Film for Flexible Packaging

Scholle IPN | Simply **Flexible**™

Simply Flexible.

Our Mission

The Scholle IPN Difference

Scholle IPN's mission is simple; to help the world's leading brands deliver their products in the best way possible using a diverse range of total flexible packaging solutions. We are tenacious innovators with a long history of applying technology in film, fitments, and equipment to solve difficult packaging problems.

Our products are manufactured everywhere so we can serve anywhere with a flexible, "can-do" attitude.

We believe we are a critical partner to creating and maintaining a sustainable future and do things differently to meet these important goals.

Scholle IPN is many things. But above all, we are Simply Flexible.

Scholle IPN

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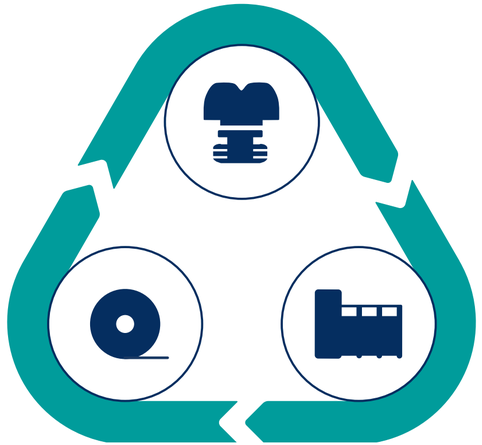
Film. Fitment. Equipment.

A Total Packaging Solution

Our mission is simple; to help the world's leading brands deliver their products in the best way possible. We do this by combining films, fitments, and equipment to help you go-to-market simply and quickly with a total flexible packaging solution tailored to your specific needs.



Film

- We extrude, laminate, and print flexible, barrier films designed to meet your rigorous product specifications.
- We have one- to nine-layer films, as well as recyclable, mono-material structures.

Fitment

- We injection mold and assemble fitments designed to provide an ergonomic interaction with your product for all ages and abilities.
- Our taps, connectors, and caps are designed to suit your needs –whether that's on a retail shelf, a fast-paced restaurant operation, or industrial use.

Equipment

- We design and manufacture equipment for both pre-made and form-fill-seal style bag-in-box and pouch filling. Whether you operate a startup, or a full-scale, automated operation, we have a solution for you.
- Our filling equipment offers great flexibility in process compatibility from ambient, to ultra-clean, to aseptic.

Flexible Efficiency.

Why Choose Flexible Packaging?
Effective Use of Resources

Maximized performance
due to unrivalled quality design and engineering.

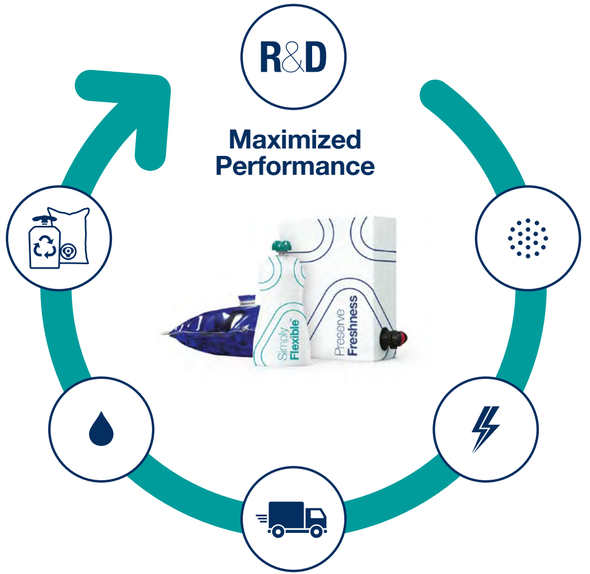
Less raw material
and natural resources used during production.

Less energy
required during production and transportation.

Less transportation
required with more efficient logistics.

Less product waste
with excellent shelf life capabilities to keep product fresher, longer.

Less package waste
with optimized product-to-pack ratio and recyclable options.



The Brands We Serve

Our Approach to Film
Designed for Protection

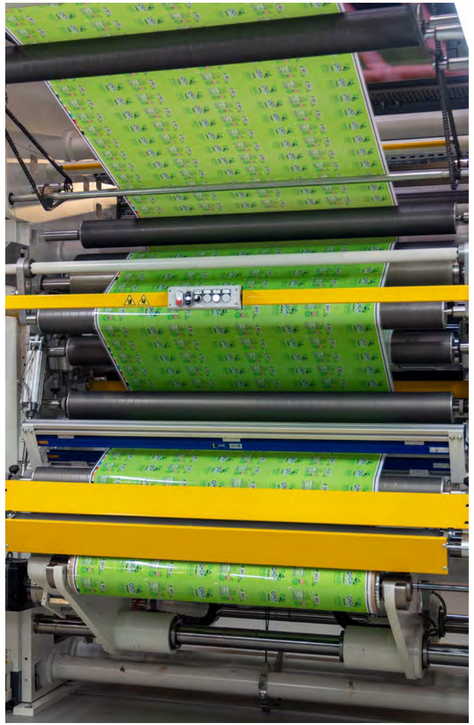
We extrude, laminate, and deliver printed barrier film designed to meet your product specifications. Our wide range of solutions includes everything from one- to nine-layer films, as well as recyclable, mono-material structures.

- Our films are designed with focus on optimized functionality and fit for sealing to fitments.
- Our films are manufactured to protect your product and withstand the rigors of difficult supply chains.
- Our vertical integration and global footprint ensure competitive pricing and supply contingencies.
- Our Industry 4.0 approach to manufacturing uses data, automation, and robotization wherever possible.

Mono-Material:
We focus on design for the circular economy. Producing mono-material film enables the finished packaging to be more-easily recycled and thus, have value after their initial lifespan.

Fit-For-Purpose:
Heavy, rigid packaging formats require more energy to produce, transport, and store. Because flexible packaging has the capability of being downgauged to an ideal, lightweight film structure, the resulting environmental scores can be optimized.

Environmentally-Conscious:
Flexible film—and the packaging it helps create—often has less process and delivery waste than most rigid containers. The resulting greenhouse gas emissions are often favorable for flexible.



Our Capabilities
Extrusion and Lamination

We have extensive experience developing unique film blends which provide the ultimate protection and package performance for a diverse range of flowable products.

From time-sensitive, fresh foods and beverages, to aggressive chemicals and sensitive pH products, our flexible packaging solutions are designed to protect your product and keep it safe from fill through final dispensing. We offer:

- Recyclable film solutions that enable you on your journey towards a more circular economy.
- Barrier protection designed to keep your product safe and extend secondary shelf life.
- Solutions that fits seamlessly where you need them, whether in retail, institutional, or industrial applications.

Innovative Design for the Circular Future

Our products and processes are built to realize a significant reduction in the use of fossil materials and related CO_2 footprint while providing a positive consumer experience.

Protection

Barrier film and flex-crack resistance technology, combined with our leading dispensing systems, provides maximum protection for both the product and end user.

Sealability

Our film range includes products which can fit your equipment's preferred sealing method. From heat, to ultra-sonic, to next-generation, energy-efficient methods.

Recyclable

Whenever possible, our films are designed to have simple, mono-material construction to aid in recyclability of finished packaging.

Recyclable Film Technology

Providing a Wide Range of Environmental Benefits

Printing Options

We surface-print films using a solvent-free ink.

Solventless Lamination

Eliminating solvents from the lamination process eliminates related greenhouse gas emissions.

Co-Extruded Films

By eliminating lamination from some of our structures, we use less energy and chemicals during film production. These structures are simpler, aiding in recyclability.

Lightweight Structures

By using fewer base materials, we can save raw materials throughout the supply chain.

Eliminate Aluminum

Barrier technology in plastics has progressed to a point where we no longer need to incorporate environmentally-costly metals.

Materials Science and Development

We strive to be the best total flexible packaging solutions supplier, from development to production to service. We apply a scientific approach to all our R&D processes to offer innovative packaging solutions that fit your unique requirements.

Our extensive experience developing unique film blends and fitment designs provides protection and performance for a diverse range of products from dairy to battery acid. And, with globally-placed production capabilities and localized expertise, we can ensure your packaging solution is made with leading technology and quality.

The key to this expertise lies in our Materials Science Laboratory and partnerships with leading universities and innovation firms.

Purdue University

For decades, we have partnered with Purdue University, known for their expertise in aseptic food and beverage production and packaging technology. Together, we educate food technologists from around the world and help innovative brands explore the value of aseptic.

Differential scanning calorimetry analysis for polymers.

Our fully-equipped materials science lab is staffed by expert scientists and technicians with chemistry and engineering backgrounds who develop testing methods, supporting all of our locations across the globe. The team helps verify and ensure that our products meet goals and regulations and protect customers' products from filling through final dispensing.

All work done in the lab can be broken down into four types of projects:

Research and Development

Our labs work closely with product development engineers to confirm production and functional specifications for new fitment and film innovations through extensive testing protocols.

Manufacturing Support

We are constantly working to find a simpler way to make products. The lab determines if new film and fitment upgrades meet specifications and confirms quality at every step of the production process.

Commercial Support

Ensuring product and package compatibility is critical to success. The labs perform sensory, shelf-life, and ship testing for all new innovations or any application change our customers explore.

Quality Support

Our labs use a number of mechanical, chemical, and application tests to determine the root cause of any quality issues and to guide R&D teams toward designing the best flexible packaging possible.

Materials Science Lab Capabilities

Our labs use a wide range of state-of-the-art testing equipment and analysis processes which cover polymers and applications testing.

Analytical Testing

Material Identification
Allows us to determine source materials.
- Differential Scanning Calorimetry
- Polymer Degradation Analysis
- ATR-FTIR and FTIR Microscopy
- Gas Chromatography

Additive Analysis and Extractions
Tests different film combinations.
- Slip
- Antioxidant
- Anitblock

Barrier Testing
Measurements of barrier properties of film.
- Oxygen Transmission Rate (OTR)
- Moisture Vapor Transmission Rate (MVTR)
- Optical Density

Microscope Analysis
Allows for analysis of film and fitment defects.
- Film cross-section (Microtome)

Applications Testing

Bag Tests
Simulation of events bags could experience in real-life situations.
- Drop Test
- Shelf Life
- Seal Strength
- Burst and Maintain

Shaker Table
Simulation of extreme road and rail conditions.
- Checks for main failure analysis
- Bag durability
- Corrugate containers and drums

Dispensing
Testing aimed to minimize product waste.
- Product evacuation rates
- Analysis for ideal dispensing conditions and specifications

Mechanical Testing - Film

Strength
Measures how much force is required to break or deform the bag.
- Tensile
- Elongation
- Tear
- Puncture

Physical Properties
Measures general properties of the film for adherence to Scholle IPN standards.
- Modulus
- Peel Force
- Gauge

Gelbo Flex Testing
Measures how much the film can be flexed before degradation.
- Flex Durability

Coefficient of Friction (COF)
Measures COF for efficiency in filling.
- Slip content in film
- Statistics and dynamics of film movement on surfaces.

Mechanical Testing - Fitments

Instron (Force Testing)
Measures the force needed to seat—and unseat—the spout from the cap.
- Compression
- Removal
- Peel
- Actuation

Functionality
Tests for leaks between the spout and cap to ensure hermeticity.
- Pressure methods:
  - PSI (submerged)
  - ATEQ

Torque
Measures force needed to twist fitments into place.
- Manual test

Leak Testing
Tests for end-use functionality.
- Drip- and Flow-Rate
- Spring Rebound Testing
- Environmental Stress Crack Resistance (ESCR)

What We Offer

Our Catalog of Films

Our knowledgeable engineers work with customers to successfully design unique and valuable film solutions for any market. We strive to delight demanding end-users through innovative technology and consistent delivery of reliable barrier films.

Trusted By:

Coca-Cola · SUNTORY · ECOLAB · DANONE ONE PLANET. ONE HEALTH · GoGo squeeZ

Shell · Asahi · 李錦記 LEE KUM KEE · PEPSICO · Saputo

GROUPE LACTALIS · Fonterra · CONCHA Y TORO · Nestlé · DELICATO Family Wines

2Pure® Film for Bags

Film Structure

This one-layer film was specifically developed for ozonated water packaging. Unlike most polyethylene-based films, 2Pure offers a taint- and odor-free water package.

- Designed for fresh-tasting water
- Ideal for bag-in-box applications
- Mono-material construction

Key Market Applications

- Water

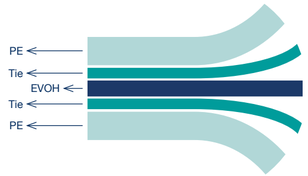
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 1800 g/25mm | TD: 1300 g/25mm
Elongation at Break	ASTM D-882	MD: 480% | TD: 540%
Puncture Resistance	ASTM D-3420	1100 g
Oxygen Transmission	ASTM F-1927	N/A
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.75

Technical Data

Gauge	1.6 mils / 41 µ
Film Process	Mono-film
Print-Capable	Yes - Surface Print
Key Barrier	None
Known Process Applicatons	Ambient
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

ClearShield™ 20 Film for Bags



Film Structure

This five-layer film features thickness and heat-resistance that enables high-temperature filling commonly found in fruit processing.

- Available in a range of gauges up to 4.6mils
- Good barrier and resistance to heat

Key Market Applications

- Processed Fruits

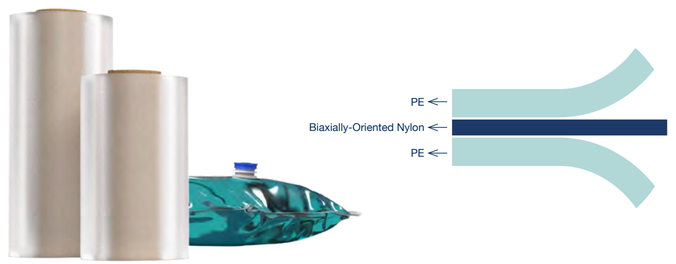
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 5100 g/25mm | TD: 4100 g/25mm
Elongation at Break	ASTM D-882	MD: 250% | TD: 200%
Puncture Resistance	ASTM D-3420	200 g
Oxygen Transmission	ASTM F-1927	1.1 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.20

Technical Data

Gauge	2.0 mils / 51 µ
Film Process	Co-Extruded
Print-Capable	Yes - Surface Print
Key Barrier	Oxygen Transmission Rate (OTR)
Known Process Applicatons	Hot-Fill Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

DuraTech™ 32 Film for Bags



Film Structure

This three-layer, BON thermal laminate works well in non-barrier bag-in-box applications.

- BON for durability
- Ideal for bag-in-box applications
- Excellent aroma barrier for chemical products

Key Market Applications

- Agricultural Chemicals
- Automotive Fluids
- Cleaning Chemicals
- Coatings
- Fruits & Vegetables
- Soft Drinks

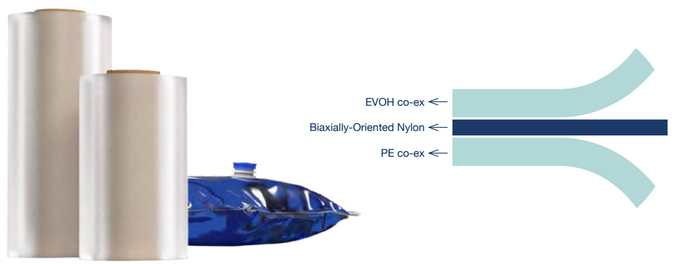
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 10500 g/25mm | TD: 10500 g/25mm
Elongation at Break	ASTM D-882	MD: 90% | TD: 100%
Puncture Resistance	ASTM D-3420	3700 g
Oxygen Transmission	ASTM F-1927	46.5 cc 100% O_2/m²/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.10

Technical Data

Gauge	3.2 mils / 81 µ
Film Process	Laminate
Print-Capable	No
Key Barrier	Aroma
Known Process Applicatons	Ambient Hot-Fill Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

DuraShield™ 34 Film for Bags



Film Structure

This clear, three-layer, thermal laminate film was developed to provide strong seals, extraordinary bag toughness, and superior flex-crack resistance.

- Aseptic-capable
- EVOH co-extruded film for oxygen barrier with BON for durability
- Available in gauge range from 3.4-5.0 mils

Key Market Applications

- Alcoholic Beverages
- Coffee and Tea
- Dairy
- Juice
- Nutraceuticals
- Water

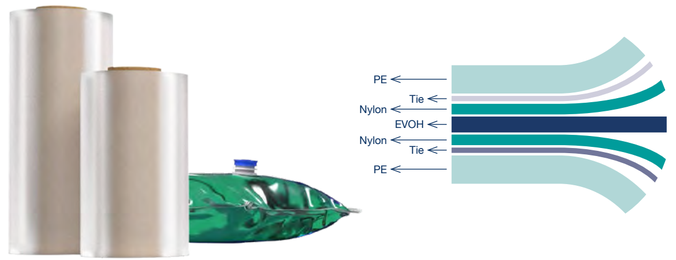
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 8000 g/25mm | TD: 9000 g/25mm
Elongation at Break	ASTM D-882	MD: 125% | TD: 80%
Puncture Resistance	ASTM D-3420	1600 g
Oxygen Transmission	ASTM F-1927	0.8 cc 100% O_2/m²/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.12

Technical Data

Gauge	3.4 mils / 85 µ
Film Process	Laminate
Print-Capable	No
Key Barrier	Oxygen Transmission Rate (OTR)
Known Process Applicatons	Ambient Ultra-Clean (ESL) Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

EnduraShield™ 41W Film for Bags



Film Structure

This seven-layer Nylon/EVOH/Nylon co-extruded film was designed for bag and VFFS applications that require a high barrier.

- Works well in bag and VFFS applications
- Available in gauge range from 1.5-6.0 mils

Key Market Applications

- Condiments
- Sauces
- Dairy

Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 6900 g/25mm | TD: 7200 g/25mm
Elongation at Break	ASTM D-882	MD: 420% | TD: 460%
Puncture Resistance	ASTM D-3420	1100 g
Oxygen Transmission	ASTM F-1927	0.9 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.18

Technical Data

Gauge	4.0 mils / 102 µ
Film Process	Co-Extruded
Print-Capable	Yes - Surface Print
Key Barrier	Oxygen Transmission Rate (OTR)
Known Process Applicatons	Ambient
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

FlexiProof™ 20 Film for Bags

Film Structure

This one-layer film was developed to provide outstanding organoleptic properties for high-percentage alcoholic beverages and liquids.

- Strong package sealability
- Mono-material construction

Key Market Applications

- Alcoholic Beverages

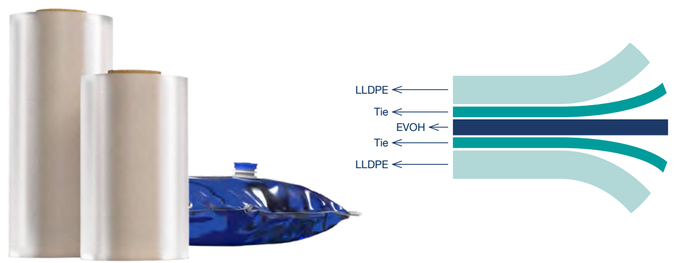
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 4300 g/25mm | TD: 3500 g/25mm
Elongation at Break	ASTM D-882	MD: 600% | TD: 700%
Puncture Resistance	ASTM D-3420	520 g
Oxygen Transmission	N/A	N/A
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.45

Technical Data

Gauge	1.9 mils / 48 µ
Film Process	Mono-film
Print-Capable	Yes - Surface Print
Key Barrier	Moisture Transmission (MVTR)
Known Process Applicatons	Ambient
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

FlexiShield™ 20 Film for Bags



Film Structure

This five-layer film works well bag and VFFS applications.

- Ideal for dairy applications
- Aseptic-capable
- Oxygen barrier film
- Available in gauge range from 2.0-5.0 mils

Key Market Applications

- Dairy

Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 3100 g/25mm | TD: 2900 g/25mm
Elongation at Break	ASTM D-882	MD: 300% | TD: 400%
Puncture Resistance	ASTM D-3420	450 g
Oxygen Transmission	ASTM F-1927	<1.6 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.14

Technical Data

Gauge	2.0 mils / 50.8 µ
Film Process	Co-Extruded
Print-Capable	Yes - Surface Print
Key Barrier	Oxygen Transmission Rate (OTR)
Known Process Applicatons	Ambient Form-Fill-Seal Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

FlexiTech™ 15 Film for Bags

Film Structure

This one-layer, metallocene-based polyethylene, non-barrier film, was developed to provide strong seals and robust package performance.

- Excellent protection from flex-cracking during transit
- Robust structure with good puncture resistance

Key Market Applications

- Alcoholic Beverages
- Dairy

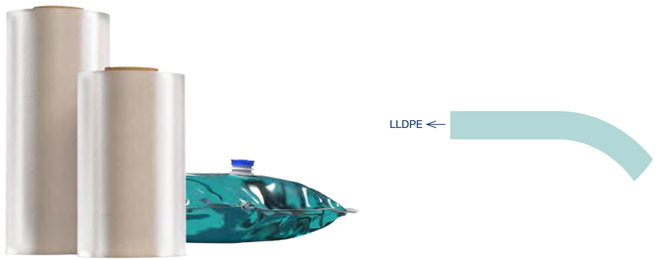
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 3900 g/25mm | TD: 2900 g/25mm
Elongation at Break	ASTM D-882	MD: 500% | TD: 700%
Puncture Resistance	ASTM D-3420	700 g
Oxygen Transmission	ASTM F-1927	N/A
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.14

Technical Data

Gauge	1.5 mils / 38µ
Film Process	Mono-film
Print-Capable	Yes - Surface Print
Key Barrier	None
Known Process Applicatons	Ambient Ultra-Clean (ESL)
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

FlexiTuff™ 18 Film for Bags



Film Structure

This one-layer film uses linear-low density polyethylene to form a non-barrier film that provides strong seals and performance in hot-fill and aseptic applications.

- Excellent performance in containing aggressive liquids
- Available in gauges in 1.8-4.0 mils

Key Market Applications

- Processed Fruits & Vegetables
- Cleaning Chemicals
- Agricultural Chemicals
- Automotive Fluids

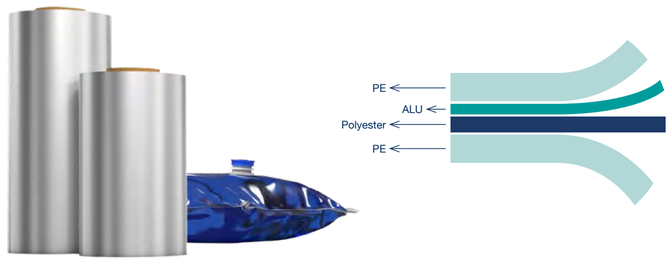
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 3500 g/25mm | TD: 2900 g/25mm
Elongation at Break	ASTM D-882	MD: 600% | TD: 700%
Puncture Resistance	ASTM D-3420	540 g
Oxygen Transmission	ASTM F-1927	N/A
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.14

Technical Data

Gauge	1.8 mils / 46 µ
Film Process	Mono-film
Print-Capable	Yes - Surface Print
Key Barrier	None
Known Process Applicatons	Ambient Ultra-Clean (ESL) Hot-Fill Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

HyBar® 28 Film for Bags



Film Structure

This three-layer, MPET thermal laminate works well for bag-in-box applications requiring barrier to oxygen and UV.

- Ideal for light-sensitive products
- Available in gauges from 2.8 mils to 4.5 mils

Key Market Applications

- Alcoholic Beverages
- Coffee & Tea
- Dairy
- Juice
- Nutraceuticals
- Water

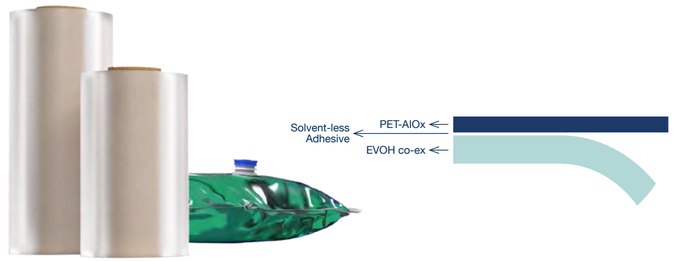
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 8500 g/25mm | TD: 7800 g/25mm
Elongation at Break	ASTM D-882	MD: 140% | TD: 170%
Puncture Resistance	ASTM D-3420	1400 g
Oxygen Transmission	ASTM F-1927	0.6 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	2.75
Kinetic COF	ASTM D-1894	0.10

Technical Data

Gauge	2.8 mils / 70 µ
Film Process	Laminate
Print-Capable	No
Key Barrier	Oxygen Transmission Rate (OTR)
Known Process Applicatons	Ambient Ultra-Clean (ESL)
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

OptiShield™ Film for Bags



Film Structure

This two-layer, adhesive laminate film was developed to provide shelf-life equivalent to foil.

- Similar barrier to foil
- Aseptic-capable
- Provides transparency for retail products

Key Market Applications

- Baby & Toddler Food
- Condiments & Sauces
- Dairy
- Fruits & Vegetables
- Smoothies
- Spreads & Toppings

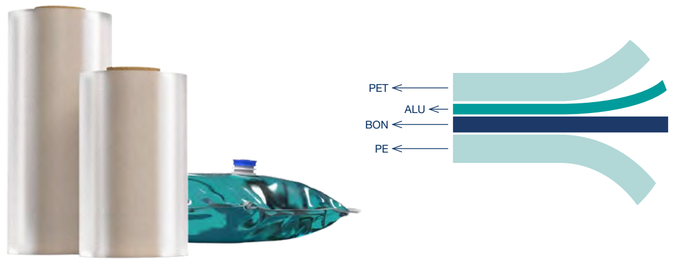
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 8400 g/25mm | TD: 8600 g/25mm
Elongation at Break	ASTM D-882	MD: 90% | TD: 90%
Puncture Resistance	ASTM D-3420	1000 g
Oxygen Transmission	ASTM F-1927	<0.2 cc 100% O_2/m²/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.25

Technical Data

Gauge	4.0 mils / 101 µ
Film Process	Laminate
Print-Capable	Yes - Reverse Print
Key Barrier	Oxygen Tranmission Rate (OTR)
Known Process Applicatons	Ambient Hot-Fill Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA food contact regulations.

UltraBar™ Film for Bags



Film Structure

This four-layer, foil based adhesive laminate film is engineered for bulk institutional and industrial-sized bag-in-box packaging used in high-humidity environments.

- Aseptic-capable
- High-barrier capabilities

Key Market Applications

- Baby & Toddler Food
- Beauty & Personal Care
- Condiments & Sauces
- Dairy
- Fruits & Vegetables
- Smoothies

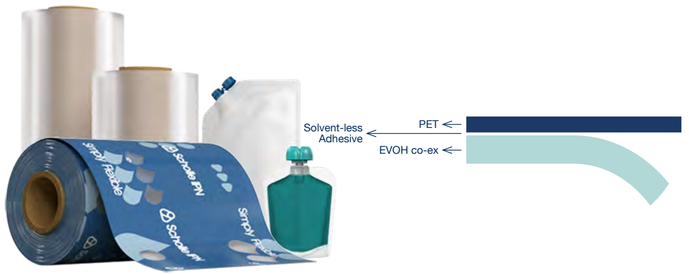
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 21,500 g/25mm | TD: 21,400 g/25mm
Elongation at Break	ASTM D-882	MD: 100% | TD: 90%
Puncture Resistance	ASTM D-3420	15600 g
Oxygen Transmission	ASTM F-1927	<0.2 cc 100% O_2/m²/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.31

Technical Data

Gauge	4.9 mils / 125 µ
Film Process	Laminate
Print-Capable	Yes - Reverse Print
Key Barrier	Oxygen Tranmission Rate (OTR)
Known Process Applicatons	Ambient Hot-Fill Ultra-Clean (ESL) Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA food contact regulations.

ClearShield™ 48 Film for Pouches



Film Structure

This two-layer, adhesive laminate film was developed to provide shelf-life equivalent to foil.

- Available in a range of gauges up to 7.1mils
- Good barrier and resistance to heat

Key Market Applications

- Baby & Toddler Food
- Condiments & Sauces
- Cleaning Chemicals

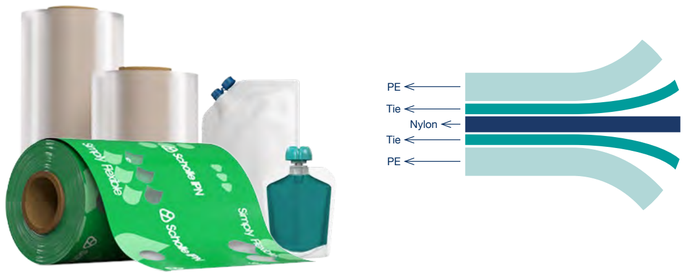
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 15,600 g/25mm | TD: 15,000 g/25mm
Elongation at Break	ASTM D-882	MD: 140% | TD: 110%
Puncture Resistance	ASTM D-3420	2000 g
Oxygen Transmission	ASTM F-1927	0.5 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.25

Technical Data

Gauge	4.77 mils / 121 µ
Film Process	Laminate
Print-Capable	Yes - Reverse Print
Key Barrier	Oxygen Transmission Rate (OTR)
Known Process Applicatons	Ambient Hot Fill Ultra-Clean (ESL) Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA, EU, and China food contact regulations.

DuraTuff® 50 Film for Pouches



Film Structure

This five-layer film contains a nylon structure which provides affordable barrier properties and strength.

- Excellent aroma barrier for chemical products
- Available in gauge range from 1.5-6.0 mils

Key Market Applications

- Agricultural Chemicals
- Automotive Fluids
- Cleaning Chemicals
- Soft Drinks

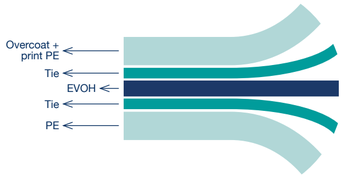
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 10300 g/25mm | TD: 10700 g/25mm
Elongation at Break	ASTM D-882	MD: 540% | TD: 640%
Puncture Resistance	ASTM D-3420	5300 g
Oxygen Transmission	ASTM F-1927	35.7 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.13

Technical Data

Gauge	5.0 mils / 127 µ
Film Process	Co-Extruded
Print-Capable	Yes - Surface Print
Key Barrier	Aroma
Known Process Applicatons	Ambient Ultra-Clean (ESL) Hot-Fill Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

RecShield™ PE-44B Film for Pouches



Film Structure

Recycle-ready, transparent film for hot-filled or aseptically-sterilized products.

- Excellent barrier properties.
- Transparent film for hot-filled or aseptically-sterilized products.
- Recyclable with other polyethylene films where available.

Key Market Applications

- Baby & Toddler Food
- Condiments & Sauces
- Dairy
- Fruits & Vegetables
- Smoothies
- Spreads & Toppings

Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 7300 g/25mm | TD: 7200 g/25mm
Elongation at Break	ASTM D-882	MD: 820% | TD: 540%
Puncture Resistance	ASTM D-3420	610 g
Oxygen Transmission	ASTM F-1927	1.7 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.19

Technical Data

Gauge	4.4 mils / 113 µ
Film Process	Co-Extruded
Print-Capable	Yes - Surface Print
Key Barrier	Oxygen Transmission Rate (OTR)
Known Process Applicatons	Ambient Ultra-Clean (ESL) Hot-Fill Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

RecShield™ PP-70 Film for Pouches

Film Structure

Recycle-ready, transparent film for ambient or Ultra-Clean processed products. Thicker gauge is ideal for larger stand-up pouch formats which require rigidity.

- Excellent barrier properties
- Transparent film allows for consumers to see products' fresh colors
- Recyclable with other polypropylene films where available

Key Market Applications

- Baby & Toddler Food
- Condiments & Sauces
- Dairy
- Fruits & Vegetables
- Smoothies
- Spreads & Toppings

Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 14,500 g/25mm | TD: 24,000 g/25mm
Elongation at Break	ASTM D-882	MD: 110% | TD: 40%
Puncture Resistance	ASTM D-3420	1900 g
Oxygen Transmission	ASTM F-1927	2350.0 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.45

Technical Data

Gauge	7.0 mils / 179 µ
Film Process	Laminate
Print-Capable	Yes - Reverse Print
Key Barrier	None
Known Process Applicatons	Ambient Ultra-Clean (ESL)
Regulatory Compliance	Complies with USFDA and EU food contact regulations.

SentryShield™ 3P Film for Pouches

Film Structure

This three-layer, foil based adhesive laminate is designed for form-fill-seal pouch applications requiring barrier to oxygen and UV.

- Aseptic-capable
- High barrier capabilities
- Ideal for pouches size 6oz and under
- Good for light-sensitive products

Key Market Applications

- Baby & Toddler Food
- Beauty & Personal Care
- Condiments & Sauces
- Dairy
- Fruits & Vegetables
- Smoothies

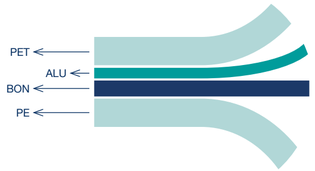
Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 11,600 g/25mm | TD: 10,700 g/25mm
Elongation at Break	ASTM D-882	MD: 90% | TD: 80%
Puncture Resistance	ASTM D-3420	2200 g
Oxygen Transmission	ASTM F-1927	<0.2 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.20

Technical Data

Gauge	4.3 mils / 110 µ
Film Process	Laminate
Print-Capable	Yes - Reverse Print
Key Barrier	Oxygen Transmission Rate (OTR) Ultraviolet (UV)
Known Process Applicatons	Ambient Ultra-Clean (ESL) Hot-Fill Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA food contact regulations.

SentryShield™ 4P Film for Pouches



Film Structure

This four-layer, foil based adhesive laminate is designed for form-fill-seal pouch applications requiring barrier against oxygen.

- Aseptic-capable
- High-barrier capabilities
- Ideal for pouches size 6oz and over
- Good for light-sensitive products

Key Market Applications

- Baby & Toddler Food
- Beauty & Personal Care
- Condiments & Sauces
- Dairy
- Fruits & Vegetables
- Smoothies

Performance Data

Performance Properties	Test Reference	Typical Value
Tensile Strength	ASTM D-882	MD: 21,500 g/25mm | TD: 21,400 g/25mm
Elongation at Break	ASTM D-882	MD: 100% | TD: 90%
Puncture Resistance	ASTM D-3420	5600 g
Oxygen Transmission	ASTM F-1927	<0.2 cc 100% O_2/m^2/day
Optical Density	Tobias Densitometer	N/A
Kinetic COF	ASTM D-1894	0.31

Technical Data

Gauge	4.9 mils / 125 µ
Film Process	Laminate
Print-Capable	Yes - Reverse Print
Key Barrier	Oxygen Tranmission Rate (OTR)
Known Process Applicatons	Ambient Hot-Fill Ultra-Clean (ESL) Low-Acid Aseptic High-Acid Aseptic
Regulatory Compliance	Complies with USFDA food contact regulations.

Barefoot bag-in-box features: DuraShield® film with FlexTap® fitment, and is filled on SureFill® 12 equipment.

Fitments

Injection Molding and Assembly

Scholle IPN injection molds and assembles fitments designed to provide an ergonomic interaction with your product for all ages and abilities.

- Our fitments are designed with a focus on optimized functionality and fit for sealing to film.
- Our taps, connectors, and caps are designed to suit your needs – whether that's on a retail shelf, a fast-paced restaurant operation, or industrial use.

Our vertical integration and global footprint ensures competitive pricing and supply contingencies. Our Industry 4.0 approach to manufacturing uses data, automation, and robotization. Together with clean room manufacturing and in-line vision systems, we maintain high quality from design to production.

Caps and Taps:
Ergonomic, easy-to-use solutions designed for people of all ages and abilities.

Connection Systems:
Facilitate safe, precise dosing and mixing of liquid products from dispensers.

Environmentally-Conscious:
Designs engineered to be lightweight and with the Earth's limited resources in mind.

Equipment
A Total Solution for Any Requirement

For over 60 years, Scholle IPN and Bossar have engineered, built, and serviced a wide range of forming and filling equipment for flexible packaging, including bag-in-box and spouted pouches. From manual fillers for start-ups to fully automatic, aseptic-capable bag-in-box and spouted pouch HFFS systems, we have what you need to provide a diverse range of products in flexible packaging.

Self-Manufacture

Pre-Made

HFFS +Efficiency

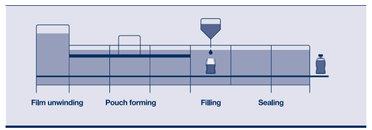
Horizontal form-fill-seal equipment combines component materials (film and fitments) into a formed, filled product all in one, highly-efficient machine.

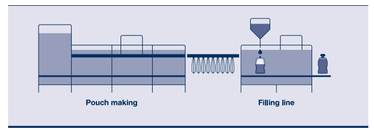
HYBRID +Flexibility

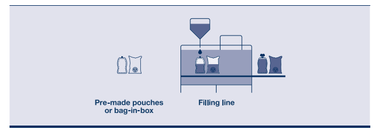
Hybrid equipment brings together the speed and efficiency of on-site package manufacture with the consistency and quality of through-spout filling in a form-seal-fill method.

PRE-MADE +Simplicity

Keep it simple. Scholle IPN manages the quality manufacture of your pouches or bag-in-box packaging. Once on-site, your operations finish the job with reliable, modular filling systems.







Locations

North America

United States
Chilhowie, VA
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Peachtree City, GA
Peachtree City, GA

Canada
Baie-D'Urfé, QC

Mexico
Mexico City*

Latin America

Brazil
Vinhedo+
Vinhedo

Chile
Santiago

EMEA

The Netherlands
Kampen
Tilburg (H)
Tilburg (J)+

Spain
Barcelona

Germany
Eisfeld

Russia
Moscow
Voronezh

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Edinburgh North, SA+
Edinburgh North, SA

India
Palghar
Pune

Malaysia
Kuala Lumpur*

China
Suzhou+
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- * sales office
- + equipment field service
- Bossar

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Simply **Flexible**™

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Total Flexible Packaging Solutions

Film

Fitment

Equipment

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