

LABEL STOCK ADHESIVES

Labeling a smarter future



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About this book

UPM Raflatac Label Stock Adhesives is your guide to making the right adhesive choice for a wide range of end-uses. The following pages identify potential problems encountered with specific substrates and environmental conditions, and describe the composition and properties of a variety of adhesives designed to solve those issues.

All UPM Raflatac adhesives are as environmentally-sound as possible, without compromising performance. If you have any questions, our experts are only a phone call or email away! Contact us at **1-866-294-8412** or email us at americas.support@upmraflatac.com.



ADHESIVE CLASSIFICATION

There are a number of ways to classify or describe an adhesive. One is by chemical composition, such as acrylic-based polymers or rubber-based polymers. Another is by the carrier used in coating the adhesive, such as water-based, solvent-based, hotmelt or UV cross-linked. We also designate adhesives by how they are used in the end-use application.

CHEMICAL COMPOSITION

Acrylic adhesives are composed of a tacky synthetic polymer, typically made up of 2-ethylhexyl acrylate (EHA) and/or butyl acrylate. Therefore, they are naturally tacky and have very good chemical, heat and UV resistance. These adhesives also tend to have lower migration than typical rubber-based alternatives. Acrylic adhesives can be coated as water-based emulsion, solvent-based or UV cured.

Rubber-based adhesives are typically composed of a synthetic rubber, such as styrene butadiene rubber (SBR), styrene isoprene styrene (SIS) or natural rubber. Unlike acrylic polymers, rubber-based adhesives are not naturally tacky, so tackifiers must be added to give the base polymer those properties. Rubber-based adhesives can be coated as a water-based adhesive, a hotmelt adhesive or a solvent adhesive. Rubber-based adhesives tend to be less chemically-resistant to solvents and have less heat resistance. Hotmelt rubber-based adhesives are especially sensitive to higher temperatures due to their coating method.

CARRIER TYPES

There are four typical types of carrier systems used in pressure sensitive label applications: water-based (dispersion), solvent-based, hotmelt and UV acrylic.

Water-based systems use water as the carrier, which is evaporated in the coating process, leaving only the adhesive polymer behind. One example of this is the liquid white glue typically used by elementary school students. Water-based systems are by far the most common method for acrylic adhesives, as they have the least environmental impact and offer the lowest manufacturing costs.

Hotmelt adhesives are 100 percent solids that are heated to a molten state to allow them to be coated. This means that there is no solvent present as part of the formulation. The material is tacky at room temperature, but as heat is applied it becomes viscous – like a syrup that can then be coated. Rubber-based hotmelts tend to adhere very well to non-polar surfaces, such as HDPE, LDPE and waxy corrugated. These systems typically work very well in applications with high moisture or high condensation. Hotmelts do not perform well in elevated temperatures. The material becomes softer as temperatures rise – hence the coating method – and loss of adhesion can occur. Most hotmelts are rubber-based, and therefore are not as resistant to solvents and UV exposure. Hotmelt coating is a fairly common method and has limited environmental impact.

Solvent adhesives use solvents to carry the polymer, and much like water-based systems, the solvent is evaporated or dried during the coating process. Solvent adhesives can be easily cross-linked at different levels during the coating process. This capability makes them very versatile, as it can allow the adhesive to have enhanced heat and chemical resistance, or it can change the adhesion level of the base polymer altogether. Solvent adhesives are usually either acrylic or rubber-based and typically cost significantly more than hotmelts or water-based carrier adhesives.

UV cross-linkable adhesives are a relatively new technology and are typically formulated to displace solvent-based technology. Most UV adhesives are 100 percent solid acrylic adhesives coated as a warm melt and “cured” by exposing the adhesive to UV radiation. They can also be modified to have very high initial tack, high temperature resistance or high chemical resistance, which gives this type of carrier system a very wide performance range.

CLASSIFICATIONS

Adhesives can also be classified according to the end-use or type of adhesion. Permanent adhesives are designed to stay permanently on the labeling substrate in a variety of end-uses.

Some applications may call for a removable adhesive, so that the label can be easily removed from the substrate. Removability properties are strongly dependent upon the substrate and storage conditions.

Washable adhesives are permanent in nature but can be washed away when the label is no longer needed. These types of labels are used on returnable packages that can be used several times, such as bottles or plastic boxes.

PAPER OR FILM?

UPM Raflatac offers a variety of adhesives compatible with both paper and film face materials.

Paper

Standard permanent adhesives for paper include **RP51**, **RP54**, **RP48AT**, **RH09**, **RH23** and **RR22**. Other options include **RP36TX** and **RH15**.

These adhesives are commonly used with paper face materials to create labels for the following end--uses: food, logistics, retail, weigh scale, direct mail and charity, office, promotional and pharmaceuticals.

Film

Standard adhesives in the film segment include **RP37**, which is ideal for home and personal care applications and when higher initial tack is required when compared to most general purpose film adhesives. However, RP37 is not recommended on clear face materials where warm water resistance is required or on damp surfaces.

RP74 adhesive is recommended for standard home, personal care and food package labeling and works well with thin film face materials. It offers excellent water resistance after application (24 – 72 hour dwell time) as well as good open time on HDPE.

RP76 adhesive is UPM Raflatac's high-performing film adhesive for glass bottles in the beverage market. This adhesive offers excellent wet stick and passes the 72-hour ice bucket test.

END-USES

FOOD LABELING

Over 70% of the packaging business is food-related, and food labeling applications are some of the most diverse in the industry. These paper and film labels are expected to conform to a variety of packaging types – including **glass, plastics, metals, paper and corrugated fiberboard**. They must provide eye-catching branding to motivate point-of-sale purchases; and communicate critical nutrition information, like product ingredients and “sell-by” dates. **Clear labels** for food packaging is one of the latest trends for displaying quality, freshness and outstanding shelf appeal, and adhesives with optimal clarity are required in those applications. Adhesives in the food labeling segment may also provide exceptional performance in challenging environments, from cold, moist and greasy surfaces to freezing conditions. Food packaging labels play an integral role in **product safety**. The majority of UPM Raflatac adhesives meet the compositional requirements listed in FDA Indirect Food Additive regulation FDA 21 CFR 175.105 – Adhesives.



HOME & PERSONAL CARE LABELING

Home and personal care labeling is one industry where it pays to put your best face forward. Consumers are attracted to strong brand imagery and **squeezable packaging** – but expect labels to stick and stay. These products are often used in moist, wet and humid conditions over long periods of time, and they encounter a wide range of household chemicals. **Squeezable and complex shaped containers** demand higher adhesion to assure good label performance. These types of bottles require a construction that pairs high adhesion with flexibility for maximum squeezability without the formation of wrinkles and creases. For squeezable home and personal care applications, we recommend using our **Raflex Plus or PE face material**. Our range of adhesives for these applications offer adhesion with clean and stable performance at high speeds as well as excellent **water-whitening resistance** for exposure to moist and humid conditions.

BEVERAGE LABELING

Beverage label adhesives must be able to withstand a variety of environments ranging from dry and humid temperatures to wet and freezing conditions before, during and after the application process. If the container is placed in conditions that don't suit the adhesive, flagging, shrinking or swelling of the label face may start to occur. This can also often lead to the development of bubbles or wrinkles in paper and film face materials.

Textured, colored and metalized papers or ultra-clear and white films can all be used to create highly visual and informative labels that can help water, high-end soda and alcoholic beverages stand out on crowded retail shelves. Many brands sport the **"no label" or transparent** label look where letters and images seem suspended on glass and plastic bottles. These labels seamlessly adhere to the surface of bottles to create an impression of **purity and quality**. When paired with carefully chosen adhesives, they also retain exceptional clarity in a range of environmental conditions – and provide a crystal-clear wet-out when combined with a PET liner. Beer and cider labels have long been a standard for innovation, adopting ultra-thin film labels and liners as well as paper faces and liners that can **withstand cold, moist conditions** and those paired with a wet-strength additive that maintains branding possibilities. Other beverage manufacturers are following suit, adopting downgauged labeling solutions that convey quality, while delivering **increased productivity and cost savings**.



WINE, SPIRITS & CRAFT BEVERAGE LABELING

Our extensive range of label materials for the wine, spirits and craft beverage markets provide the perfect canvas to help creative designers bring their most intricate, attractive designs to life. Behind the brand is an adhesive that retailers and consumers need to stick and stay throughout the lifetime of the bottle. If the adhesive is chosen incorrectly, the label may begin to lift, wrinkle or crease, which can negatively affect brand perception. Most containers in this segment require label adhesion properties that can **survive ice buckets** and cold climates or require repositionability in dry or cold conditions. Additionally, **wash-off properties** can also be very beneficial. In the craft beer industry, there are two different application processes – **wet and dry**. When applying labels to **bottles or cans**, the application process (wet or dry) can determine which adhesive is necessary. Whether red or white wine, champagne, canned or bottled beer, the label is what puts the product in the spotlight. Our adhesive range for this industry will showcase the value consumers appreciate in your wine, spirit or craft beverage.

END-USES

OIL & INDUSTRIAL CHEMICAL LABELING

Oil and industrial chemical labeling covers a wide range of situations and applications. Each application poses unique challenges that make the adhesive a critical decision. Containers are often **rough** but can also be **flexible**, making the application pressure difficult. Adhesive choice needs to take into account the surface energy of polar surfaces like **metals, paints and lacquers**, and more challenging non-polar surfaces, such as **HDPE** plastic. Other parameters include the smoothness or roughness of the labeled surface, the condition of the surface at the time of label application, and possible requirements for **momentary repositionability**. After labeling, the adhesive needs to tolerate the conditions in which containers are **stored and transported**, as well as possible contact with container contents, for the **lifetime** of the labeled product. UPM Raflatac draws on decades of technical expertise to formulate adhesives precisely for the needs of specific applications. Our adhesives possess the necessary technical properties and resistance to different exposures, without the inefficiencies of unnecessary overspecification.

DURABLE LABELING

Durable labels serve a wide variety of applications requiring a **heavyweight, long-lasting solution**, particularly when information needs to be available for the **lifetime** of the product. These labels include identification, serial numbers, warnings and safety instructions, and **thermal transfer** overprinted variable information. PET (polyester) label faces are widely used when paired with a clear, thin PET overlaminate to **protect the labels from wear and abrasion**.



PHARMACEUTICAL & HEALTHCARE LABELING

No other industry has such wide-ranging label applications as the pharmaceutical industry. With a high level of product differentiation and specification to match, **approvals, certificates and technical information** documents are often required. Our considerable experience and dedicated resources form the foundation for safe, self-adhesive pharmaceutical label materials with **dependable functionality**. Special label constructions have been developed with **flexible film** or **thin paper** face materials, coated with special adhesives for labeling **small diameters**. Other products have been developed for applications where a **migration-safe adhesive** is required or where luminescence is missing for label detection. Whichever the case, UPM Raflatac has you covered in the pharmaceutical industry. To learn more about pharmaceutical labeling, check out our **Pharmaceutical Book**. Our Pharmaceutical Book delves deeper into each application type and provides details about the correct adhesive for your needs!



LOGISTICS

Pressure sensitive materials for the logistics industry travel the world affixed to products, boxes, cartons or pallets and typically feature bar codes and other variable product and delivery information. These critical shipping labels allow companies to **track and trace merchandise** throughout the supply chain, **process inventory** quickly and accurately and streamline operations. They can also play a large role in helping to **protect against theft or diversion**.

Logistics labels often experience significant wear-and-tear during their relatively short lifespans. Therefore, they must provide exceptional scratch resistance to keep product information and **tracking capabilities legible** and intact – and at times, they may also require **good low-temperature performance and/or strong adhesion** on certain plastic and cardboard substrates. If the adhesive fails to perform, the goods become untraceable.



RETAIL

Retail labels are typically applied to in-store goods and provide vital information about products from garments and accessories, to home and personal care items. These paper and film materials serve a range of purposes from **promotional and decorative use to in-store pricing, weigh-scale labeling and size-marking**. In the retail segment, general purpose adhesives are typically used. However in some cases, it is necessary to utilize adhesives dedicated to particular substrates – such as textiles – or to **finely tune their properties** for a particular application.



OFFICE

In a global 24/7 world, office labeling products play a versatile role at companies both large and small. This segment is typically comprised of **address labels, direct mail labels, charity labels** and other documentation labels. Adhesive requirements for this end-use are generally straightforward, as there are typically no extraordinary label performance needs in office environments.

PAPER

adhesives

RP51

RP51 is a tackified emulsion acrylic permanent adhesive designed to adhere to standard substrates, including non-polar surfaces and corrugated fiberboard. This general purpose adhesive is a perfect fit within most end-use applications including logistics and supply chain packaging, in-direct food labeling, home and personal care solutions, beverage labeling and much more! It combines good adhesion with high-speed converting for all-around top performance in a variety of applications. When all-purpose functionality is important, RP51 makes for a superior choice for your labeling applications.

RP54

RP54 is a tackified emulsion acrylic permanent adhesive designed for roll-to-sheet applications. It offers very good heat resistance for laser printing in addition to excellent sheeting performance. RP54 has good adhesion to corrugated fiberboard and non-polar substrates. This adhesive is best for office labeling which includes charity labels, direct mail labels, VIP applications and much more!

RP48AT

RP48AT is an emulsion acrylic adhesive with a broad service-temperature range. It has very good low-temperature adhesion, as well as very good adhesion to nonpolar surfaces. This all-temperature adhesive becomes more aggressive as the temperature drops. RP48AT can offer short-term repositionability properties on varied substrates, then becomes permanent for long-lasting adhesion in low temperatures. Best suited for refrigerated end-uses, such as clamshell applications, meat or cheese packaging and more!

RH09

RH09 is a general purpose hotmelt rubber adhesive that will perform in a broad range of conditions. When high initial adhesion is required – or in a moist environment, RH09 is the best solution. This adhesive has very good adhesion to nonpolar surfaces, and will perform in low-temperature conditions once applied. RH09 is a perfect fit for food packaging and refrigerated environments.

RH23

RH23 is a rubber-based hotmelt adhesive that is a great low-temperature and moist-environment performer when very high initial tack is required. It provides excellent adhesion to polar and non-polar surfaces. RH23 is ideally suited for difficult applications, such as milk bottles and jugs, and works well in wet or dry environments, or in cold and room-like temperatures.

FILM adhesives

RP37

RP37, an emulsion acrylic clear permanent adhesive is ideal for standard home and personal care end-uses when higher initial tack is required. RP37 offers excellent wet-out properties, clarity and UV stability and is UPM Raflatac's top-selling general purpose film adhesive. However, RP37 is not recommended on clear face materials where warm water resistance is required, on damp surfaces or on thin films.

RP74

RP74 is a clear permanent adhesive designed specifically for thin film face materials in a variety of end-uses, including food and home and personal care. It offers good open time on HDPE substrates, very good water resistance after application (24-72 hour dwell time) and good mandrel hold. RP74 is not recommended for damp surfaces with clear film face materials (RP76 is recommended instead) but is acceptable with white film face stocks.

RP76

RP76, a water-resistant permanent adhesive, is the right choice for those demanding, no-label look applications when the substrate will be exposed to moisture, such as glass containers in the beverage market. Designed for thin film applications, RP76 offers excellent wet stick and passes the 72-hour ice chest test. Characterized by excellent wet-out properties and high optical clarity while adhering well to a variety of substrates, RP76 also performs well on smooth PET bottles without complex curves. RP76 is not recommended for textured surfaces and when applied to wet surfaces, some blush will be seen but will fade in intensity over time.

RW85C

RW85C is an emulsion acrylic permanent adhesive designed specifically for applications where labels applied to PET containers can be washed off cleanly to allow the PET container to be recycled. When paired with certain film face materials, the Association of Plastic Recyclers (APR) has recognized RW85C as meeting or exceeding the APR Pressure Sensitive Adhesive Label for PET Bottles Critical Guidance Document requirements.

UPM Raflatac's standard film adhesives are designed to fulfill the functional and visual requirements of a wide range of applications in the food, beverage and home and personal care markets.



UPM Raflatac also offers the following adhesives for customized film constructions in a variety of end-use segments.

ALL-TEMPERATURE

- RP48AT

HOTMELT

- RH09
- RH15
- RH25

REMOVABLE

- RR12
- RR19
- RR20
- RR28

PRODUCT SAFETY REGULATIONS

POSITION OF COMPLIANCE FOR UNITES STATES MANUFACTURED UPM RAFLATAC ADHESIVES WITH RESPECT TO 21 CFR § 175.105

The overall regulatory status of a pressure sensitive label used in food packaging is determined by the regulatory status of each individual substance that comprises the label that is reasonably expected to migrate to food. Individual substances expected to migrate to food should be covered by one of the following:

- a regulation listed in Title 21 Code of Federal Regulations
- a prior sanctioned letter
- meeting the criteria for Generally Recognized as Safe (GRAS) status (including but not limited to a GRAS regulation or GRAS notice)
- a Threshold of Regulation (TOR) exemption request
- or an effective Food Contact Notification (FCN).

UPM Raflatac has surveyed suppliers of components used to formulate the following adhesives and verified compliance with the requirements of 21 CFR 175.105 – Adhesives. The adhesives that meet the requirements of 21 CFR 175.105 – Adhesives are listed below:

RP31, RP36TX, RP37, RP45, RP48AT, RP51, RP54, RP74, RP75, RP76, RP77, RP78, RP88, RS30, RH01, RH04FG, RHC4, RH09, RH15, RH23, RH25, RH70, RR12, RR19, RR20, RR22, RR28, RS32, RW85C, RW110F, RC18, SP34, and XS01.

Note that 21 CFR 175.105 (a)(2) states that for a complying adhesive: The adhesive is either separated from the food by a functional barrier or used subject to the following additional limitations:

- (i) In dry foods. The quantity of adhesive that contacts packaged dry food shall not exceed the limits of good manufacturing practice.
- (ii) In fatty and aqueous foods. (a) The quantity of adhesive that contacts packaged fatty and aqueous foods shall not exceed the trace amount at seams and at the edge exposure between packaging laminates that may occur within the limits of good manufacturing practice.

It is the label end user's responsibility to determine if its intended end use of UPM Raflatac's products complies with 21 CFR 175.105 (a)(2).

Compliance with 21 CFR 175.105 does not mean that an adhesive is suitable for direct food contact. 21 CFR 175.125 addresses the requirements for pressure sensitive adhesives that may be safely used as the food contact surface of labels and/or tapes applied to food.

Depending on the part of the label that becomes the food contact surface or on other factors that may lead to chemical migration from the label to food, other sections of 21 CFR may apply to pressure sensitive labels used in food packaging, including, but not limited to:

- 21 CFR 176 - Paper and Paperboard Components
- 21 CFR 177 – Polymers

It is the label end user's responsibility to determine if its intended end use of UPM Raflatac's products complies with the applicable regulatory requirements for food packaging applications, including the label.

ADHESIVE TECHNICAL INFORMATION

Contents



PERMANENT

RP31, RP31P, RP36TX, RP37, RP45, RP51, RP54, RP74, RP75, RP76, RHO4FG, RH09, RH23, RS30, RS32, RW85C, RW110F



ALL-TEMPERATURE

RP48AT



FREEZER-GRADE

RH15



HIGH TACK

RP77, RP78, RP88, RH25, RH70, RC18



REMOVABLE

RR12, RR19, RR20, RR22, RR28, RC12

WARRANTY

Our recommendations are based on our most up-to-date knowledge and experience. As the products are used outside our control we cannot take responsibility for any possible damage that may be caused through their use. This brochure replaces all previous publications. All information is subject to change without notice.

SHELF LIFE CONDITIONS

The term `shelf life` refers to the time for which a label stock, the face material and adhesive combined, can be stored at a constant 68°F and RH 50% in order to minimize negative effects on the adhesive's properties. Certain face sheet and adhesive combinations may alter the shelf life of the adhesives listed in this book. Shelf life does not normally refer to the life expectancy of a label after application onto a product.

RP31

PERMANENT

SPECIAL PURPOSE PERMANENT	
Permanent	RP31
Type	Permanent adhesive for pharmaceutical labeling.
Composition	Tackified emulsion acrylic.
Use	Designed specifically for labeling small diameter pharmaceutical bottles, test tubes and other curved surfaces. Very good resistance to edge lifting when paired with flexible face stocks.
Typical technical values	
Tack	19 N FTM 9
Labeling temperature min	32°F
Service temperature min	-4°F
Service temperature max	176°F
Limitations	Stiffness of the face paper and die-cutting direction influences the edge lifting properties. Mandrel wrap performance is heavily influenced by facestock combination, application wipe down, substrate composition and container diameter. For any demanding mandrel applications, testing should be conducted to determine fit for use.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP31 P

PERMANENT

SPECIAL PURPOSE PERMANENT	
Permanent	RP31 P
Type	Clear permanent adhesive for pharmaceutical labeling.
Composition	Emulsion acrylic.
Use	Designed to meet the requirements of the pharmaceutical industry for low leachable characteristics and good mandrel hold.
Typical technical values	
Tack	11 N FTM 9
Labeling temperature min	50°F
Service temperature min	-40°F
Service temperature max	212°F
Limitations	Edge-lifting performance influenced by stiffness of the face material and die cutting direction. If container diameter is less than 20 mm, a lightweight paper is required to achieve good mandrel power. Note that heavy ink coverage and over lamination increase stiffness of face materials.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP36TX

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent	RP36TX
Type	Permanent adhesive.
Composition	Emulsion acrylic.
Use	Designed for textile labeling.
Typical technical values	
Tack	8 N FTM 9
Labeling temperature min	-20°F
Service temperature min	-65°F
Service temperature max	200°F
Limitations	Not suitable for labeling silk, leather, suede and PVC fabrics. Storage temperature after labeling clothing should not exceed 122° F.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP37

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent	RP37
Type	Clear permanent adhesive.
Composition	Emulsion acrylic.
Use	Designed specifically for applications requiring good initial tack and ultimate adhesion as well as good heat resistance. In combination with a clear face and a PET liner offers excellent clarity and wet out for "no label look".
Typical technical values	
Tack	12.5 N FTM 9
Labeling temperature min	23°F
Service temperature min	-20°F
Service temperature max	212°F
Limitations	Limited adhesion at low temperatures. The highest end-use temperature must be separately checked together with the face material.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP45

PERMANENT

SPECIAL PURPOSE PERMANENT	
Permanent	RP45
Type	Water washable permanent adhesive.
Composition	Emulsion acrylic.
Use	Should be used in applications where labels need to be water-washable. Best washability is obtained with hot alkaline water, but RP45 is also washable with pure hot water. The required washing time depends on the labeled surface, time after application and the washing condition.
Typical technical values	
Tack	17 N FTM 9
Labeling temperature min	41 °F
Service temperature min	-4 °F
Service temperature max	140 °F
Limitations	RP45 is recommended especially for labeling plastic substrates, like plastic boxes and containers in logistics and retail applications. Other labeling substrates should be tested carefully prior to application. Water absorption properties of the face paper will strongly influence the washability properties. Printing ink and method will also greatly influence the wash-off time. There is a risk that the wash-off properties may be reduced if labels are stored in humid conditions or under UV exposure (such as outdoor conditions) for long periods of time. Wash-off properties should be tested beforehand with printed labels.
Shelf life	From the date of manufacture: 1 year at 68 °F and RH 50%.

RP51

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent	RP51
Type	General purpose, strong permanent adhesive.
Composition	Tackified emulsion acrylic.
Use	Good adhesion to all standard substrates, including non-polar surfaces, films and corrugated board. Good low temperature performance.
Typical technical values	
Tack	19 N FTM 9
Labeling temperature min	32 °F
Service temperature min	-4 °F
Service temperature max	176 °F
Limitations	Not recommended for labeling highly curved surfaces.
Shelf life	From the date of manufacture: 4 years at 68 °F and RH 50%.

RP54

PERMANENT

GENERAL PURPOSE PERMANENT

Permanent	RP54
Type	Universal permanent adhesive for roll-to-sheet applications.
Composition	Tackified emulsion acrylic.
Use	Designed for roll-to-sheet label stock in a wide range of applications. Very good heat resistance, which enables trouble-free performance in different laser printers. Good adhesion to corrugated board and non-polar substrates, also at low temperatures.

Typical technical values

Tack	14 N FTM 9
Labeling temperature min	32°F
Service temperature min	-4°F
Service temperature max	248°F
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP74

PERMANENT

GENERAL PURPOSE PERMANENT

Permanent	RP74
Type	Ultra clear permanent adhesive.
Composition	Emulsion acrylic.
Use	Designed specifically for applications requiring optical clarity and adhesion to both polar and smooth non-polar surfaces. This adhesive has low ooze for excellent converting characteristics with thin gauge films. RP74 has excellent water resistance for use in home and personal care market.

Typical technical values

Tack	12.5 N FTM 9
Labeling temperature min	23°F
Service temperature min	-40°F
Service temperature max	200°F
Limitations	Limited adhesion at low temperatures. The highest end-use temperature must be separately checked together with the face material.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP75

PERMANENT

SPECIAL PURPOSE PERMANENT	
Permanent	RP75
Type	Permanent adhesive for fresh blown bottle applications.
Composition	Emulsion acrylic.
Use	Designed specifically for fresh blown HDPE bottle applications. Prior testing is required to establish suitable labeling application conditions.
Typical technical values	
Tack	14 N FTM 9
Labeling temperature min	40°F
Service temperature min	-4°F
Service temperature max	158°F
Limitations	High temperature/humidity during storage might cause adhesive bleeding from edges of the roll or label. UV resistance of adhesive is limited.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP76

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent	RP76
Type	Ultra clear permanent adhesive for beverage applications.
Composition	Emulsion acrylic.
Use	Designed specifically for applications requiring optical clarity and water resistance properties which are required in the beverage market.
Typical technical values	
Tack	10 N FTM 9
Shear	77 h FTM 8
Labeling temperature min	23°F
Service temperature min	-40°F
Service temperature max	200°F
Limitations	Limited adhesion at low temperatures. The highest end-use temperature must be separately checked together with the face material. w
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RH04FG

PERMANENT

SPECIAL PURPOSE PERMANENT	
Permanent	RH04FG
Type	Food grade permanent adhesive.
Composition	Hotmelt rubber-based.
Use	Permanent adhesive for direct food contact. It adheres well to difficult and uneven surfaces of fruits and vegetables. Wet or cold labeling conditions are not a limitation. RH04FG meets the compositional requirements of FDA regulation 21 CFR 175.125(b)(2) - pressure sensitive adhesive, making it suitable for use as a food contact surface on raw fruits and vegetables.
Typical technical values	
Tack	20 N FTM 9
Labeling temperature min	32°F
Service temperature min	-4°F
Service temperature max	140°F
Limitations	Not suitable for labeling plasticized PVC. Face stock should be considered in all direct food contact applications
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

*The RH04FG adhesive used to manufacture SP408E meets the requirements for compositional compliance with FDA indirect food additive regulations at 21 CFR 175.105 – Adhesives, which assumes the presence of a functional barrier between the adhesive and the food, and 21 CFR 175.125 (b)(2) – Pressure Sensitive Adhesives which states that the adhesive may be used as the food contact surface for labels and/or tapes applied to raw fruits and raw vegetables. The statements made in this correspondence are based on information provided by our suppliers.

RH09

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent	RH09
Type	Permanent adhesive.
Composition	Hotmelt rubber.
Use	Recommended for applications where the surface is moist or if very high initial adhesion is required. Good low temperature performance once labeled. Very good adhesion to non-polar surfaces.
Typical technical values	
Tack	18 N FTM 9
Labeling temperature min	32°F
Service temperature min	-40°F
Service temperature max	122°F
Limitations	Not suitable for labeling plasticized PVC.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RH9X

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent Type	RH9X
Composition	Permanent adhesive.
Use	Hotmelt rubber.
	Designed for use in ambient and chill environment, particularly good performance in chill environment if the application surface is moist or very high initial adhesion is required. Good low temperature performance once labelled. Very good adhesion to non-polar surfaces.
Typical technical values	
Tack	14 N FTM 9
Labeling temperature min	32°F
Service temperature min	-40°F
Service temperature max	140°F
Limitations	Not suitable for labeling plasticized PVC.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RH23

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent Type	RH23
Composition	Permanent adhesive.
Use	Hotmelt rubber.
	Recommended for applications where the surface is moist or if very high initial adhesion is required. Good low temperature performance once labeled. Excellent adhesion properties to polar and non-polar surfaces. Ideally suited for difficult substrates such as, milk jugs, water bottles and other similar applications.
Typical technical values	
Tack	16 N FTM 9
Labeling temperature min	23°F
Service temperature min	-22°F
Service temperature max	140°F
Limitations	Not suitable for labeling plasticized PVC.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RW85C

PERMANENT

SPECIAL PURPOSE PERMANENT

Permanent	RW85C
Type	Wash-off acrylic emulsion for PET recycling.
Composition	Emulsion acrylic.
Use	Designed specifically to be used in applications on PET bottles and clamshells that will be recycled. Adhesive designed to wash off under specific conditions to allow recycling of the PET container.

Typical technical values

Tack	11 N FTM 9
Labeling temperature min	25°F
Service temperature min	-40°F
Service temperature max	160°F
Shelf life	From the date of manufacture: 1 year at 68°F and RH 50%.

RS30

PERMANENT

SEMI-PERMANENT

Permanent	RS30
Type	Permanent adhesive with repositionable properties.
Composition	Emulsion acrylic.
Use	Designed specifically for wine labeling applications.

Typical technical values

Tack	14.5 N FTM 9
Labeling temperature min	23°F
Service temperature min	-4°F
Service temperature max	212°F
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RS32

PERMANENT

SEMI-PERMANENT	
Permanent	RS32
Type	Semi-permanent adhesive.
Composition	Emulsion acrylic.
Use	Developed for applications where short-term repositionability is required. Suited for retail prescription labeling.
Typical technical values	
Tack	12 N FTM 9
Labeling temperature min	23°F
Service temperature min	-4°F
Service temperature max	212°F
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RW110F

PERMANENT

GENERAL PURPOSE PERMANENT	
Permanent	RW110F
Type	General purpose, strong permanent adhesive with water wash-off characteristics.
Composition	Emulsion acrylic.
Use	Developed for dry and cold wine bottles. Offers good water resistance in ice bucket immersion.
Typical technical values	
Tack	19 N FTM 9
Labeling temperature min	32°F
Service temperature min	-4°F
Service temperature max	176°F
Shelf life	From the date of manufacture: 4 years at 68°F and RH 50%.

RP48AT

ALL-TEMPERATURE

ALL-TEMPERATURE PERMANENT	
Permanent	RP48AT
Type	All-temperature permanent adhesive.
Composition	Emulsion acrylic.
Use	Formulated for use on a variety of substrates where very good adhesion at low temperatures is required. Adhesion to non-polar surfaces is very good. Remains adherent at low temperatures.
Typical technical values	
Tack	11 N FTM 9
Labeling temperature min	-20°F
Service temperature min	-65°F
Service temperature max	200°F
Limitations	Limited heat resistance. Becomes more aggressive as the temperature drops, especially below 32°F. Limited adhesion to moist surfaces.
Shelf life	From the date of manufacture: 1 year at 68°F and RH 50%.

RH15

FREEZER-GRADE

FREEZER PERMANENT	
Permanent	RH15
Type	Freezer permanent adhesive.
Composition	Hotmelt rubber-based.
Use	Excellent adhesion to rough and moist surfaces with aggressive initial tack in freezer conditions and good adhesion at room temperature.
Typical technical values	
Tack	20 N FTM 9
Labeling temperature min	-8°F
Service temperature min	-65°F
Service temperature max	147°F
Limitations	Not suitable for labeling plasticized PVC.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP77

HIGH TACK

SPECIALTY HIGH TACK PERMANENT	
Permanent	RP77
Type	Permanent adhesive.
Composition	Emulsion acrylic.
Use	Designed for labeling HDPE drums and other rough substrates. Used with film face materials.
Typical technical values	
Tack	14 N FTM 9
Labeling temperature min	40°F
Service temperature min	-4°F
Service temperature max	158°F
Limitations	High temperature/humidity during storage might cause adhesive bleeding from edges of the roll or label. UV resistance of adhesive is limited.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP78

HIGH TACK

HIGH TACK PERMANENT	
Permanent	RP78
Type	High tack permanent for HDPE drum labeling.
Composition	Tackified emulsion acrylic.
Use	Specifically designed for labeling all types of chemical drum substrates and other rough surfaces. When used with certain film face stocks, it has passed BS5609 testing standards.
Typical technical values	
Tack	8 N FTM 9
Labeling temperature min	10°F
Service temperature min	-20°F
Service temperature max	220°F
Shelf life	From the date of manufacture: 1 year at 68°F and RH 50%.

RH70

HIGH TACK

HIGH TACK PERMANENT	
Permanent	RH70
Type	Permanent adhesive.
Composition	Hotmelt rubber.
Use	Designed for tire labeling.
Typical technical values	
Tack	36 N FTM 9
Labeling temperature min	35°F
Service temperature min	-50°F
Service temperature max	170°F
Limitations	Due to aggressiveness and high coat weight of the adhesive, maximum conversion speed may be lower than that of standard label stock. Roll edges usually have an adhesive-free pattern to avoid adhesive oozing. High temperatures may cause the adhesive to bleed.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RP88

HIGH TACK

HIGH TACK PERMANENT	
Permanent	RP88
Type	Industrial acrylic emulsion.
Composition	Tackified emulsion acrylic.
Use	Designed specifically for excellent chemical resistance and high adhesion to textured PP.
Typical technical values	
Tack	20 N FTM 9
Labeling temperature min	-4°F
Service temperature min	-20°F
Service temperature max	212°F
Limitations	The highest end-use temperature must be separately checked together with the face material.
Shelf life	From the date of manufacture: 1 year at 68°F and RH 50%.

RH25

HIGH TACK

HIGH TACK PERMANENT	
Permanent	RH25
Type	Extra-permanent adhesive.
Composition	Hotmelt rubber.
Use	Intended for labeling very rough substrates, where standard permanent grades are not aggressive enough. Very high initial adhesion.
Typical technical values	
Tack	25 N FTM 9
Labeling temperature min	35°F
Service temperature min	-50°F.
Service temperature max	140°F
Limitations	Should not be exposed to direct sunlight or high temperatures for long periods.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RC18

HIGH TACK

HIGH TACK PERMANENT	
Permanent	RC18
Type	Permanent adhesive.
Composition	Radiation-cured UV acrylic.
Use	Designed specifically for film face materials for end-uses where very good adhesion with good chemical and temperature resistance is needed.
Typical technical values	
Tack	15 N FTM 9
Labeling temperature min	41°F
Service temperature min	14°F
Service temperature max	248°F
Limitations	Can withstand temperatures up to 302°F for a maximum of 2 hours. To achieve this, the adhesive must be combined with a suitable face material such as a polyester-based product.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RR12

REMOVABLE

SPECIAL PURPOSE REMOVABLE	
Removable	RR12
Type	Removable adhesive.
Composition	Emulsion acrylic.
Use	Formulated for low to moderate tack applications with good long-term removability to most substrates.
Typical technical values	
Tack	2.6 N FTM 9
Peel	1.4 N/25mm modified FTM 2
Labeling temperature min	10°F
Service temperature min	10°F
Service temperature max	150°F
Limitations	While removable from a wide variety of substrates, actual end-use testing for suitability is recommended.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RR19

REMOVABLE

GENERAL PURPOSE REMOVABLE	
General purpose removable	RR19
Type	Removable adhesive.
Composition	Emulsion acrylic.
Use	Formulated for low to moderate tack applications with good long-term removability to most substrates.
Typical technical values	
Tack	5 N FTM 9
Peel	1.8 N/25mm modified FTM 2
Labeling temperature min	10°F
Service temperature min	10°F
Service temperature max	150°F
Limitations	While removable from a wide variety of substrates, actual end-use testing for suitability is recommended.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RR20

REMOVABLE

GENERAL PURPOSE REMOVABLE	
General purpose removable	RR20
Type	Removable adhesive.
Composition	Emulsion acrylic.
Use	Designed for good initial tack and long-term removability. It has excellent anchorage to most films allowing it to be used in many peel and reseal applications, such as food and packaging.
Typical technical values	
Tack	5 N FTM 9
Peel	2.8 N/25mm modified FTM 2
Labeling temperature min	40°F
Service temperature min	0°F
Service temperature max	200°F
Limitations	Not recommend for applications where contents are moist such as wet wipes.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RR22

REMOVABLE

GENERAL PURPOSE REMOVABLE	
General purpose removable	RR22
Type	Removable adhesive.
Composition	Emulsion rubber.
Use	Designed for rough substrates, such as corrugated board, and for curved substrates. Can also be used in certain cases as a deep freeze adhesive. Long-term removability from smooth, even substrates is restricted.
Typical technical values	
Tack	7 N FTM 9
Peel	5 N modified FTM 2
Labeling temperature min	14°F
Service temperature min	-22°F
Service temperature max	158°F
Limitations	Should not be exposed to direct sunlight or high temperatures for long periods of time. Not suitable for labeling PVC surfaces.
Shelf life	From the date of manufacture: 1 years at 68°F and RH 50%

RR28

REMOVABLE

GENERAL PURPOSE REMOVABLE	
General purpose removable	RR28
Type	Removable adhesive.
Composition	Emulsion acrylic.
Use	Formulated for good long-term removability, good clarity and UV stability. Resistant to water and plasticizing. Ideal for use with film label faces.
Typical technical values	
Tack	3 N FTM 9
Peel	4.1 N/25mm modified FTM 2
Labeling temperature min	10°F
Service temperature min	-40°F
Service temperature max	176°F
Limitations	Limited adhesion to rough surfaces. Limited removability with paper face stocks.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

RC12

REMOVABLE

GENERAL PURPOSE REMOVABLE	
General purpose removable	RC12
Type	Removable repositionable.
Composition	Radiation-cured UV acrylic.
Use	Open-closure adhesive for wet wipe packages.
Typical technical values	
Tack	3 N FTM 9
Peel	5.5 N/25mm FTM2
Labeling temperature min	50 °F
Service temperature min	0°F
Service temperature max	248°F
Limitations	Limited adhesion to rough surfaces. Limited removability with paper face stocks.
Shelf life	From the date of manufacture: 2 years at 68°F and RH 50%.

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