

Food and Beverage



About 3 Sigma

Established in 1980, 3 Sigma is a fast-growing innovator of pressure sensitive adhesive coated products. 3 Sigma uses its solvent, emulsion and hot melt technology expertise to produce specialty or complex adhesive constructions at our facility in Troy, Ohio. Our flexibility, creativity, market experience and unique product commercialization approach enables us to create higher margin, innovative products for our customers, helping them to capture market opportunities, reduce waste and production costs, and increase output.



A Proven Approach

Research and Development of custom adhesives and top coats for highly specialized pressure sensitive products is our specialty. Our solvent, emulsion and hot melt chemistry and manufacturing capabilities are utilized every day to create unique, value-added products for our customers that add directly to their bottom line. 3 Sigma's research and development personnel have worked in large multi-national corporations and follow a unique, collaborative approach when working with customers and strategic partners, ensuring alignment and a superior customer experience.

Food Safety Information



Food Safety Fact Kit

Cold Storage Chart for Meats and Fish

The chart to the right contains suggested safe time limits for keeping refrigerated foods from spoiling or becoming unsafe to eat.

Because freezing can keep food safe indefinitely, the recommended storage times are for quality only.

Unless otherwise stated, the storage times are from date of purchase.

	REFRIGERATOR (40°F/4.4°C)	FREEZER (0°F/-18°C)
BACON & SAUSAGE		
Bacon	7 days	1 month
Sausage, raw	1 to 2 days	1 to 2 months
Smoked breakfast sausage	7 days	1 to 2 months
HOT DOGS & LUNCHEON MEATS		
Hot dogs - opened	1 week	1 to 2 months
Hot dogs - unopened	2 weeks	1 to 2 months
Luncheon meats - opened	3 to 5 days	1 to 2 months
Luncheon meats - unopened	2 weeks	1 to 2 months
HAM		
Ham - fully cooked, whole	7 days	1 to 2 months
Ham - fully cooked, slices	3 to 4 days	1 to 2 months
HAMBURGER, GROUND & STEW MEAT		
Ground hamburger, turkey, pork mixtures; stew meat	1 to 2 days	3 to 4 months
FRESH BEEF, VEAL, LAMB, PORK		
Steaks, roasts	3 to 5 days	6 - 12 months
Chops	3 to 5 days	4 - 6 months
FRESH POULTRY		
Chicken or turkey	1 to 2 days	6 months
FISH		
Lean fish (cod, etc.)	1 to 2 days	6 months
Fatty fish (salmon, etc.)	1 to 2 days	2 to 3 months

NSF International
789 N. Dixboro Road, P.O. Box 130140, Ann Arbor, MI 48113-0140
Consumer Hotline: 1-888-99-SAFER Website: www.nsf.org

Food Safety Information



Store foods in the following order to prevent cross-contamination:

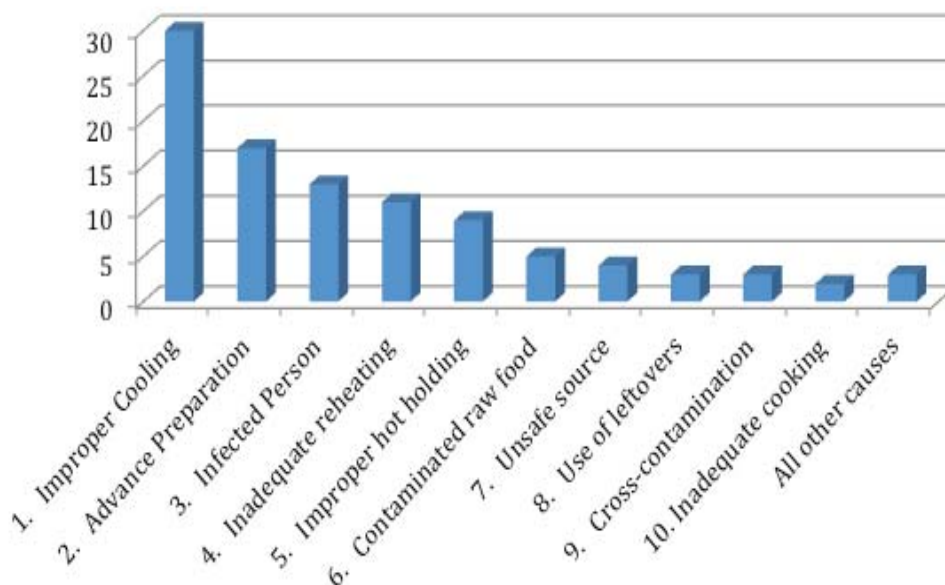
- Ready-to-Eat Food**
- Whole Raw Fish**
- Whole Raw Meat**
- Raw Ground Meat**
- Raw Poultry**

Safe internal temperatures:

Beef, veal and lamb (pieces and whole cuts)	63°C (145°F)	71°C (160°F)	77°C (170°F)
Pork (pieces and whole cuts)	71°C (160°F)		
Ground meat and meat mixtures (burgers, sausages, meatballs, meatloaf, casseroles)—beef, veal, lamb and pork	71°C (160°F)		
Poultry (pieces)—chicken, turkey, duck	74°C (165°F)		
Poultry (whole)—chicken, turkey, duck	85°C (185°F)		
Ground meat and meat mixtures —poultry	74°C (165°F)		
Egg dishes	74°C (165°F)		
Others (hot dogs, stuffing and leftovers)	74°C (165°F)		

(Source: PHAC)

Top 10 Causes of Foodborne Illness (%)



Innovation & Expertise

3 Sigma offers one of the most extensive lines of food packaging and food safety label-stocks in the industry. Our technology and manufacturing capability enable us to design and manufacture custom products that meet the exacting demands of food storage and preparation applications. Our adhesives are formulated to meet a wide range of temperature, moisture, humidity, and surface type variations. Our full line of products allows you to meet and service any of the needs your customers have for this very significant market.

Typical Applications:

- Day/Rotation Labels
- Freezer Grade Labels
- Thermal Transfer Labels
- Exposure (Time/Temp) Indicator Labels
- Steam Table Labels
- Bag/Bottle Labels
- Use By/Use First Labels
- Instant Redeemable Coupons
- Package Seal or Re-Seal
- Re-Usable Container Labels
- Disposable Container Labels
- Produce/Fruit Tote & Bin Labels



Water Dissolvable



Direct Thermal Water Diss.



Max-Duty™ and Max-Duty DT™



CleanStik™ and CleanStik DT™



ArticStik™ and ArticStik DT™



Time & Temp Indicator

Innovation & Expertise

A sampling of some of our more popular food & beverage products. The majority of 3 Sigma's business is built on custom designed solutions for your specific application



Universal Coupon™



AnchorSeal / Lift -n- Lock™



Package Seal & Re-Seal



Food Totes and Bins



Destructible/Tamper Evident

Food Safety & Rotation	Water Dissolvable	40# WD / WD-1 / 40# Liner
Food Safety & Rotation	Water Dissolvable	40# DTWD / WD-1 / 40# Liner
Food Safety & Rotation	Max-Duty	3 mil Sigmaflex / A214 / 40#
Food Safety & Rotation	Max-Duty DT	3 mil Sigmaflex DT / A214 / 40#
Food Safety & Rotation	CleanStik	60# Matte Litho / A214 / 40#
Food Safety & Rotation	CleanStik DT	50# DT / A214 / 40#
Food Safety & Rotation	ArtikStik	55# SG / A700 / 40#
Food Safety & Rotation	ArtikStik	Matte Litho / A7000 / 40#
Food Safety & Rotation	ArtikStik DT	50# DT / A7000 / 40#
Note: Fluorescent Facestocks Available for Food Rotation as well		
Coupon/Promo	Universal Coupon	CC / A106 / 40#
Coupon/Promo	Universal Coupon	CC / AT2000 / 40#
Coupon/Promo	Universal Coupon	CC / SP19 / 40#
Coupon/Promo	Universal Coupon	Wavy / A106 / 40#
Coupon/Promo	Universal Coupon	Wavy / AT2000 / 40#
Coupon/Promo	Universal Coupon	.0255 Coupon / A106 40#
Coupon/Promo	Universal Coupon	.0255 Coupon / AT2000 / 40#
Package Re-Closure	AnchorSeal	2m CL NTC PET / A106 and/or A327 / 40#
Package Re-Closure	AnchorSeal	2m CL TC PET / A106 and/or A327 / 40#
Package Re-Closure	AnchorSeal	2m WHT TC PET / A106 and/or A327 / 40#
Package Re-Closure	AnchorSeal	2.3m WHT TC BOPP / A106 and/or A327 / 40#
Note: AnchorSeal/Lift-n-Lock is available in 3 Different design configurations, please call 3 Sigma Customer Service for more details or information		
Package Seal & ReSeal	WipeSeal	2.3m Wht TC BOPP / SR-1 / 1.2m PET Liner
Package Seal & ReSeal	WipeSeal	2m CL TC BOPP / SR-1 / 1.2m PET Liner
Package Seal & ReSeal	WipeSeal	2.3m WHT TC BOPP / SR-5 / 1.2m PET Liner
Package Seal & ReSeal	WipeSeal	2m CL TC BOPP / SR-5 / 1.2m PET Liner
Wine and Bev Labels		Estate 8 / PE18 / 40#
Wine and Bev Labels		Estate 8 / WL-1 / 40#
Wine and Bev Labels		80# Deckled Edge / PE18 / 40#
Wine and Bev Labels		80# Deckled Edge / WL-1 / 40#
Wine and Bev Labels		60# Matte Litho / PE18 / 40#
Wine and Bev Labels		60# Matte Litho / WL-1 / 40#
Wine and Bev Labels		60# Pearl Essence / PE18 / 40#
Wine and Bev Labels		60# Pearl Essence / WL-1 / 40#
Tamper Evident	Custom	4 mil TE Polyart / PE3 / 40#
Tamper Evident	Custom	4 mil TE Polyart / SP19 / 40#
Tamper Evident	SigmaKoat TE	2mil CL Sigmaguard / PE18 / 50# Liner
Tamper Evident	SigmaKoat TE	2mil CL Sigmaguard / SP110 / 50# Liner
Tamper Evident	Void Tape	2 mil WHT VOID PET / SP47 / 50#
Fruit and Produce	Food Contact	45# C2S / DFC-107 / 1.2 mil PET Liner
Fruit and Produce	Food Contact	35# Semi-Gloss / DFC-107 / 1.5 mil PET Liner
Fruit and Produce	Food Contact	60# Semi-Gloss / DFC-107 / 40# Liner
Fruit and Produce	Food Contact	1.8 mil WHT PE / DFC-107 / 40# Liner
Fruit and Produce	Food Contact	1.8 mil WHT TC BOPP / DFC-107 / 40# Liner
Fruit and Produce	Food Contact	1.8 mil WHT LDPE / DFC-107 / 55# C1S Glassine
Fruit and Produce	Tote/Bin Label	40# WD / WD-1 / 40# Liner
Fruit and Produce	Tote/Bin Label	40# DTWD / WD-1 / 40# Liner
Fruit and Produce	Tote/Bin Label	3 mil Sigmaflex / A214 / 40#
Fruit and Produce	Tote/Bin Label	3 mil Sigmaflex DT / A214 / 40#

Water Dissolvable and DT Water Dissolvable

Standard Water Dissolvable:

3 Sigma offers a superior performing water-dissolvable construction that incorporates a 40# super calendared paper with our WD-1 adhesive. Many end-users are looking for a temporary label product that is environmentally benign or can be removed from substrates easily and economically. This product is perfectly suited for anything from food service trays with date coding to returnable containers requiring temporary identification or tracing.

Our construction has been optimally designed to provide the necessary performance and durability while in use and the ease of removal when products need to be washed and/or re-used. Both the paper and adhesive dissolve quickly and wash away easily in room temperature water.



Direct Thermal Water Dissolvable:

A highly engineered version of our Water Dissolvable product specifically designed for Direct Thermal printers. In addition, it can also be printed on most web and sheet fed presses, including letterpress, flexography, and dry offset processes. The paper and the emulsion acrylic adhesive dissolve quickly in room temperature (or above) water.



Potential Applications:

- Food Tray marking & identification
- Bottles (not subject to high levels of condensation)
- Returnable containers
- Temporary container/package for water soluble products

Please contact our Customer Service Dept. at 1-800-347-3091 for more information or to place an order.

Note: Product is subject to change and degradation in high humidity or moisture levels. Special care and packaging is required in handling and processing. Please review technical information on the reverse side for greater detail.

Food Safety & Rotation	Water Dissolvable	40# WD / WD-1 / 40# Liner
Food Safety & Rotation	Water Dissolvable	40# DTWD / WD-1 / 40# Liner

Max-Duty and Max-Duty DT™

Maximum Durability, Maximum Performance

Max-Duty is a premium product specifically engineered to work in a wide range of demanding environments associated with food storage and food preparation. From wide fluctuations in temperature and humidity to containers subject to soaps, detergents and grease, Max-Duty is your best answer to addressing those conditions. Starting with our 3 mil white Sigmaxflex film, we add our industry leading acrylic removable to offer the optimum performance in multiple environments. Max-Duty is very aggressive and will stick well to a wide variety of containers and surfaces. However, when the label needs to be removed, it comes off easily and leaves no residual adhesive or ghosting that can attract germs or bacteria to your containers. We finish off the construction with a durable liner that protects the adhesive, allows for easy removal of the label itself and provides an excellent die-cutting surface.



Direct Thermal Max-Duty (Max-Duty DT™)

Our Direct Thermal version of Max-Duty gives you all the outstanding features of the standard product with the added function of Direct Thermal printability. The surface provides a very smooth face, medium to high sensitivity for printing and an extremely readable print characteristic so critical in food safety and rotation applications.



Food Safety&Rotation	Max-Duty	3 mil Sigmaxflex / A214 / 40#
Food Safety&Rotation	Max-Duty DT	3 mil Sigmaxflex DT / A214 / 40#

CleanStik and CleanStik DT™

A highly engineered economical labeling and rotation product

CleanStik provides a general purpose paper face matched with our superior durability acrylic adhesive to handle a wide range of labeling and rotation applications. CleanStik will stand up to most standard food labeling applications where the environment does not call for extreme conditions of temperature, grease or cleaners. CleanStik, like our Max-Duty line is very aggressive and will stick well to a wide variety of containers and surfaces. However, when the label needs to be removed, it comes off easily and leaves no residual adhesive or ghosting that can attract germs or bacteria to your containers. CleanStik offers a premium liner providing superior die-cutting, application and label protection. It is an excellent solution for applications requiring an economical approach to food rotation and labeling.



Direct Thermal CleanStik (CleanStik DT™)

Our Direct Thermal version of CleanStik gives you all the outstanding features of the standard product with the added function of Direct Thermal printability. The surface provides a very smooth face, medium to high sensitivity for printing and an extremely readable print characteristic so critical in food safety and rotation applications.



Food Safety & Rotation	CleanStik	60# Matte Litho / A214 / 40#
Food Safety & Rotation	CleanStik DT	50# DT / A214 / 40#

ArticStik and ArticStik DT™



Cold, moist conditions.....No Problem!

3 Sigma offers multiple products that work in cold temp and freezer storage for extended periods. The All Temperature adhesive will work in a wide range of storage atmospheres and perform well in those environments. The face-stocks are superior quality and offer excellent printability using multiple print and ink technologies.



Direct Thermal ArticStik (ArticStik DT™)

Our Direct Thermal version of ArticStik gives you all the outstanding features of the standard product with the added function of Direct Thermal printability. The surface provides a very smooth face, medium to high sensitivity for printing and an extremely readable print characteristic so critical in food safety and rotation applications.

Food Safety & Rotation	ArticStik	55# SG / A700 / 40#
Food Safety & Rotation	ArticStik	Matte Litho / A7000 / 40#
Food Safety & Rotation	ArticStik DT	50# DT / A7000 / 40#

Coupon Products

3 SIGMA UNIVERSAL COUPON – THE INDUSTRY STANDARD

Over the past 20 years, Universal Coupon has been used by well over 350 converters around the world and our production is in excess of 100 Billion square inches. During that time, competitors have attempted to match our product performance, but in the long run, generally end up exiting the market. 3 Sigma has been in the market since our introduction of the product and has never left a customer needing to find a new supplier.

Because of its demanding requirements, coupon base stock is not an easy product to manufacture consistently. Our experience working with the vast number of users and our in-house knowledge have resulted in an optimal construction that meets both printing and application criteria while maintaining end user performance and functionality.

Our experience over the years also taught us that one design was not perfect for all applications. Tight radii products, variation in substrate surfaces, and size of coupons all affect application and removal. 3 Sigma offers 4 different designs to meet various application needs.

A large majority of coupons end up on food or beverage products. 3 Sigma has been diligent in ensuring that all components of our coupon products meet critical FDA requirements to prevent any type of contamination or residual odor. Not only do our adhesives for both application and coupon film bond meet 21 CFR 175.105 of the Federal Food, Drug and Cosmetic Act, but the BOPP film itself meets 21 CFR 177.1520 (a)(1) and (c) 1.1 standards

Competitive Comparison:

Function or Feature	Universal Coupon	Competitor A	Competitor B
Multiple Designs	Yes	No	No
Clean Release, No Residue	Yes	No	Yes
Ease of Removal	Yes	No	Yes
Bond Consistency*	Yes	Yes	No
Odorless	Yes	No	No

In Summary, 3 Sigma Universal Coupon offers more consistent performance, a higher degree of functionality, and 20 years of experience, which no one else can match.



Coupon Products

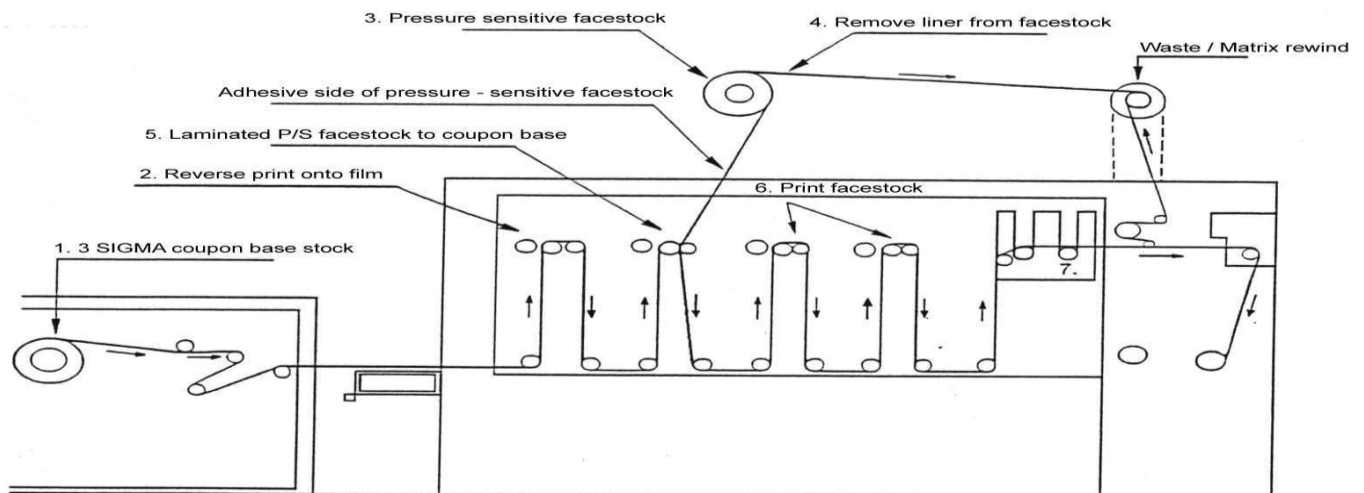
Our flagship product for the coupon market, Universal Circle Coupon has been in the market for 25 years and is still considered the industry standard for splittable films.

In addition to our standard circle pattern, we also offer Tight Circle. It is designed and manufactured with a slightly higher degree of bond strength when compared to standard circle. It is best suited for coupon applications that utilize a heavier grade card or film face or for surfaces that are designed with a somewhat tight radius.

Last, but not least, we also provide our coupon products with a wavy configuration. The wavy pattern design creates the perfect release for coupons that are applied to flat rigid surfaces (soda cartons) and coupons of smaller size. This pattern provides a moderately easier lift edge when compared to circle coupon for more demanding coupon applications.



Typical Press Set-up to Run Coupon Stock



Coupon Products

Why buy Universal Coupon Products:

- Twenty-five years of manufacturing expertise with over 125 Billion square inches sold
- Utilized by over 350 converters worldwide
- Excellent converting performance
- **No tacky residue** or leave-behind
- Customer-friendly **“lift-anywhere”** design
- **Odorless** formulation
- Multiple designs available (Std. Circle, Tight Circle, Wide Wavy patterns)
- **Available from Stock** for immediate shipment
- **Universal Circle Coupon or Wide Wavy Coupon available in exact roll sizes; no trim penalty.**
- Design patterns minimize tunneling on press
- Coupon Film stock **meets 21 CFR 177.1520 (a)(1) and (c)(1.1)** – Federal Food, Drug and Cosmetic Act
- All adhesive formulations **meet 21 CFR 175.105** of the Federal Food, Drug, and Cosmetic Act
- Superior bond consistency for repeatable, consistent application and removal

3 Sigma can help you in designing a custom or specialty product utilizing our Universal Coupon products. Please contact our Customer Service group or our Technical group to discuss your application needs and requirements.

Popular Coupon Constructions

Coupon/Promo	Standard Circle	CC / A106 / 40#
Coupon/Promo	Standard Circle	CC / AT2000 / 40#
Coupon/Promo	Standard Circle	CC / SP19 / 40#
Coupon/Promo	Wavy	Wavy / A106 / 40#
Coupon/Promo	Wavy	Wavy / AT2000 / 40#
Coupon/Promo	Tight Circle	.0255 Coupon / A106 40#
Coupon/Promo	Tight Circle	.0255 Coupon / AT2000 / 40#

Wine and Beverage

Many years ago, wine labels were typically a standard rectangle printed on flat paper sheets and were glue applied. With the advent of pressure-sensitive labels, wine labels continue to evolve with rotary die-cut shapes, foil-stamping, metalized papers, and more creative designs – all in an effort to grab the consumer’s attention when competing with other wines on the shelf.

The versatility and flexibility of pressure-sensitive labels – combined with a quicker turnaround time, are counted among their major benefits for converters and their end-users.



Signature™ for Wine/Beverage labels

Signature is a splittable film base-stock used for applications such as coupons and affixed cards. It also provides a very unique type of wine label construction. Many wine connoisseurs collect wine labels and archive them. Signature allows you to print a high quality graphic label to a bottle, then peel it off, intact, in flawless condition for collectors.



Wine and Beverage

Paper Stocks

There are few applications that ask more from a premium paper than a wine label. To achieve the eye-appeal on a finished label, multi-color printing, embossing, die-cutting and foil-stamping are commonly used. And then there are the challenging environments presented by refrigerators and ice buckets. 3 Sigma offers the solution to premium paper choice for wine label production. Some examples include:

60# matte litho: A “workhorse” of the industry, matte litho is an economical paper that typically delivers exceptional print results. The matte finish allows for a soft, refined look.

Deckled edge: Paper with a decorative, textured edging, such as you would see on freshly manufactured paper before the rolls are edge-trimmed. A very unique look and not widely available. Allows for visual differentiation of your labels.

Estate® Label #8 or #9: The standard of excellence in uncoated label paper, ESTATE LABEL® Papers provide outstanding performance from the high-speed presses and bottling lines to the refrigerator and ice bucket. Manufactured with “wet strength” additive.

Pearl Essence: A specialty-finished paper with a luminescent, “pearly” finish. Very distinctive and decorative.



Adhesives & Coatings

The material that is used for the manufacture of wine labels must not only be attractive to the end-user, but also able to withstand cold, wet environments, heat, and scuffing.

At 3 Sigma, our chemistry expertise allows us to offer the exact adhesives for papers and films that will allow the finished labels to work precisely as needed.

Wine And Beverage

Paper Specifications

Deckled Edge

80# Paper	
Caliper (Mils):	7.5
Tear Strength:	120/132
White Opacity:	95.6
White Brightness:	85.0

Estate® #8

Basis Weight (25x38/500)	60
Caliper (Mils)	4.8
GSM	88.8
Tensile MD/CD	15/8 Min
Brightness (Macbeth)	92%

60# Matte Litho

Basis Weight (#25/38-500)	60
Caliper (Mils):	3.2
Tear MD:	53
Tear CD:	63
Tensile MD/CD:	25/12 Minimum

60# Pearl Essence

Basis Weight (25x38/500)	64
Caliper (Mils)	4.8
Opacity	90.5
Tensile MD/CD	37/24
Brightness (Macbeth)	73

Popular Wine and Beverage Constructions

Wine and Bev Labels		Estate 8 / PE18 / 40#
Wine and Bev Labels		Estate 8 / WL-1 / 40#
Wine and Bev Labels		80# Deckled Edge / PE18 / 40#
Wine and Bev Labels		80# Deckled Edge / WL-1 / 40#
Wine and Bev Labels		60# Matte Litho / PE18 / 40#
Wine and Bev Labels		60# Matte Litho / WL-1 / 40#
Wine and Bev Labels		60# Pearl Essence / PE18 / 40#
Wine and Bev Labels		60# Pearl Essence / WL-1 / 40#

Package Closure

ANCHORSEAL®

3 Sigma's patented Anchorseal® is a pressure sensitive reclosure system designed for use on flexible packaging bags or bag in box products, as well as, other unique resealable applications.

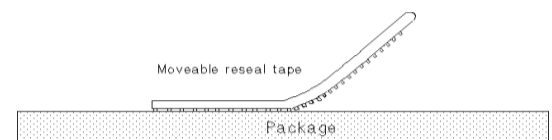
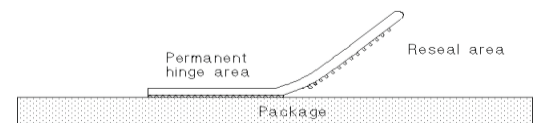
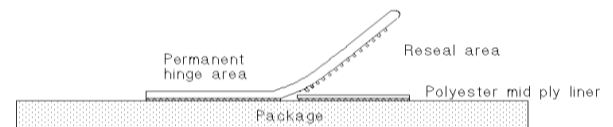
Anchorseal® can be designed with different face stocks, adhesives, and coating patterns to meet your customer's requirements. Anchorseal®'s dual adhesive coated construction allows for a permanent bond of the closure system to numerous flexible packaging materials, as well as, a repositionable area that allows the open package to be resealed time after time.

Anchorseal® utilizes a closure tab with a zone coated repositionable adhesive, a release coated intermediate liner (if double ply), a permanent adhesive and a super calendered release liner.

Design 1 is the original Lift and Lock product. It consists of a lift edge, a reseal area and a permanent area. A clear polyester mid ply liner covers the reseal area, keeping the adhesive from touching the package until it is first used to reseal. This mid ply liner has a permanent adhesive on the backside and stays with the package when opening the Lift and Lock to reseal.

Design 2 is similar to design 1, except there is not a mid-ply liner. The reseal adhesive develops its best bond on first use and begins to lose slight adhesion with each reseal. Since the reseal adhesive is in contact with the package during shipment, the best adhesion has already been expended. The advantage of this product over design 1 is cost and easier die cutting.

Design 3 has a lift tab with the remainder being reseal adhesive. The product can be removed from the bag and resealed in a different spot. This is the least expensive of the three designs. This tape will only function on smaller, lighter weight packages. Packages constructed from a stiffer material will have a lot of memory in the folded over flap and can lift the entire tape off the package within several hours.



Popular AnchorSeal® Constructions

Package Re-Closure	AnchorSeal	2m CL NTC PET / A106 and/or A327 / 40#
Package Re-Closure	AnchorSeal	2m CL TC PET / A106 and/or A327 / 40#
Package Re-Closure	AnchorSeal	2m WHT TC PET / A106 and/or A327 / 40#
Package Re-Closure	AnchorSeal	2.3m WHT TC BOPP / A106 and/or A327 / 40#

Package Seal & Re-Seal

3 Sigma offers durable and highly engineered materials that provide reliability and superior adhesion for multiple types of package sealing requirements. Our adhesives offer multiple open-close re-sealing for a wide array of products including foods, hygienic or industrial wipes, and other personal care items. They are resistant to water, oils and cleaning materials and will operate smoothly and efficiently throughout the life of package use. 3 Sigma can help you develop and design your product and will work with you through the testing process to ensure fitness-for-use and a product that supports your brand reputation.



Typical Applications

- Cracker Trays/Packaging
- Cookie Trays/Packaging
- CheesePacks

Features

- Excellent Converting Characteristics
- Excellent Clarity
- High UV Resistance
- Excellent Water Resistance
- Hand and Machine Auto Dispensable
- Temp Range 32F to 100F
- Removes Cleanly from a wide variety of substrates

Benefits

- Cost efficient and error-free processing
- Good for "See-Thru" window applications
- Long term durability
- Withstands most harsh environment applications
- Offers re-seal capability for normal package life cycle

Popular Seal and Re-Seal Constructions

Package Seal & ReSeal	SigmaSeal	2.3m Wht TC BOPP / SR-1 / 1.2m PET Liner
Package Seal & ReSeal	SigmaSeal	2m CL TC BOPP / SR-1 / 1.2m PET Liner
Package Seal & ReSeal	SigmaSeal	2.3m WHT TC BOPP / SR-5 / 1.2m PET Liner
Package Seal & ReSeal	SigmaSeal	2m CL TC BOPP / SR-5 / 1.2m PET Liner

Destructible & Tamper

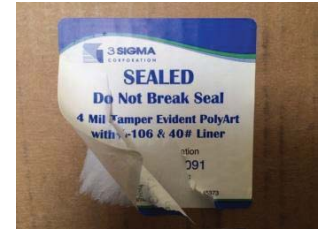
“The global counterfeit food threat is estimated at \$49 billion, and the UK’s Food Standards Board (FSA) estimates the UK “level of fraud” around 10 percent.”

Michigan State University Study presented to A.F.D.O. - 2007

Counterfeiting and brand theft are prevalent in many markets and the food and beverage market is no exception. Being able to offer protection and validation to your customers and consumers is becoming a necessity for all consumables, especially where health and safety concerns are critical. 3 Sigma offers a wide range of solutions and options to meet brand authentication and package safety needs. We have highly engineered constructions that are perfect for high end and luxury food and beverage items to provide authentication or to ensure security and safety of the item. We also have lower cost basic products that more closely match the packaging needs of commodity food markets. Whatever you have in mind, please call us, and our customer service and technical staff will help you find the proper answer for your specific situation.

“Anti-counterfeit Food Packaging Market is Expected to Reach \$62.5 Billion, Globally, by 2020”

Allied Market Research – 2015 Study



Popular Tamper Evident Constructions

Tamper Evident	Custom	4 mil TE Polyart / PE3 / 40#
Tamper Evident	Custom	4 mil TE Polyart / SP19 / 40#
Tamper Evident	SigmaKoat TE	2mil CLSigmaguard/PE18/50# Liner
Tamper Evident	SigmaKoat TE	2mil CLSigmaguard/SP110/50# Liner
Tamper Evident	Void Tape	2 mil WHT VOID PET / SP47 / 50#

Fruit Labeling, Tote & Bin Labels

From the label on the fruit or produce to the labels required to get them to the consumer, 3 Sigma has a pressure sensitive material to meet the need. Our fruit and produce label-stock includes a Direct Food Contact adhesive tested and approved to meet safety requirements for the customer. Our tote and bin label options include a full wash-off material that is environmentally friendly to an extremely durable product that will hold up to heat, cold, humidity and moisture. These products will either wash-off cleanly or will remove cleanly with absolutely no residual adhesive that can attract germs or bacteria.



Popular Fruit and Produce Constructions

Fruit and Produce	Food Contact	45# C2S / DFC-107 / 1.2 mil PET Liner
Fruit and Produce	Food Contact	35#Semi-Gloss/DFC-107/1.5milPETLiner
Fruit and Produce	Food Contact	60# Semi-Gloss / DFC-107 / 40# Liner
Fruit and Produce	Food Contact	1.8 mil WHT PE / DFC-107 / 40# Liner
Fruit and Produce	Food Contact	1.8mil WHTTCBOPP/ DFC-107/ 40# Liner
Fruit and Produce	Food Contact	1.8 mil WHT LDPE / DFC-107 / 55# C1S Glassine
Fruit and Produce	Tote/Bin Label	40# WD / WD-1 / 40# Liner
Fruit and Produce	Tote/Bin Label	40# DTWD / WD-1 / 40# Liner
Fruit and Produce	Tote/Bin Label	3 mil Sigmafex / A214 / 40#
Fruit and Produce	Tote/Bin Label	3 mil Sigmafex DT / A214 / 40#

Solutions

An ISO 9001-2008 Organization Dedicated to Innovative Pressure Sensitive Solutions

3 Sigma is a rapidly growing, resourceful innovator of unique pressure sensitive coated products. Our commitment to you, our customer, is to continuously seek ways to address and improve critical business needs: speed of development and commercialization, production efficiency, product performance and quality. We have the necessary expertise regarding material and process technologies, to consistently produce superior products that meet your ultimate requirements.

Our customer service and technical associates will work with you to develop and manufacture custom constructions that allow you to provide innovation to your end-user and differentiate yourself from your competition. All of 3 Sigma's associates are focused on assuring a "customer-friendly" experience that offers:

- **Easy access to decision makers and technical experts**
- **Flexible and responsive production with the quickest custom order turn-around in the industry**
- **Utilization of our facility and tech support for your design and trial experiments**
- **Production volumes and product designs that meet your needs, not ours**

We look forward to working with you and in assisting you in becoming a more valuable resource to your customers. Please contact us: **1-800-347-3091 • www.3sigma.cc**



Sustainability & Conservation

3 Sigma is committed to the goal of reducing our energy consumption, utilization of re-cycled materials, and re-cycling of existing materials wherever possible. We work in conjunction with our customers and our suppliers in an effort to be good stewards of natural resources and minimizing our impact on the environment. Below are just a few of the processes and practices we've instituted to meet those goals.

- Recycling of all paperboard and corrugated items.
- Recycling of office waste paper, plastic bottles, printer cartridges, etc.
- Recycling and collection of aerosol cans, bulbs , batteries, air compressor condensate, refuse oil, steel and other metals,
- The use of non hazardous safety cleaners and recycling of our cleaning chemicals.
- Recycling of packaging supplies and pallets. (Collection/Refurbishment/Re-use)
- Cleaning and recycling of all totes and drums used to supply adhesive materials.
- Recycling of purged adhesives into other manufacturing processes.
- Ongoing preventative maintenance programs for all manufacturing systems to ensure highest efficiency and minimize energy usage
- Monitoring electric, natural gas and water usage through the EPA Energy Star plants and facilities program, allowing tracking of improvements and reductions
- Utilization of a recycling company to handle start up and production scrap or waste as opposed to sending to a land fill.
- Monitoring and shutting down energy-using equipment when not in operation or needed in both office and manufacturing locations.
- Replacement of older lighting units with more efficient and lower energy systems.
- Auditing all air compressors and delivery systems to eliminate leaks (which causes added electricity usage).
- Using the heat generated from our process ovens as an alternate heating supply in the winter months.
- Preventive maintenance programs to make sure the HVAC systems are operating at peak efficiency.
- All Inter-office reports are generated electronically and distributed through email to minimize paper usage and waste.

3SIGMA LLC.
1985 WEST STANFIELD ROAD
TROY, OHIO 45373
PHONE 1-800-347-3091