b>	Excellent	Excellent	Excellent
<b>Moisture Vapor Transmission Rate</b>	0.0004 grams/100 sq. in./day	0.0004 grams/100 sq. in./day	.0004 grams/100 sq in / day
<b>Odor</b>	Excellent	Excellent	Excellent
<b>Oxygen Transmission Rate</b>	.01 cc./100 sq. in./day	.01 cc./100 sq. in./day	.01 cc/ 100 sq in / day
<b>Sealant Layer Performance Properties</b>			
<b>Caulk &amp; Flow</b>	Good	Good	Good
<b>Hot Tack</b>	Good	Good	Good
<b>Coefficient of Friction</b>	0.34	0.35	.15 Kinetic
<b>Puncture Resistance</b>	14.7 (pounds-force)	14.7 (pounds-force)	Not Tested
<b>Seal Initiation Temperature</b>	340°F	300°F	350°F
<b>Seal Strength</b>	7000 (g/in) @ 350°F/ 40 PSI/ 0.5 sec.	7000 (g/in) @ 350°F/ 40 PSI/ 0.5 sec.	>10 lbs
<b>Seal through Contamination</b>	Good	Excellent	Good
<b>Mullen Burst Strength</b>	58 psi	54.9 psi	Not Tested
<b>Material Strengths</b>	Excellent gloss. Good barrier for both liquid and dry goods.	Excellent gloss. Good barrier for both liquid and dry goods. Good seal thru contamination with added chemical resistance and a wide seal temperature range.	Excellent gloss. Good barrier for both liquid and dry goods. Can be tested for applications using virgin cosmetic web. Provides 12% virgina material reduction using both PCR and bio-based resins.
<b>Packaging Applications</b>			
<b>Compliance</b>	21 CFR 176.170	21 CFR 176.170 and 21 CFR 177.1350.	
<b>Dry Ingredients</b>	Yes	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes	Yes
<b>Liquids</b>	Some	Some	Yes
<b>End-Use Applications</b>	General purpose wipes, lotions, shampoos, conditioners and other personal care items	General purpose wipes, lotions, shampoos, conditioners and other personal care items	Wet and dry goods in food, cosmetic, nutraceutical and per food/ treats.

**Flexible Packaging Film/Foil Laminations**

	<b>White or Silver Cosmetic Web Ultra 370 HB Spec# 77553 - White Spec# 78857 - Silver</b>	<b>White or Silver Cosmetic Ultra Plus 530 HB Spec# 79334 - White Spec# 79335 - Silver</b>	<b>ChemControl Ultra Spec# 54025</b>	<b>ChemControl Premium Ultra Spec# 79537</b>
<b>Structure</b>				
<b>Description</b>	White PET faced laminated pouch film	White PET faced laminated pouch film	White PET faced laminated pouch film	White PET faced laminated pouch film
<b>Construction</b>	48 ga. PET/10# WLDPE/Foil/10# ACP/1.5 Mil LLDPE	48 ga. PET/12# WLDPE/Foil/12# ACP/3 Mil Metallocene F	48G PET/WLDPE/FOIL/ADH / 2M HB SEALANT	48G PET/WLDPE/FOIL/ADH/ BARRIER FILM/ADH/2M PE
<b>Total Construction Caliper</b>	3.7 mils	5.3 mils	3.6 mils	4.3 mils
<b>Printability / Ink Recommendations</b> (Contact your ink supplier for best recommendation)	Flexible Packaging Film Inks - Contact Ink Supplier	Flexible Packaging Film Inks - Contact Ink Supplier	Flexible Packaging Film Inks - Contact Ink Supplier	Flexible Packaging Film Inks - Contact Ink Supplier
<b>Exterior Layer Performance Properties</b>				
<b>Dimension Stability</b>	Excellent	Excellent	Excellent	Excellent
<b>Flex Crack Resistance</b>	Good	Good	Good	Good
<b>Stiffness/Flexibility</b>	Average	Good	Average	Average
<b>Tear Resistance (grams-force)</b>	50 MD/75 CD	96 MD/134 CD		124 CD/55MD
<b>Barrier Layer Performance Properties</b>				
<b>Chemical Resistance</b>	Excellent	Excellent	Excellent	Excellent
<b>Light</b>	Excellent	Excellent	Excellent	Excellent
<b>Moisture Vapor Transmission Rate</b>	0.0004 grams/100 sq. in./day	0.0004 grams/100 sq. in./day	<0.02 grams/100 sq. in./day	0.002 grams/100 sq. in./day
<b>Odor</b>	Excellent	Excellent	Excellent	Excellent
<b>Oxygen Transmission Rate</b>	.01 cc./100 sq. in./day	.01 cc./100 sq. in./day	<.02 cc./100 sq. in./day	.002 cc./100 sq. in./day
<b>Sealant Layer Performance Properties</b>				
<b>Caulk &amp; Flow</b>	Good	Good	Good	Good
<b>Hot Tack</b>	Good	Good	Good	Good
<b>Coefficient of Friction</b>	0.4	0.29	.35 Kinetic (seal to seal)	.4 Kinetic (seal to seal)
<b>Puncture Resistance</b>	14.2 (pounds-force)	174 (pounds-force)	Not Tested	Not Tested
<b>Seal Initiation Temperature</b>	340°F	340°F	230°F	340°F
<b>Seal Strength</b>	7000 (g/in) @ 350°F/ 40 PSI/ 0.5 sec.	7000 (g/in) @ 350°F/ 40 PSI/ 0.5 sec.	4535 (g/in) @ 350°F/ 40 PSI/ 0.5 sec.	7000 (g/in) @ 350°F/ 40 PSI/ 1.0 sec.
<b>Seal through Contamination</b>	Good	Excellent	Excellent	Good
<b>Mullen Burst Strength</b>	58 psi	60.2 psi		Not Tested
<b>Material Strengths</b>	Excellent gloss. Excellent chemical resistance for wet and dry goods.	Excellent gloss. Excellent chemical resistance for wet and dry goods requiring superior seal and burst strength.	Treated facestock with high barrier sealant film for hard to hold ingredients. Excellent seal strength.	C1S facestock with excellent barrier and seal strength for ease of packaging and containing aggressive and volatile ingredients.
<b>Packaging Applications</b>				
<b>Compliance</b>	21 CFR 176.170 and 21 CFR 177.1350.	21 CFR 176.170 and 21 CFR 177.1350.	FDA - 175.105, 177.1520, 177.1630 AND 178.3910	FDA - 175.105, 176.170, 177.1520, 177.1630 AND 178.201
<b>Dry Ingredients</b>	Yes	Yes	Yes	Yes
<b>Powdered Ingredients</b>	Yes	Yes	Yes	Yes
<b>Liquids</b>	Some	Yes	Yes	Yes
<b>End-Use Applications</b>	Products requiring extra barrier due to aromatic or aggressive ingredients such as sun tan lotion.	Products requiring extra barrier due to aromatic or aggressive ingredients such as sun tan lotion. Superior seal and burst strength to withstand mail and transportation.	Designed for hard to hold ingredients requiring extra chemical resistance. Fit for Use Testing is recommended	Designed for volatile ingredients requiring highest chemical resistance. Fit for Use Testing is recommended

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ADV #471 12/2022

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