



Product Selector

INDUSTRIAL ADHESIVES AND SEALANTS



IMPORTANT – PLEASE READ BEFORE USING BOSTIK'S PRODUCT SELECTOR

Terms & Conditions

Bostik, Inc. ("Bostik") specifies the conditions wherein technical information and recommendations contained in its documentations may be used. Bostik offers this Product Selector for descriptive and informational use only. The Product Selector is not a substitute for expert or professional advice.

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. The Product Selector relies upon your knowledge and input, and as such, its results are based solely upon the information you provide and the choices that you make. Since the conditions and methods of use of the products and the information referred to herein are beyond our control, Bostik expressly disclaims any and all liability and damages that may arise from any use of the Product Selector, the products, the results therefrom, or reliance on the information contain herein, and you hereby agree to waive any and all claims against Bostik relating in anyway thereto.

The Product Selector is one of several tools that may be used to help you find the product best suited for your needs. It is used at your own risk, and by using it, you are knowingly accepting and assuming any and all risks associated with its use, recommendations, output and your selections. You are responsible to test the suitability of any product in advance for any intended use. Bostik does not guarantee the reliability, completeness, use, or function of the Product Selector or any recommendations arising therefrom. The data and information contained in the Product Selector is provided 'AS IS'.

The information provided herein relates only to the specific products designated and may not be applicable when such products are used in combination with other materials or in any process. **Bostik encourages you to always read and understand (1) the Technical Data Sheet ("TDS") and (2) the Safety Data Sheet ("SDS") for all products before use.** The SDS contains the necessary information related to prevention and safety related to the use of a product. In addition to information about the product's properties, it provides recommendations about storage, conditions of use, handling, transportation of the product (hazard level, packaging groups), elimination or destruction and the procedure in the event of an accident. The Safety Data Sheets for our products can be found at <http://www.bostik.com/us/tools-and-training/bostik-sds/>. Also, Technical Data Sheets for our products can be found at <http://www.bostik.com/us/tools-and-training/bostik-tds/>. You are welcome and encouraged to contact your customer service representative to discuss your specific requirements and to determine what product is appropriate for you and your applications.

NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR WARRANTY OF MERCHANTABILITY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE PRODUCTS DESCRIBED OR THE INFORMATION PROVIDED HEREIN, AND SUCH WARRANTIES ARE HEREBY DISCLAIMED. Additionally, Bostik disclaims any liability for direct, incidental, consequential, or special damages to the maximum extent allowed by law. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.)

Nothing contained herein constitutes a license to practice under any patent, and it should not be construed as an inducement to infringe any patent. You are advised to take appropriate steps to be sure that any proposed use of the products will not result in patent infringement.

Medical Device Disclaimer

Bostik has implemented a policy regarding the use of Bostik products in Medical Devices applications that are in contact with the body or circulating bodily fluids. Bostik strictly prohibits the use of any Bostik products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Bostik trademarks and the Bostik name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Bostik allows, endorses or permits the use of Bostik products in such medical devices.

It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any Bostik products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies). It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any post market surveillance obligations. Any decision regarding the appropriateness of using a particular Bostik material or product in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.

Acceptance of Terms & Conditions

By using this Product Selector, you are hereby consenting and agreeing to the above terms and conditions of use, and you agree to waive certain rights as set forth herein.

(Revised May 3, 2016)



For over 125 years, Bostik has been a global leader in industrial adhesives and sealants.

With strong collaborative partnerships and alliances, we are a fully-owned subsidiary of Arkema and have a presence in over 40 countries.

Bostik's extensive technical expertise and history of innovation enable our company to successfully address the ever-changing needs of our customers and anticipate future needs to come. We have three corporate R&D laboratories and 11 research centers worldwide.

Bostik's advanced technologies include hot melt adhesives such as **butyls, EVAs, polyesters, polyamides, polyolefins, styrenic block copolymers** and **polyurethanes** as well as some **solvent** and **water-based** chemistries. Our company also has capability in reactive adhesives including polyurethanes and silane modified polymers. Bostik designs smart adhesives to be fast, high-performing and safe, saving customers time and money while improving their manufacturing processes. Furthermore, our solutions address today's growing economical and environmental concerns.

Our range of capabilities enables us to successfully serve several diverse

industrial markets. These include **aerospace, assembly, automotive, building components, flexible and rigid packaging, general transportation and tape and label.**

For more information on our types of adhesives and sealants and the technologies behind them, please review this Product Selector.

This Product Selector was designed as a guide for our customers to assist them in choosing the best adhesive or sealant for their application. It helps guide customers through our core formulations and assist with selecting the right technology across Bostik's vast product lines.

While this guide is fairly representative of the depth of products Bostik can provide, it is not a complete list. It will help you better understand the range of our technology and products, but we encourage you to use it as a reference, and reach out to a Bostik team member for more information. We have the technical capability to help guide you to the product you need. Call **800-7-BOSTIK** with any questions.

Butyl Adhesives and Sealants

What are Butyl Adhesives and Sealants?	7	Featured Butyl Adhesives and Sealants	9
Choosing the Right Butyl Adhesive or Sealant	8	Butyl Adhesives and Sealant Selector Tool	11
Benefits of Butyl Adhesives and Sealants	9	Butyl Adhesives and Sealants Product Table	12

Ethylene Vinyl Acetate Adhesives

What are Hot Melt EVA Adhesives?	14	Featured Hot Melt EVA Adhesives	16
Choosing the Right Hot Melt EVA Adhesive	15	Hot Melt EVA Adhesives Selector Tool	18
Benefits of Hot Melt EVA Adhesives	16	Hot Melt EVA Adhesives Product Table	19

Film Adhesives

What are Film Adhesives?	21	Film Adhesives Selector Tool	25
Choosing the Right Film Adhesive	22	Film Adhesives Substrate Compatibility Guide	26
Benefits of Film Adhesives	23	Film Adhesives Product Table	27
Featured Film Adhesives	23		

Polyamide Adhesives

What are Hot Melt Polyamide Adhesives?	30	Featured Hot Melt Polyamide Adhesives	32
Choosing the Right Hot Melt Polyamide Adhesive	31	Hot Melt Polyamide Adhesives Selector Tool	34
Benefits of Hot Melt Polyamide Adhesives	32	Hot Melt Polyamide Adhesives Product Table	35

Polyester Adhesives

What are Polyester Adhesives?	37	Conventional Polyester Hot Melt Adhesives Product Table	42
Choosing the Right Polyester Adhesive	38	Benefits of Vitel® Polyester Hot Melt Adhesives	43
Benefits of Conventional Polyester Hot Melt Adhesives	39	Featured Vitel Polyester Adhesives	43
Featured Conventional Polyester Hot Melt Adhesives	39	Vitel Polyester Adhesives Selector Tool	45
Conventional Polyester Selector Tool	41	Vitel Resins Product Table	46

Polyolefin Adhesives

What are Polyolefin Adhesives?	48	Featured Polyolefin Adhesives	50
Choosing the Right Polyolefin Adhesive	49	Polyolefin Adhesives Selector Tool	52
Benefits of Polyolefin Adhesives	50	Polyolefin Adhesives Product Table	53

Polyurethane Adhesives and Sealants

What are Polyurethane Adhesives?	55	Featured Polyurethane Adhesives	57
Choosing the Right Polyurethane Adhesive	56	Polyurethane Adhesives Selector Tool	59
Benefits of Polyurethane Adhesives	57	Polyurethane Adhesives Product Table	60

Silane Modified Polymer Sealants

What are Silane Modified Polymer Sealants?	62	Featured Silane Modified Polymer Sealants	64
Choosing the Right Silane Modified Polymer Sealant	63	Silane Modified Polymer Sealants Selector Tool . .	66
Benefits of Silane Modified Polymer Sealants . . .	64	Silane Modified Polymer Sealants Product Table	67

Solvent-Based Adhesives

What are Solvent-Based Adhesives?	69	Featured Solvent-Based Adhesives	71
Choosing the Right Solvent-Based Adhesive	70	Solvent-Based Adhesives Selector Tool	73
Benefits of Solvent-Based Adhesives	71	Solvent-Based Adhesives Product Table	74

Styrenic Block Copolymer Adhesives

What are Hot Melt SBC Adhesives?	76	Benefits of Hot Melt Hot Applied SBC Adhesives	82
Choosing the Right Hot Melt SBC Adhesive	77	Featured Hot Melt Hot Applied SBC Adhesives	82
Benefits of Pressure Sensitive Hot Melt SBC Adhesives	78	Hot Melt Hot Applied SBC Adhesives Selector Tool	84
Featured Pressure Sensitive Hot Melt SBC Adhesives	78	Hot Melt Hot Applied SBC Adhesives Substrate Compatibility Guide	85
Pressure Sensitive Hot Melt SBC Adhesives Selector Tool	80	Hot Melt Hot Applied SBC Adhesives Product Table	86
Pressure Sensitive Hot Melt SBC Adhesives Product Table	81		

Water-Based Adhesives

What are Water-Based Adhesives?	89	Cohesive Water-Based Adhesives Selector Tool	97
Choosing the Right Water-Based Adhesive . . .	90	Cohesive Water-Based Adhesives Product Table	98
Benefits of Rigid Packaging Water-Based Adhesives	91	Benefits of Pressure Sensitive Water-Based Adhesives	99
Featured Rigid Packaging Water-Based Adhesives	91	Featured Pressure Sensitive Water-Based Adhesives	99
Rigid Packaging Water-Based Adhesives Selector Tool	93	Pressure Sensitive Water-Based Adhesives Selector Tool	101
Rigid Packaging Water-Based Adhesives Product Table	94	Pressure Sensitive Water-Based Adhesives Product Table	102
Benefits of Cohesive Water-Based Adhesives	95		
Featured Cohesive Water-Based Adhesives	95		

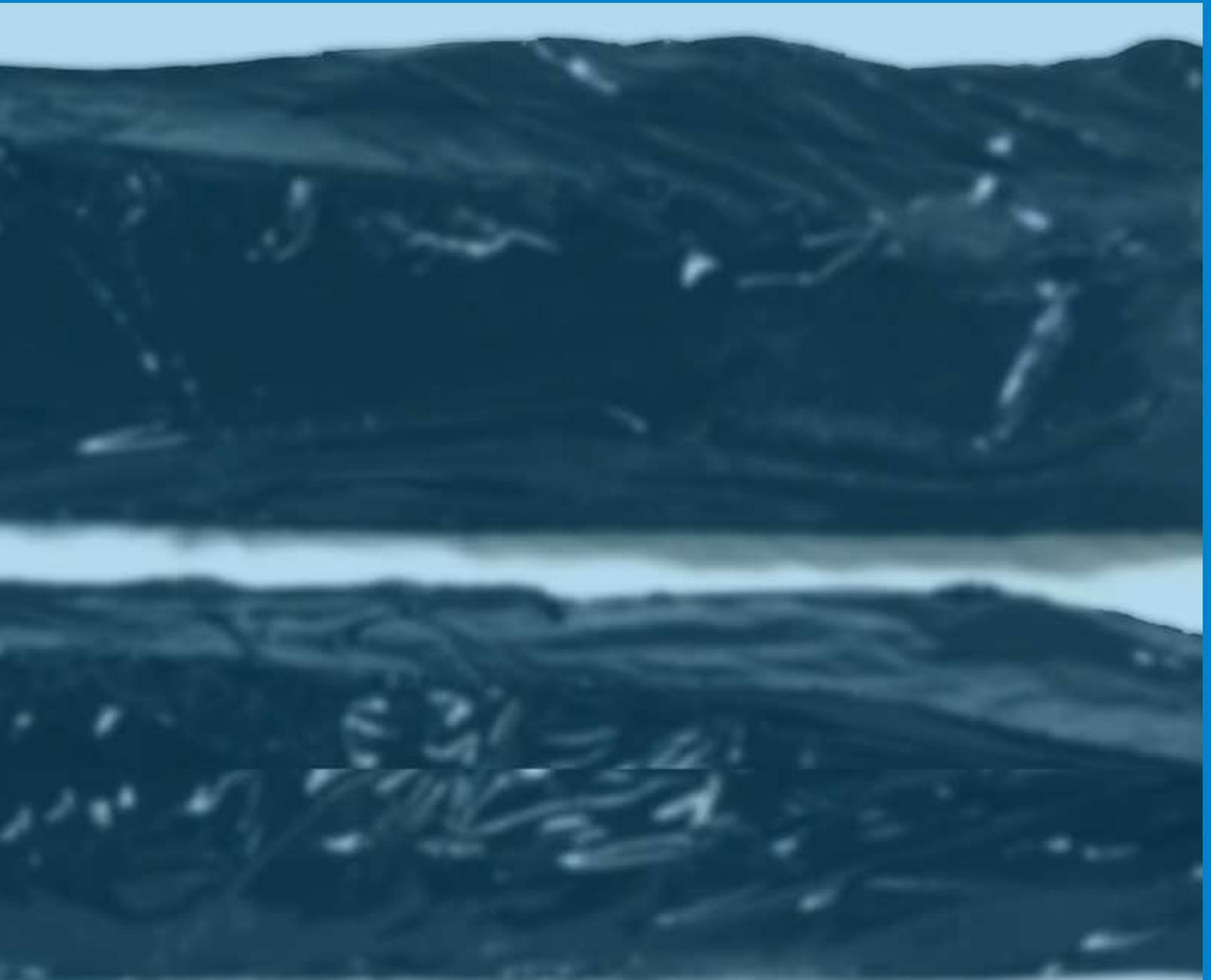
Web Adhesives

What are Web Adhesives?	104	Web Adhesives Selector Tool	108
Choosing the Right Web Adhesive	105	Web Adhesives Substrate Guide	109
Benefits of Web Adhesives	106	Web Adhesives Product Table	110
Featured Web Adhesives	106		

BUTYL ADHESIVES AND SEALANTS

Building Components | Weatherproofing | Waterproofing
Automotive Waterproofing | Automotive Assembly | Sealing

BUTYL



Butyl Adhesives and Sealants

Bostik's one-component butyl adhesives and sealants are cost competitive and provide good adhesion to many different and difficult substrates. **Waterproof and UV resistant**, these products typically never dry or crack. With **high malleability and excellent weatherability**, our butyl adhesives and sealants also offer sag resistance and are easy to use.

What are Butyl Adhesives and Sealants?

Bostik's butyl adhesives and sealants are composed of butyl rubber and polyisobutylene. These products can be solid or liquid at room temperature, depending on the formula. Additionally, our butyls do not dry out or crack over time. This unique property enables them to be efficient waterproofing and sealing solutions.

Butyls come in two categories, adhesives and sealant. A butyl adhesive is commonly used to adhere two substrates together whereas a butyl sealant is more commonly used for waterproofing or sealing cracks. Both will adhere well to the substrates, but the adhesive has a more solid form that works to keep substrates together.

Butyl Adhesives

- Tape applications
- Flashing applications
- HVAC applications



Butyl Sealants

- Waterproofing applications
- Air leak prevention
- Crack filling between layers





Choosing the Right Butyl Adhesive or Sealant

Determine the end use requirements

Butyl adhesives and sealants are used for a variety of applications whether you need:

- Waterproofing
- UV resistance
- Weatherability
- Adhesion

Choose either an adhesive or sealant

Consider if your application needs to have adhesive strength or if it needs to be sealed so that water or air cannot get in or out.

Understand the required temperature range performance

- Butyl adhesives have a high temperature performance range. Once the adhesive is in place, it can withstand temperatures well over 200°F.
- Sealants are defined by the temperature range they can handle. Bostik helps customers determine which sealant to use based on the temperature range a given application will need to withstand.

Consider the adhesive form

- For high throughput applications, use drums.
- For smaller scale applications, consider using pails, tape, rope or cartridges.
- Bostik has the capability to create tapes, ropes and stamps out of most of the butyl products that are available.



Benefits of Butyl Adhesives and Sealants

Bostik's butyl adhesives and sealants offer a range of benefits:



Featured Butyl Adhesives and Sealants

Butyl 2285

Weatherproofing Sealant

Key Features

- Single component
- Applied using a hot butyl extruding device
- Excellent adhesive and cohesive results under extreme temperatures

This hot butyl product is used for caulking and sealing painted or unpainted steel parts in automotive assembly. Approved for sealing rear lamps, Butyl 2285 helps prevent air, water and dust from getting into the vehicle.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Solids	98% min
Density	1.44 g/cc
Application Temperature	90-110 °C

Butyl 3023

Weatherproofing Sealant

Key Features

- An option for serviceability purposes
- Excellent workability results
- Balanced adhesive and cohesive performance under extreme temperatures

This automotive grade, one-component polyisobutylene sealant is black in color and manufactured in the form of rolls or die cuts. Very easy to use, Butyl 3023 offers excellent weatherability and durability. It also is always tack and never dries or cracks.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Solids	99-99.6% min
Density	1.1 - 1.2 g/cc
Application Temperature	5 - 35°C

Butyl 3303

Weatherproofing Sealant

Key Features

- Superior weatherability
- Soft paste with excellent ease of use
- Excellent durability

This beige colored, one-component, automotive grade polyisobutylene sealant is a soft paste and very easy to use. With excellent weatherability and durability, it is used for caulking and sealing unpainted steel parts throughout vehicle assembly.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Solids	99% min
Density	1.3 - 1.5 g/cc
Application Temperature	5 - 35 °C

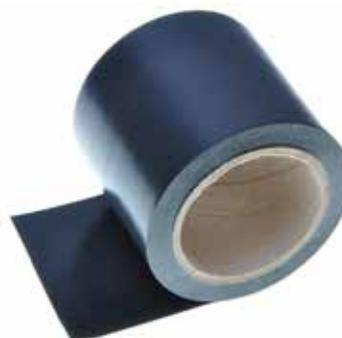
Butyl 9492KN

Weatherproofing Adhesive

Key Features

- High tack
- High viscosity
- Impermeable to air, water and dust

Butyl 9492KN is a high tack, one-component butyl adhesive. Pressure sensitive, this product is the ideal choice for flashing tape applications.



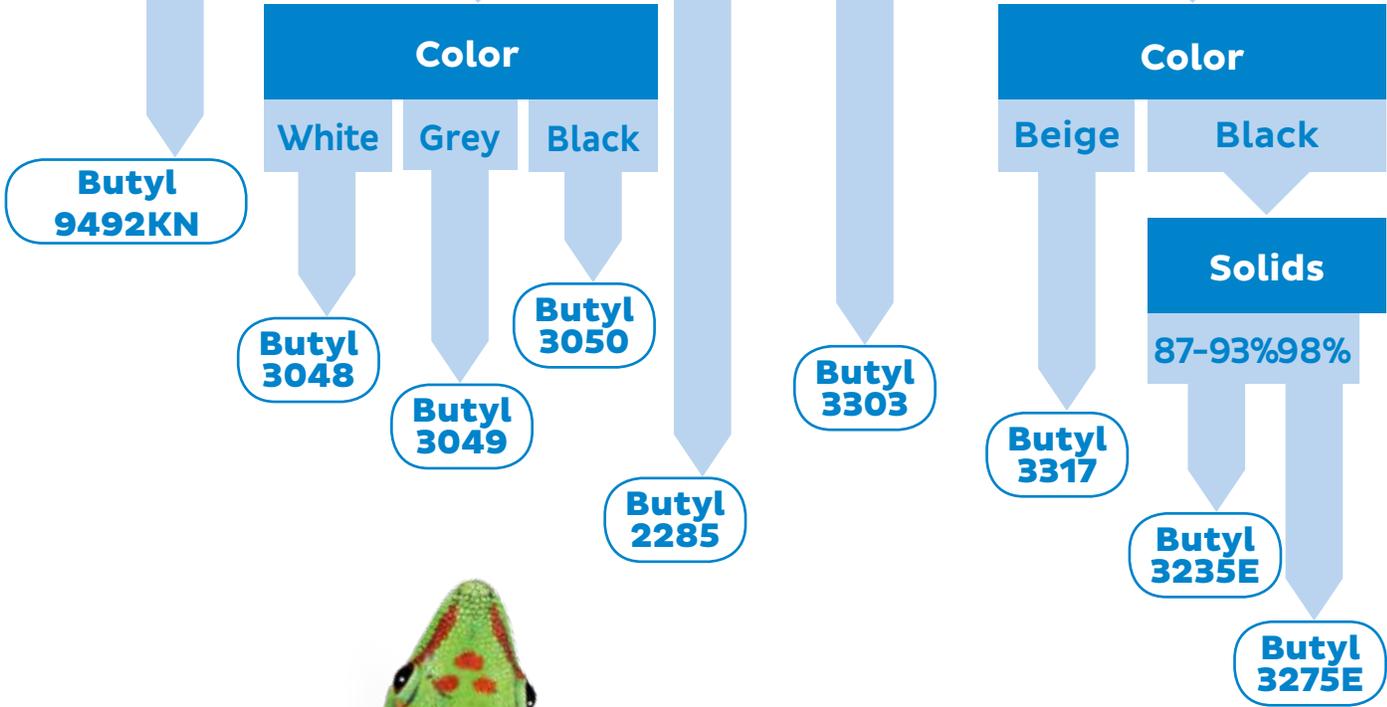
TYPICAL PHYSICAL PROPERTIES

Description	Results
Solids	100% min
Density	1.4 g/cc
Application Temperature	82 - 93°C

Selecting the Right Butyl Adhesive or Sealant

Type of Product

Adhesive	Adhesive/Sealant		Sealant	
Temperature Range Performance	Temperature Range Performance		Temperature Range Performance	
High	Moderate	High	Low	Moderate



Butyl Adhesives and Sealants

Product	Color	Solids	Density (g/cc)	Application Temperature (°C)	Sealant or Adhesive	Product Features
Butyl 2285	Black	98% min	1.30	90 - 110	Adhesive/ Sealant	Hot butyl, compatible with painted and unpainted steel parts, approved for sealing rear lamps in automotive industry
Butyl 3139	Black	98% min	1.45-1.65	5 - 35	Sealant	Body sealing butyl, refrigeration and air conditioner sealing
Butyl 3303	Beige	99% min	1.30 - 1.50	5 - 35	Sealant	Automotive grade, one-component butyl: excellent weatherability and durability, soft and easy to use, beige
Butyl 3304	Beige	90% min	1.44	5 - 35	Sealant	Butyl sealant for caulking and sealing painted or unpainted steel parts, soft and easy to use, beige
Butyl 3317	Black	98% min	1.20 - 1.40	5 - 35	Sealant	UV and temperature resistance, sealing glass and rubber overlays in mass transportation industry
Butyl 3235E	Beige	85 - 95% min	1.15 - 1.35	5 - 35	Sealant	UV and temperature resistance: body sealing and sealing windshield and rubber packing
Butyl 3275E	Black	87-93% min	1.20 - 1.40	5 - 35	Sealant	Body sealing butyl, sealing laminated overlaps between windshield and rubber packing
Butyl 3320ED	Black	85-100% min	1.60	5 - 35	Sealant	One-component butyl sealant, soft and easy to use, caulking and sealing painted or unpainted steel in automotive industry
Butyl 3023	Black	99-99.6% min	1.10 -1.20	5 - 35	Adhesive/ Sealant	Rolls or die cut form, always tacky and never dries or cracks, black
Butyl 3048	White	90% min	1.50 - 1.70	5 - 35	Adhesive/ Sealant	Sealant for metal parts and other household joints or ducts, white
Butyl 3049	Grey	90% min	1.50 - 1.70	5 - 35	Adhesive/ Sealant	Sealant for metal parts and other household joints or ducts, gray
Butyl 3050	Black	90% min	1.50 - 1.70	5 - 35	Adhesive/ Sealant	Sealant for metal parts and other household joints or ducts, black
Butyl 9603K	Black	100% min	0.93	180 - 200	Adhesive	Road marking tape, high cohesion and attachment
Butyl 9492KN	Black	100% min	1.40	180 - 200	Adhesive	Flashing tape, high tack and cohesion



HOT MELT ETHYLENE VINYL ACETATE ADHESIVES

**Case Sealing | Carton Sealing | Label Pick-up | Food Packaging
Heat Sealing | Book Binding | Consumer Goods Packaging**

ETHYLENE VINYL ACETATE

Hot Melt Ethylene Vinyl Acetate Adhesives

Bostik's hot melts based on Ethylene Vinyl Acetate (EVA) polymers are typically **tack-free and flexible** at room temperature. Supplied in the optimal mini-pastille form, these adhesives have excellent auto feed properties while providing **superior wet-out and rapid set speed when hot applied**.

What are Hot Melt EVA Adhesives?

Hot Melt EVA-based Adhesives are 100% solid, thermoplastic adhesives that typically have minimal surface tack and are solid at room temperature. When heat is applied, these adhesives liquefy, increasing their surface tack and forming a bond upon cooling. They also provide flexibility and

cohesive strength. Furthermore, Bostik's hot melt EVA adhesives are expertly formulated with a variety of additives. These additives include waxes and tackifiers to dial in temperature resistance, wettability and set speed to a variety of application and end-use performance needs.





Choosing the Right Hot Melt EVA Adhesive

Determine the end use temperature exposure

Bostik's line of hot melt EVA adhesives cover a wide range temperatures from approximately -40 to 150°F.

- Frozen foods exposed to very cold or blast freezer temperatures
- End-of-line packaging in typical ambient conditions
- Exposure to high temperatures in rail shipping
- Unpredictable environmental conditions

Understand the substrate

- Sensitive substrates requiring low application temperature
- Smooth and difficult to bond to high recycle content corrugate
- Standard corrugate with minimal performance needs
- Waxy coatings or printed corrugate

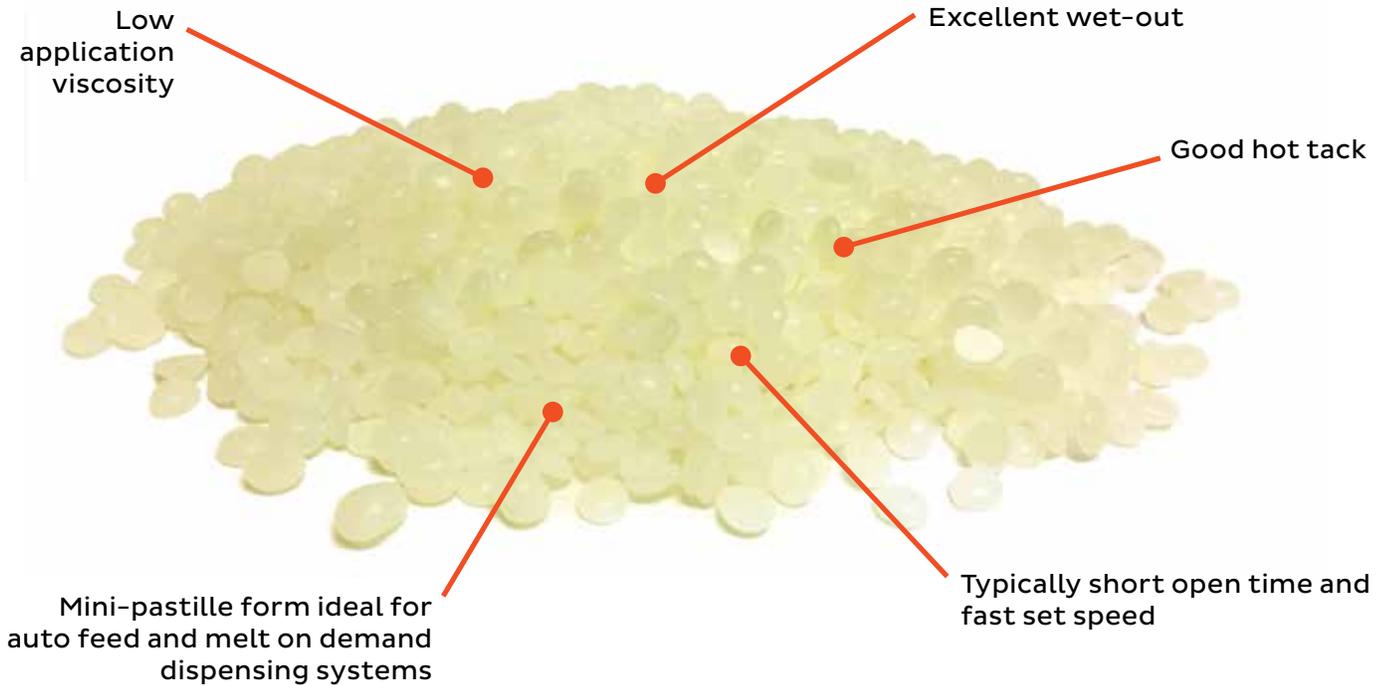
Understand the application and packaging process

- High memory corrugate or fast line speeds requiring fast set speeds
- Packaging of hot fill products requiring elevated temperature green strength
- Bonding of primary food packaging requiring FDA direct food contact clearance
- Auto-feed systems requiring tack-free and optimal adhesive shape for clog free airveying



Benefits of Hot Melt EVA Adhesives

Bostik's hot melt EVA adhesives offer a range of benefits:



Featured Hot Melt EVA Adhesives

Thermogrip® 1505

General Purpose Case and Carton Sealing Adhesive

Key Features

- General purpose
- Good thermal stability
- Wide range of temperature resistance

Thermogrip 1505 is a versatile, general purpose case and carton adhesive that offers optimum product flexibility. With clean machining, this product also provides very good thermal stability for optimal manufacturing efficiency. Thermogrip 1505 also offers an excellent balance of heat and cold resistance for a wide range of shipping conditions, making it a great product for a variety of applications.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity	1,200 cP @ 350°F 1600 cP @ 325°F 2450 cP @ 300°F
Softening Point	231°F
Suggested Running Temperature	325 - 350°F
Density	0.96 g/cc @ 77°F

Thermogrip 1935

Case and Carton Sealing Adhesive

Key Features

- Excellent wet-out
- Balanced open and set time
- Reliable performance in a variety of applications

Thermogrip 1935 is a hot melt EVA adhesive specifically formulated to bond to recycled board stock. It has a low viscosity, which enables it to have excellent penetration and hot tack for superior adhesion to difficult substrates. Thermogrip 1935 also features a medium set speed and broad function range, making it suitable for freezer to general purpose applications.

Thermogrip 1926A

Can Labeling Pick-up Adhesive

Key Features

- Non-permanent
- Reliable pick-up
- Aggressive hot tack

Thermogrip 1926A is a hot melt EVA adhesive. H1926A has aggressive hot tack that offers excellent and reliable pick-up in non-permanent roll through applications. With aggressive hot tack, this product offers excellent and reliable pick-up in non-permanent roll through applications.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity	4000 cP @ 275°F (135°C) 2325 cP @ 300°F (149°C) 1600 cP @ 325°F (163°C) 975 cP @ 350°F (177°C)
Softening Point	225°F (107°C)
Suggested Running Temperature	325-350°F (163-177°C)
Density	0.96 g/cc @ 77°F (25°C)



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity	2,000 cP @ 200°F 650 cP @ 225°F 300 cP @ 250°F 150 cP @ 275°F
Softening Point	150°F
Suggested Running Temperature	225 - 275°F
Density	0.98 g/cc @ 77°F

Selecting the Right Hot Melt EVA Adhesive

Application

Case and Carton Sealing

Heat Seal

Label Pick-up

Cold Temperature Resistance

Thermogrip 1948A

Thermogrip 1926A

>-40°F

>-20°F

0°F to 4°F

Thermogrip 1238

Application

General Purpose

Low Application Temperature

Water White

Fast Set

Application

Direct Food

Difficult Substrate

Thermogrip 1714

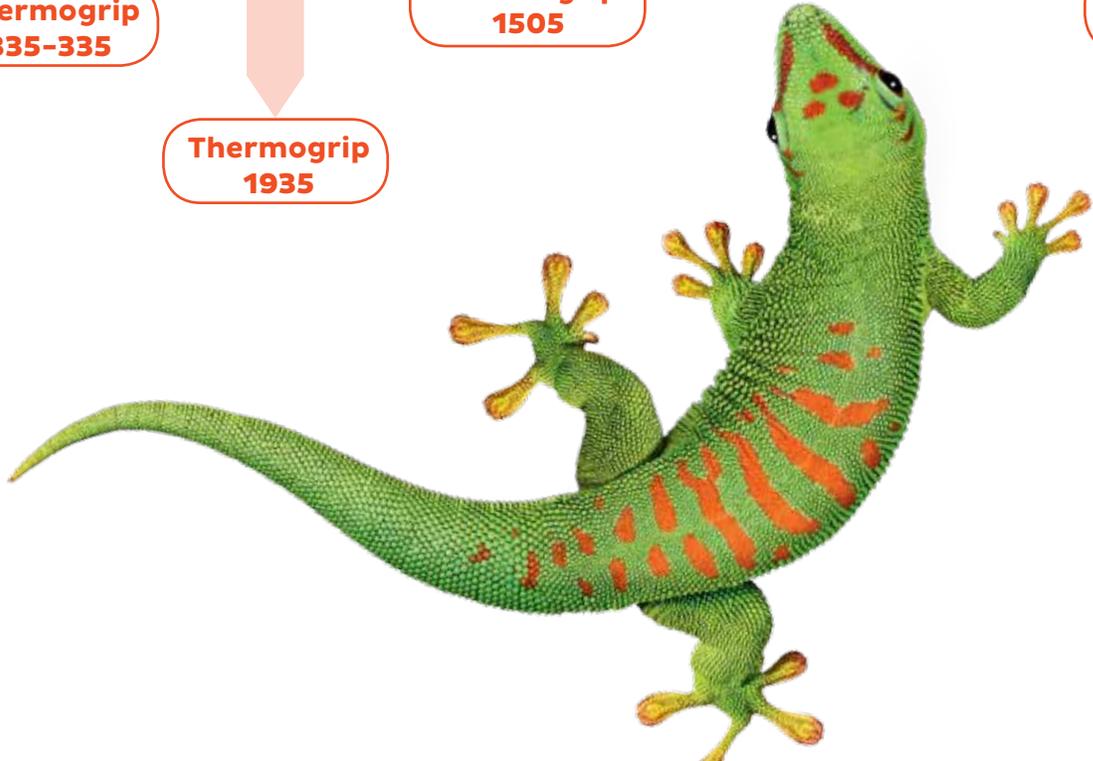
Thermogrip 1639

Thermogrip 335-335

Thermogrip 1935

Thermogrip 1505

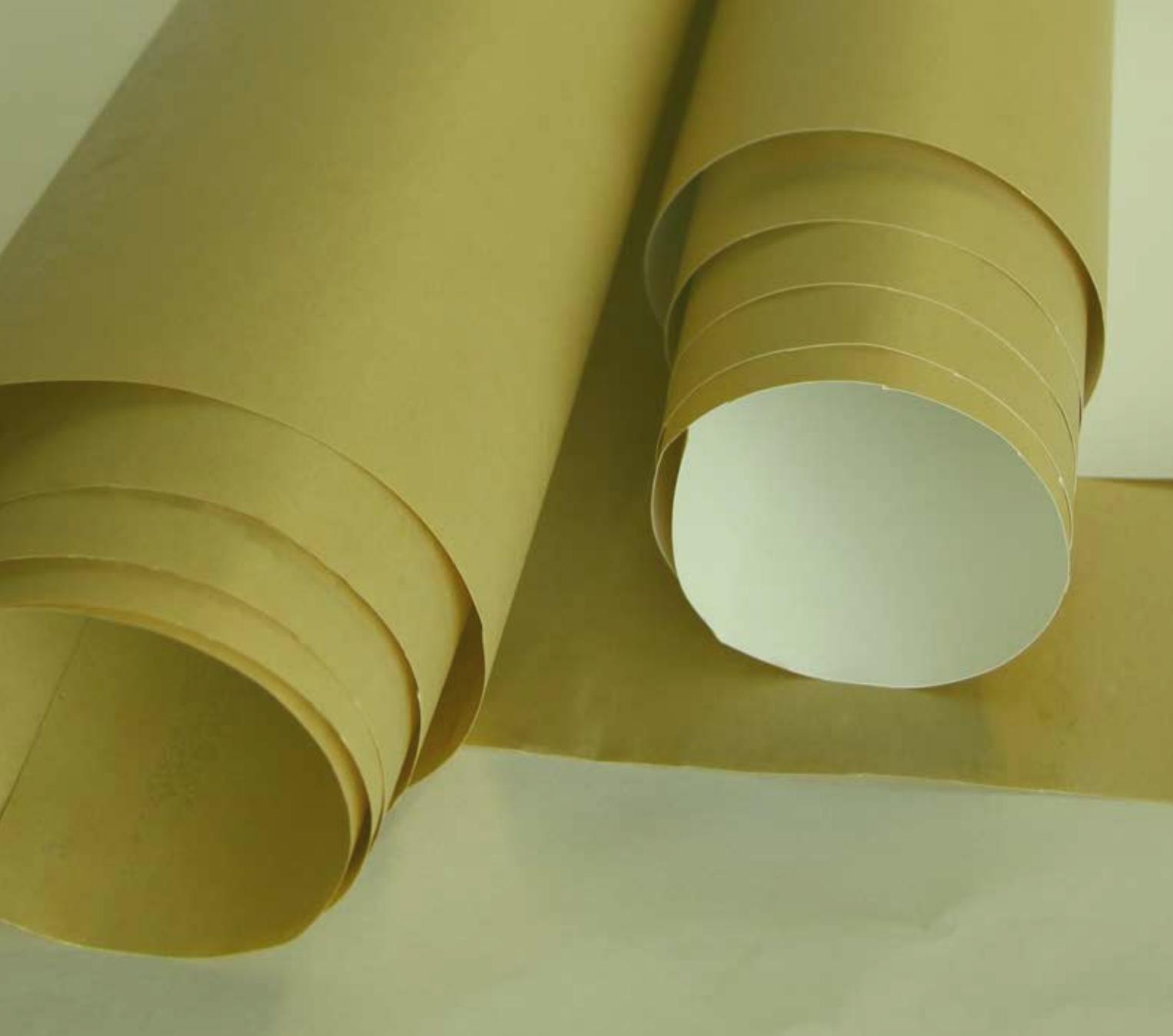
Thermogrip 1237A



ETHYLENE VINYL ACETATE

Hot Melt EVA Adhesive Products

Product	Temperature Performance Range (°F)	Set Speed	Viscosity (cp)	Softening Point (°F)	Open Time (min) at ambient conditions, 10 mil film	Density @ 77°F	Product Features
Thermogrip 1030X	-20 - 130	Slow	1,255 @ 325°F 1,000 @ 350°F	160	325	0.98	Heat reseal product, fluorescent
Thermogrip 1237A	40 - 140	Fast	1,500 @ 325°F 1,000 @ 350°F	230	325 - 350	0.98	High memory corrugated stock, case and carton seal
Thermogrip 1238	-40 - 130	Medium	1,350 @ 325°F 950 @ 350°F	163	32 - 350	0.96	Freezer grade case and carton seal
Thermogrip 1367	40 - 130	Fast	5,200 @ 325°F 3,650 @ 350°F	163	350	0.98	Filter assembly, heat reactivable
Thermogrip 1378	20 - 140	Medium	980 @ 325°F 690 @ 350°F	202	325 - 375	0.96	Sift proof, difficult substrates case and carton seal
Thermogrip 1639	35 - 150	Fast	1,350 @ 325°F 875 @ 350°F	229	300 - 350	0.97	Water white premium case and carton seal
Thermogrip 1661	20 - 140	Fast	1,305 @ 275°F 840 @ 300°F	190	275 - 300	0.98	Higher heat resistant, low application temperature, case and carton seal
Thermogrip 1714	20 - 130	Medium	1,375 @ 250°F 850 @ 275°F	164	250 - 300	0.98	General purpose, low application temperature, case and carton seal
Thermogrip 1926A	40 - 140	Fast	300 @ 250°F 150 @ 275°F	150	225 - 275	0.98	Hot melt label pick-up
Thermogrip 1935	-40 - 140	Medium	1,600 @ 325°F 975 @ 350°F	225	325 - 350	0.96	Wide service temperature, general purpose, difficult substrates, case and carton seal
Thermogrip 284-332	40 - 140	Fast	300 @ 250°F 175 @ 275°F	150	250 - 275	1.1	Hot melt label pick-up, natural resin
Thermogrip 287-337	30 - 140	Fast	4,250 @ 250°F 2,900 @ 275°F	159	225 - 325	0.92	Tube end caps, palletizing
Thermogrip 335-335	-40 - 130	Medium	1,240 @ 325°F 1,000 @ 350°F	162	300 - 350	0.98	Direct food contact, freezer grade, blast freezer, case and carton seal
Thermogrip 1505	0 - 140	Medium	1,600 @ 325°F 1,200 @ 350°F	231	325 - 350	0.96	General purpose, case and carton seal



FILM ADHESIVES

**Aerospace Interior Assembly | Aircraft Decorative
Laminate Construction and Attachment | Assembly of
Electronics | Decal Assembly | Fabric to Foils, Films and
Foam Bonding | Mounting Adhesive | Textile Bonding
Rail Interior Assembly | Vinyl Laminate Bonding**

Film Adhesives

Bostik's film adhesives are high-performance, solvent-free bonding agents supplied in convenient, easy-to-use forms. As a result of their unique characteristics, Bostik's film adhesives offer **functional and cost benefits to manufacturers in many industries.**

What are Film Adhesives?

In their simplest form, film adhesives consist of a thin layer of adhesive supported on a peelable backing. They can be widely used on products ranging from aircrafts and automobiles to toys, appliances, clothing and electronic instruments. Their versatility frees designers from many of the usual constraints and often provides a convenient, economical solution to otherwise difficult or costly joining problems.

Bostik's film adhesives are typically solvent-cast adhesives that form a thin flexible layer, which can be heat activated or pressure sensitive for various

applications. Film thicknesses range from one to five milliliters. The standard width is 60 inches; however, custom widths are available from 30 to 61 inches. These films help control consistency in the application usage variance to give repeatable performance characteristics.

Each film adhesive offers unique performance characteristics and serves a different use. It is critical to understand an application's processing and mechanical needs in order to determine which type of film adhesive is best suited.

Bostik offers three different types of film adhesives:

Thermoset adhesives

- Require heat and pressure to adhere the film to the substrate and form a strong cross-linked adhesive network that is not reversible
- Are cross-linking, which enables the bond line to resist higher temperatures than the non-cross-linked system

Thermoplastic adhesives

- Require heat to adhere to the substrate, but form a reversible bond that can be deactivated with heat
- Depending on the temperature sensitivity of the substrates being bonded, Bostik offers adhesives with a range of melting and curing conditions.

Pressure sensitive adhesives (PSA)

- Do not require heat to form a bond; they can simply be exposed to a small amount of pressure to adhere
- Can be formulated as cross-linking adhesives to enhance end use performance





Choosing the Right Film Adhesive

Film thickness

- The film manufacturing process has the ability to make a range of film thicknesses, which allows users the capability to more easily customize the bond strength of their application.
- The ideal film thickness will depend on the specific substrates, processing conditions and film type being used for an application.

Flame retardancy

- These film adhesives are an excellent way to impart additional flame retardancy into a layered system.
- Just like the non-flame retardant film adhesives, both the thickness and width of the film can be varied to meet custom needs.

Carrier

- The other factor to consider in selecting a film adhesive is the carrier(s) used to supply the adhesive.
- Depending on the way the adhesive will be processed, one film construction may be more desirable than another. Bostik offers three different construction forms.

Single release liner

- This film construction is an unsupported film adhesive that is simply an adhesive on a paper release liner.
- This type of construction is denoted in the film name by starting with “F10”.

Two-sided release liner

- This film construction is an unsupported film adhesive on paper and polyethylene release liners. It provides a mirror-like bonding surface on one side of the adhesive, which can minimize adhesive show-through in the application.
- This construction is particularly desirable for die-cutting operations. It is denoted in the film name as “F14”.

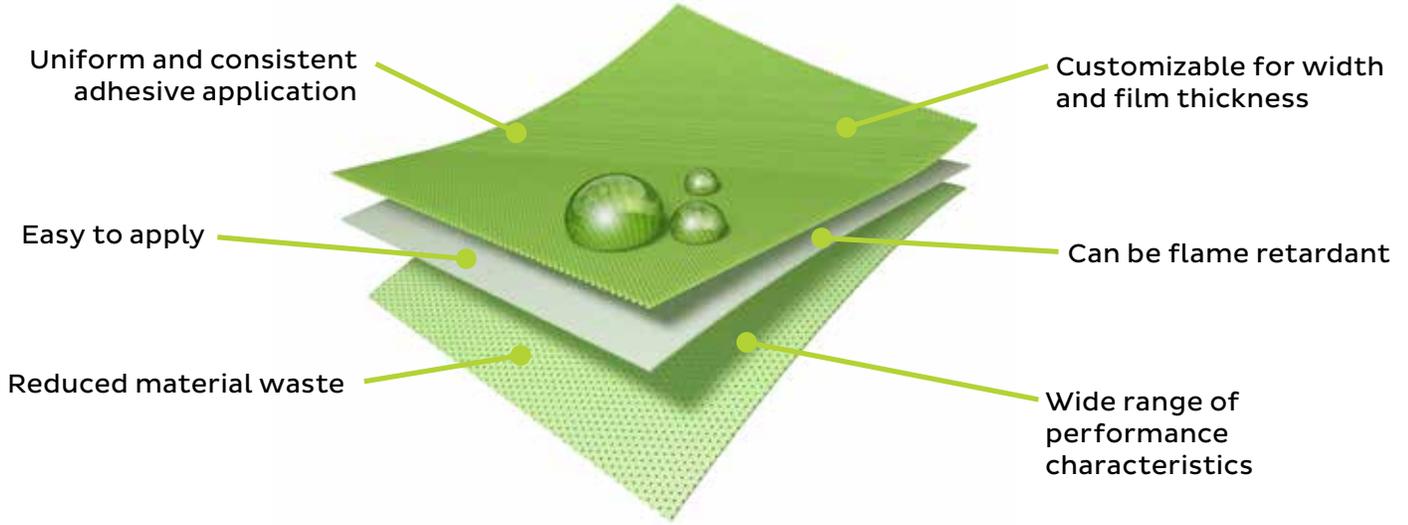
Supported

- This film construction is a fiberglass-supported film adhesive without a liner. The adhesive is applied directly to the fiberglass.
- This construction is denoted in the film name as “F15”.

Benefits of Film Adhesives

Bostik's film adhesives are thin films that are heat or pressure activated and can vary in thickness and width. These products offer

several advantages over other bulk adhesives and alternative bonding options.



Featured Film Adhesives

F10-316 Polyester Thermoset Film Adhesive

Key Features

- Low temperature activation
- Fast curing
- Good water resistance

Bostik's film adhesive F10-316 is a fast curing, thermoset film based on linear saturated copolyester resins. It is designed to have excellent adhesion to fabrics and foams while imparting excellent wash resistant properties when cured. The F10-316 film has a fast set time and is softer with improved flow properties compared to other Bostik film adhesives.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	White to Light Yellow Film
Dry film thickness	2 mils (0.005cm)
Dry film weight (2 mil film)	56 g/yd ² (67g/m ²)
Liner Properties	Silicone-coated 60 lbs bleached kraft
Release from liner (before heat is applied)	80 g/inch (max.)
Volatiles	< 3.0%

F10-337L

Flame Retardant Thermoplastic Film Adhesive

Key Features

- Excellent flame retardant properties
- Low temperature activation
- Brown colored film

F10-337L is a non-halogenated, flame retardant, thermoplastic film adhesive based on a linear saturated copolyester resin. It is designed to have excellent adhesion to fabrics and foams while imparting excellent flame resistant properties.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Brown
Release Liner	60# silicone-coated, super calendared, brown Kraft
Dry Film Thickness	2.5 mils (0.006 cm)
Dry Film Weight (2.5 mil film)	87.8 g/yd ² (105 g/m ²)
% Volatiles	<3.6%

AVAILABILITY

Properties	Values
Roll Width (typical)	57 inches (145 cm)
Roll Length (typical)	500 linear yards (457 m)
Core I.D.	3 inches (7.6 cm)

F14-588

Flame Retardant Pressure Sensitive Film Adhesive

Key Features

- Excellent peel and shear strength
- Low OSU heat release and smoke generation
- Meets BMS 5-91 TYPE IV product specification

F14-588 is a flame retardant, acrylic, film adhesive. The primary application for F14-588 is the bonding of flexible PVF and vinyl materials for the interior of commercial aircraft and trains. This film adhesive offers excellent shear and heat resistance while maintaining low OSU heat release and smoke generation. F14-588 is the non-decabromodiphenyl ether offset to F14-576.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Film Weight	60 lbs and 90 g/m ²
% Volatiles	< 2.5%
Peel from 6 mil Paper Liner	12 g/in (4.7 g/cm)
Peel from 4 mil LDPE Liner	40 g/in (16 g/cm)

AVAILABILITY

Film Thickness	2 and 3 mils (51 and 76 microns)
Roll Width	55 to 61 in (140 to 155 cm)
Roll Length	100 to 220 ly (91-201 m)
Core I.D.	3 in (7.6 cm)

Selecting the Right Film Adhesive

Non-Flame Retardant

Heat Resistance

< 250°F

> 250°F

F10-316

F10-250

Flame Retardant

Curing System

No

Yes

Pressure Sensitive

No

Yes

Good Green Strength During Processing

No

Yes

F10-337L

FPA110-1FR

F14-588

F10-651B



Film Substrate Compatibility

Product		Substrate Compatibility														
		Fabric	Leather	Urethane Foam	Wood	Metals	Aluminum	Fiberglass	Rubber	Treated PP	PVC	ABS	PVDF	Tedlar	PEI	PEEK
Non-Flame Retardant Thermoset Films	F10-250	●	●	●	●	●	●	●		●			●			
	F10-300	●	●	●	●	●	●	●		●	●	●	●	●	●	●
	F10-305	●	●	●	●	●	●	●		●	●	●	●	●	●	●
	F10-316	●	●	●	●	●	●	●		●	●	●	●	●	●	●
Flame Retardant Thermoplastic Films	F10-337L	●	●		●		●	●		●		●	●	●	●	●
	FPA110-1FR	●	●	●	●	●	●	●		●		●	●	●	●	●
Flame Retardant Pressure Sensitive Films	F14-552	●	●	●	●	●	●			●	●	●	●	●	●	●
	F14-554	●	●	●	●	●	●			●	●	●	●	●	●	●
	F14-588	●	●	●	●	●	●			●	●	●	●	●	●	●
Flame Retardant Thermoset Films	F10-651B		●		●		●	●		●		●	●	●	●	●
	F15-789		●		●		●	●		●		●	●	●	●	●

The chart above provides typical substrates with which Bostik's film adhesives have been used, but is not a guarantee of suitability. Bostik recommends evaluating the performance of a film adhesive in individual applications to ensure performance requirements are achieved.

Film Adhesive Products

Film Type	Product	Base Polymer Type	Application Temperature for Bonding (°F)	Suggested Curing Conditions	Adhesive Weight for a 3 mil film (g/m ²)	Temperature Resistance (°C)	Water Resistance	Solvent Resistance	Product Features
Non-Flame Retardant Thermoset Films	F10-250	Nitrile Phenolic	220-250	3-10 minutes @ 360 °F	79	400	Good	Excellent	Excellent heat, fuel and oil resistance
	F10-300	Polyester	230-250	5 minutes @ 340 °F	94	250	Excellent	Good	Very flexible, launderable
	F10-305	Polyester	230-250	6 minutes @ 340 °F	94	250	Excellent	Good	Very flexible, launderable
	F10-316	Polyester	200-250	<1 minute @ 350 °F	100	150	Excellent	Good	Very flexible, launderable, improved processing, faster cure rate than F10-300
Flame Retardant Thermoplastic Films	F10-337L	Polyester	194	Does not cure	124	200	Good	Good	Low activation temperature, passes UL 94 V0 standard, halogen and antimony-free
	FPA110-1FR	Polyamide	220-235	Does not cure	95	200	Good	Good	Heat resistance to 200 °F, excellent flame retardant properties
Flame Retardant Pressure Sensitive Films	F14-552	Acrylic	Room temperature	Does not cure	97	-20 to 250	Good	Good	Good peel and shear strength, good heat resistance
	F14-554	Acrylic	Room temperature	Does not cure	94	-20 to 180	Good	Good	Excellent peel and shear properties, very low smoke generation, halogen-free
	F14-588	Acrylic	Room temperature	Does not cure	94	-20 to 180	Good	Good	Very high peel, shear & tack, low OSU heat release and smoke generation
Flame Retardant Thermoset Films	F10-651B	Phenoxy Urethane	250-275	10 minutes @ 320 °F, 100 psi	132	400	Excellent	Excellent	Cured film exhibits excellent solvent & heat resistance
	F15-789	Phenoxy Urethane	250-275	10 minutes @ 320 °F, 100 psi	130*	400	Excellent	Excellent	Excellent durability, low OSU heat release, coated on fiberglass

* Does not account for fiberglass weight.



James

Bostik
adhesives and sealants

HOT MELT POLYAMIDE ADHESIVES

Automotive Interiors | Cabinet Assembly | Filter Assembly
General Product Assembly | Textile Laminations | Wood Bonding

POLYAMIDE



Hot Melt Polyamide Adhesives

Bostik's hot melt polyamide adhesives are **100% non-volatile thermoplastic adhesives**. Supplied in pellet form and solid at room temperature, these adhesives melt when heat is applied and quickly set to **provide a bond with high heat resistance and good chemical resistance**.

What are Hot Melt Polyamide Adhesives?

Bostik's hot melt polyamides are one type of our high-performance, thermoplastic resins. These adhesives offer characteristic properties necessary in demanding performance environments: chemical and grease resistance, resistance to plasticizer migration and high temperature performance.

Bostik supplies dimer acid based, hot melt polyamide adhesives from a melt tank in pellet form for applications in the filter, automotive and assembly markets.

For some applications, a bulk hot melt might not be the right adhesive choice. Bostik offers nylon (polyamide) web adhesives with slight differences in chemistry that have similar features and benefits to the hot melt polyamide products. Refer to the Web Adhesives section for more information.





Choosing the Right Hot Melt Polyamide Adhesive

Understand the required temperature performance

The temperature requirements of an application are a primary concern when choosing a polyamide.

- Bostik's hot melt polyamide adhesives offer high temperature performance (>302°F).
- Some applications require the ability to maintain a bond at low temperatures.
- Adhesive performance should be verified at both extremes.

Consider process requirements

Bostik's hot melt polyamide adhesives have a range of open times (20-60 sec). Process parameters can guide selection of the right product.

Determine the environmental conditions

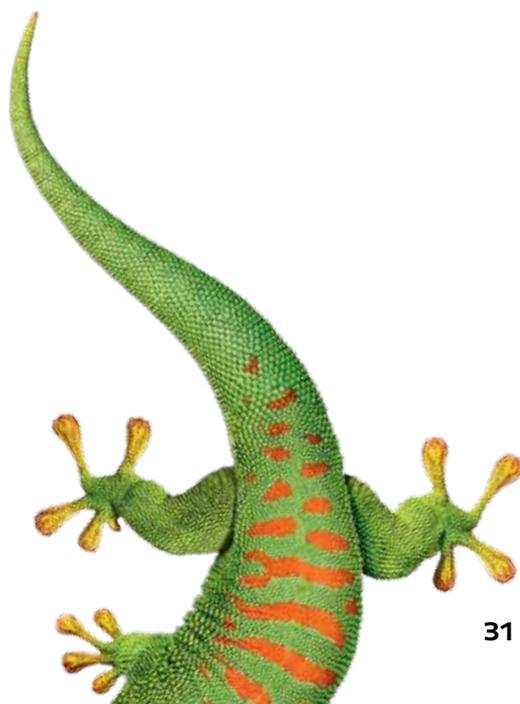
Along with temperature, environmental elements should also be considered. Polyamides are well known for addressing challenging environmental conditions presented by:

- Chemical and grease resistance
- Presence of plasticizer in substrates or exposure to plasticizing agents

Consider substrate compatibility

The chemical nature of Bostik's polyamides offers good specific adhesion compared to other hot melt adhesives. Bostik's polyamide adhesives are well-suited for a variety of substrates:

- Wood
- Leather
- Fabric
- Paper
- Many plastics
- Heated metal



Benefits of Hot Melt Polyamide Adhesives

Bostik's hot melt polyamide adhesives offer a range of benefits:

Excellent plasticizer resistance

Good adhesion to a variety of substrates (e.g., leather, paper, non-woven, many plastics)

Low application viscosity

Good to excellent performance at elevated temperatures

Good chemical and grease resistance compared to other adhesives chemistries

Featured Hot Melt Polyamide Adhesives

HM 4229

Hot Melt Dimer Acid Polyamide Adhesive

Key Features

- Excellent plasticizer resistance
- Long open time
- Good temperature resistance

Bostik's HM 4229 is thermoplastic, dimer acid polyamide supplied in a pellet form. This product has been developed to bond to a variety of substrates including wood, metal and many plastics including plasticized PVC. HM 4229 offers the combined benefit of low application viscosity for ease of application and a good balance of high and low temperature properties.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Light Amber Pellets
Density	1.01 g/cc
Softening Point (Ball & Ring)	144°C
Thermosel Viscosity	4,000 cP @ 200°C
Tensile at Break	790 psi (5,400 kN/m ²)
Elongation at Break	350%
Shore D Hardness	30
Relative Open Time @ 218°C	50-60 seconds

HM 4278

Hot Melt Dimer Acid Polyamide Adhesive

Key Features

- High temperature resistance
- Fast set
- Good chemical and grease resistance

Bostik's HM 4278 is a high-performance, dimer acid polyamide adhesive designed for filter applications. This specialty adhesive offers the combined benefit of a low viscosity for applications requiring high outputs and a good balance of high and low temperature properties.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Amber Pellets
Density	1.0 g/cc
Softening Point (Ball & Ring)	363°F (184°C)
Thermosel Viscosity	5,000 cP @ 204°C
Tensile at Break	1,655 psi (11,410 kN/m ²)
Elongation at Break	240%
Shore D Hardness	43
Relative Open Time @ 218°C	20-30 seconds

HM 4289

Hot Melt Dimer Acid Polyamide Adhesive

Key Features

- High temperature resistance
- Moderate open time
- Excellent plasticizer migration resistance

Bostik's HM 4289 is a specially developed thermoplastic, dimer acid, polyamide adhesive in pellet form. This product has been developed to bond to a variety of substrates including wood, engineered papers, non-wovens for the filter market and other materials used in automotive applications. HM 4289 offers the benefits of low viscosity for applications requiring high outputs and a good balance high and low temperature properties.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Amber Pellets
Density	1.0 g/cc
Softening Point (Ball & Ring)	170°C
Thermosel Viscosity	5,250 cP @ 200°C
Tensile at Break	1,740 psi (12,000 kN/m ²)
Elongation at Break	290%
Shore D Hardness	48
Relative Open Time @ 218°C	20-30 seconds

Selecting the Right Hot Melt Polyamide Adhesive

Low Temperature Performance
 < 150°C

High Temperature Performance
 > 150°C

Processing Speed (Set Time)

Long 50-60 seconds	Moderate 20-30 seconds
-----------------------	---------------------------

Processing Speed (Set Time)

Moderate 20-30 seconds	Short 15-25 seconds
---------------------------	------------------------

HM 4229*

HM 4231*

Flexibility

Moderate	Good
----------	------

HM 4278+

HM 4289*

HM 4279LV+



* Good resistance to plasticizer migration
 + Good chemical and/or grease resistance

Hot Melt Polyamide Adhesive Products

Product	Appearance	Softening Point (°C)	Tensile (psi), 25°C	Elongation (%), 25°C	Open Time (s) [†]	Viscosity (cP) [‡]	Shore D Hardness	Application Temperature (°C)	Product Features
HM 4229	Light amber pellet	144	790	350	50-60	4000	30	180-204	Good temperature resistance, excellent plasticizer resistance, long open time
HM 4231	Light amber pellet	144	875	550	20-30	3750	30	191-218	Good balance of strength and elongation, excellent plasticizer resistance
HM 4276	Amber pellet	180	1850	235	20-30	5250	39	210-232	High temperature resistance, good chemical resistance, good flexibility
HM 4277	Amber pellet	185	1865	270	20-30	5000	46	200-225	High temperature resistance, good chemical resistance, moderate flexibility
HM 4278	Amber pellet	184	1655	240	15-25	5000	43	200-225	High temperature resistance, fast set, good chemical and grease resistance
HM 4279LV	Amber pellet	173	2590	245	20-30	4750	49	191-218	High temperature resistance, high tensile strength, good chemical resistance
HM 4289	Amber pellet	170	1740	290	20-30	5250	48	196-207	High temperature resistance, excellent plasticizer resistance

[†] 425°F, 1/8 - 3/16" bead

[‡] RVT: spindle 27, 20 rpm, ~200°C



POLYESTER ADHESIVES

**Electrical Components | Filter Assembly | Food and Medical Packaging | General Industrial Assembly | Heat Seal Coatings
Ink Binders | Label Adhesives | Laminating Adhesives
Optically Clear Coatings | Primers | Textile Laminations**

POLYESTER



Polyester Adhesives

Bostik offers a **versatile line of high performance adhesives** based on **polyester polymers**. These polymers enable adhesives to be developed that **offer specific physical properties** and performance characteristics.

What are Polyester Adhesives?

Bostik's polyester adhesives are 100% non-volatile, thermoplastic adhesives that are solid at room temperature, liquefy upon heating and re-solidify with cooling. They form nearly instantaneous bonds, can improve product appearance and save on product weight. Since Bostik designs and manufactures our own polyester polymers, we are able to supply polyester hot melt adhesives and resins in a variety of forms for every type of application process.

Bostik offers two categories of polyester adhesives in our product line: conventional hot melt adhesives and Vitel® resins. The conventional hot melt adhesives are similar to other hot melt adhesives that are designed to be used in the form in which they are sold. The same design applies to Vitel resins. However, Vitel resins also are designed to be easily processed further and blended to a more customized adhesive or coating material.

Conventional Hot Melt adhesives

- Adhesive grade polyesters for assembly applications
- Available in pellets and granules
- Can be applied via slot-die, bead application, spray coating or extrusion
- Broad range of heat resistance temperatures from 225° to 350°F

Vitel Resins

- Amorphous, semi-crystalline adhesives and compounding resins
- Available in pellets, granules and thin slabs
- Extrusion grades and soluble grades available
- Broad range of chemical resistance and hydroxyl functionality available





Choosing the Right Polyester Adhesive

Consider the application equipment or process

Determining the type of equipment or process that will be used to apply the adhesive to the substrate is a critical step in identifying the best polyester adhesive for any application.

Conventional hot melt reservoir application

If using the product as an adhesive in conventional hot melt application equipment, then factors to consider are those common to hot melt applications:

- Substrate affinity
- Application and use temperature requirements
- Other relevant physical properties for the application

Bostik offers adhesives with varying levels of temperature resistances and flexibility to meet application requirements.

Extruded application

If the product is going to be extruded, then the Vitel 1000 series extrusion resins should be considered. The Vitel 1000 series are:

- High molecular weight extrusion resins
- Offered in amorphous, semi-crystalline grades
- Have high cohesive strength and tensile modulus
- Exceptional at bonding to PET and PVC

The desired adhesion and activation temperature will determine the best combination of resins to use.

Coating application

When using the polyesters to create a coating, the Vitel 2000 series coating resins are best suited. Characteristics of the Vitel 2000 series include:

- Solution-applied, high molecular weight amorphous thermoplastic resins
- High tensile strength and low elongation
- High abrasion resistance
- Clarity and great UV stability

The desired application temperature and chemical resistance properties help determine which resin to select.

Laminating application

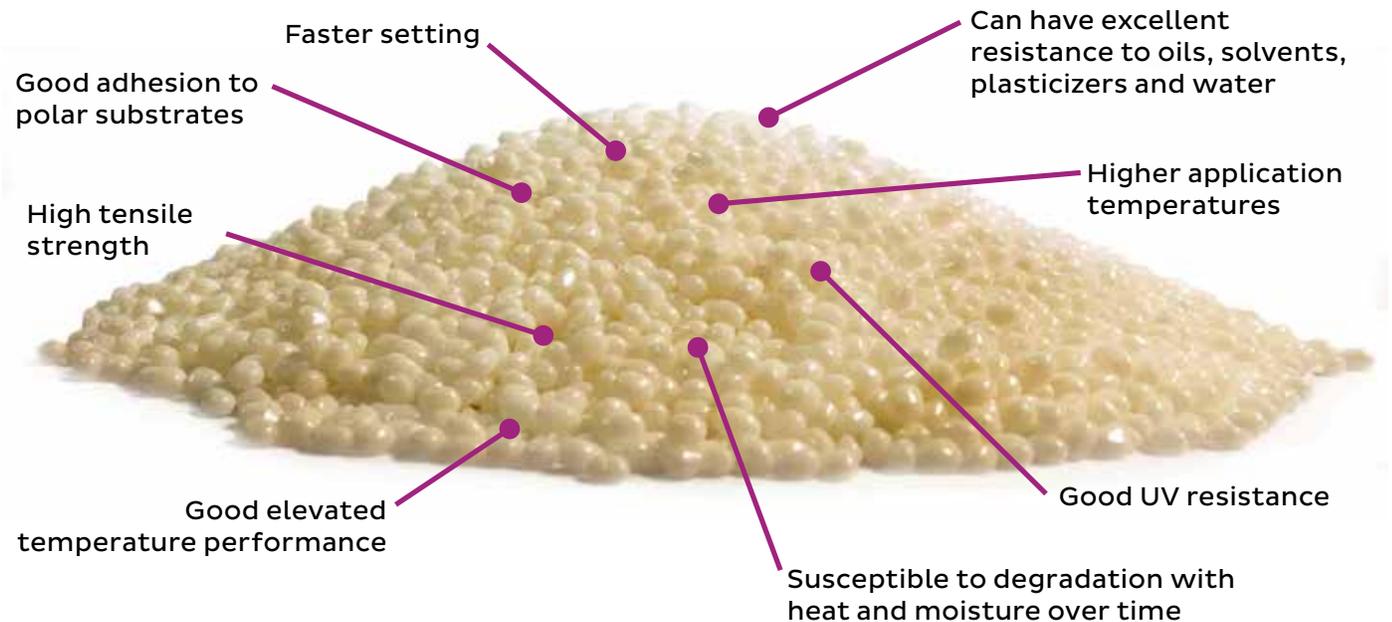
If the application requires a solvated adhesive for a lamination application, the Vitel 3000 and 7000 series laminating resins would be the products to consider. Characteristics of the Vitel 3000 and 7000 series include:

- Solution-applied, high molecular, weight resins amorphous and semi-crystalline resins
- Good UV stability
- Excellent flexibility
- Excellent tensile strength and elongation

They have glass transition temperatures below room temperature and can have excellent chemical resistance and cross-linking ability.

Benefits of Conventional Polyester Hot Melt Adhesives

Bostik's conventional polyester hot melt adhesives offer a range of benefits:



Featured Conventional Polyester Hot Melt Adhesives

HM 4199MV

Polyester Hot Melt Adhesive

Key Features

- High temperature resistance
- Low application viscosity
- Fast set time

HM 4199MV is a high-performance, polyester hot melt adhesive designed to bond a variety of fabrics, urethane foam and vinyl. Bostik's HM 4199MV exhibits excellent high temperature resistance, superior resistance to plasticizer migration and resistance to water.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Off-White Pellets
Tensile Strength at 25°C	699 psi
Elongation at 25°C	50%
Softening Point (Ball & Ring), ASTM E28	177°C
DSC Melt Point	170°C
Melt Viscosity (Brookfield thermosel, spindle #27)	265-350°F (130-177°C)
Density	1.28 g/cm ³
Heat Resistance (1kg/in ² load, oven temp. increased 5°C/30 min.)	170°C

HM 4118NSN

Polyester Hot Melt Adhesive

Key Features

- Excellent wash resistance and very good dry clean resistance
- Medium open time
- Tin-free formula

HM 4118NSN is a high-performance, hot melt polyester adhesive. A versatile product with outstanding high and low temperature resistance, this adhesive is used in a wide variety of applications, bonding substrates such as paper products, leather, woven and non-woven fabrics.

HM 4118NSN has excellent resistance to both laundering and dry cleaning. This adhesive is produced without the use of tin as a catalyst to comply with metal restrictions in various markets.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Off-white
Softening Point (Ball & Ring)	284°F (140°C)
DSC Melt Point	261°F (127°C)
Melt Viscosity	170,000 cP @ 419°F (215°C)
Melt Flow Index (175°C/2.16 kg)	17 g/10 min
Density	1.24 g/cm ³
Tensile Strength	5,360 psi (37,000 kN/m ²)
Elongation at Break	520%
Relative Open Time (392°F/200°C)	Medium
SAFT (1000 g/in ² 5°C/min)	275°F (135°C)

HM 4157D

Polyester Hot Melt Adhesive

Key Features

- Good wash resistance
- Low application temperature
- Moderate heat resistance

Bostik's HM 4157D is a high-performance, polyester hot melt adhesive. Supplied in pellet form, HM 4157D was designed to bond a variety of fabrics. This resin offers an adhesive option with a lower application temperature, which makes it well-suited for applications where lower temperature is preferred. Potential applications for HM 4157D include textiles and apparel as well as general assembly.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	White Pellets
Softening Point (Ball & Ring)	117°C
Melt Viscosity	60,000 cP @ 215°C
Melt Flow Index (160°C, 2160 grams, dried)	32.5 g/10 min
Density	1.25 g/cm ³

Selecting the Right Conventional Polyester Hot Melt Adhesive

Melt Tank Processing

Extrusion Processing

Heat Resistance

Moderate
< 250°F

Good
< 285°F

Excellent
< 350°F

Heat Resistance

Moderate
< 250°F

Good
< 285°F

Application Temperature

Low
300°F

Moderate
375°F

HM 7116

Flexibility

Low

Good

HM 4105

HM 4118NSN

HM 4157D

HM 4199LV

HM 4183

HM 4156LV



Conventional Polyester Hot Melt Adhesive Products

Product	Form	Morphology	B&R Softening Point (°C)	Thermoset Viscosity (cP)	Tensile (psi)	Elongation (%)	SAFT (°C)	Application Temperature (°C)	Product Features
HM 1335141	Pellets	C	133	17,000 @ 215°C	-	-	120 (500 g/in ² , 5°C/30 min)	191-218	Lower viscosity
HM 4103	Pellets	C	125	42,400 @ 225°C	2290	490	110 (1 kg/in ² , 5°C/30 min)	232-246	Extended open time
HM 4105	Pellets	C	120	200,000 @ 215°C	-	-	-	171-218	Fast crystallizing, high viscosity and lower melt temperature
HM 4117	Pellets	C	140	150,000 @ 215°C	3,070	380	125 (1 kg/in ² , 5°C/min)	171-216	Excellent extrudability, broad melting point
HM 4118	Pellets	C	140	170,000 @ 215°C	5360	520	135 (1 kg/in ² , 5°C/min)	171-216	Higher viscosity than HM 4117, excellent extrudability
HM 4118NSN	Pellets	C	140	170,000 @ 215°C	5360	520	135 (1 kg/in ² , 5°C/min)	171-216	Tin-free version of HM 4118, excellent extrudability
HM 4156LV	Pellets	C	157	18,000 @ 215°C	2700	400	137 (500 g/in ² , 5°C/30 min)	204-246	Lower viscosity, excellent heat resistance, moderate set time
HM 4157D	Pellets	C	117	60,000 @ 215°C	-	-	-	149-204	Low application temperature
HM 4183	Pellets	C	115	35,000 @ 215°C	-	-	105 (1 kg/in ² , 5°C/min)	191-218	Low application temperature, long open time
HM 4186	Pellets	C	-	140,000 @ 180°C	-	-	95 (500 g/in ² , 5°C/30 min)	150-200	Low application temperature
HM 4199LV	Pellets	C	177	16,000 @ 215°C	699	50	170 (1 kg/in ² , 5°C/30 min)	204-232	Excellent heat resistance, very low viscosity, fast set time
HM 4199MV	Pellets	C	177	19,000 @ 215°C	699	50	170 (1 kg/in ² , 5°C/30 min)	204-232	Excellent heat resistance, low viscosity, fast set time
HM 7116	Granules	C	137	28,000 @ 215°C	3,940	500	125 (1 kg/in ² , 5°C/min)	204-232	Steam activatable, low application viscosity, moderate open time

Benefits of Vitel® Polyester Hot Melt Adhesives

Bostik's Vitel polyester hot melt adhesives offer a range of benefits:



Featured Vitel Polyester Hot Melt Adhesives

Vitel 3350B Vitel Copolyester Laminating Resin

Key Features

- Low glass transition temperature
- Good compatibility with other Vitel resins
- Good flow characteristics

Bostik's Vitel 3350B is an amorphous, linear, saturated polyester with solubility in certain common solvents (e.g., Ethyl acetate, MEK, Toluene). Vitel 3350B is a low Tg polymer that is designed to be used as part of a solvent-based, laminating adhesive. The low glass transition temperature yields highly flexible films. The Tg can be modified to meet application requirements by blending this product with other Vitel resins and can be used as a modifier in other Vitel formulations to impart flexibility and improve adhesion.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Amber Slabs
Odor / Taste	None / None
Intrinsic Viscosity	0.80 dL/g
CIELab Color	L* : 95 (min.) b* : 10 (max.)
Specific Gravity	1.22
Softening Point	257°F (125°C)
Molecular Weight (Mw)	70,000
Acid Number	0-2
Hydroxyl Number	3-6
Glass Transition, Tg (ASTM E 28-67)	61°F (16°C)

Vitel 1801

Vitel Copolyester Extrusion Resin

Key Features

- Excellent chemical resistance
- Low activation temperature
- Adheres to a wide range of cup stocks including PP, PET, PLA and PVC

Vitel 1801 is a semi-crystalline, high molecular weight, linear, saturated copolyester resin developed for lidding in food contact applications. It is also suitable for other specialty packaging applications and flexible laminates. Vitel 1801 has excellent chemical resistance, performs well at low temperatures, adheres well to low energy substrates and is UV resistant. The properties of Vitel 1801 make it well-suited for lidding applications, but the resin can be formulated with other Vitel copolyester resins to achieve the desired performance requirements for a variety of others as well.

Vitel 2200B

Vitel Copolyester Coating Resin

Key Features

- Excellent clarity, hardness, and abrasion resistance
- Good adhesion to a variety of substrates

Vitel 2200B is a hard, resinous, amorphous polymer exhibiting high tensile and low elongation. This premium quality resin finds specialized use either alone or modified in applications where high cohesive strength is of prime importance. It demonstrates superior adhesion, clarity, hardness and abrasion resistance. Vitel 2200B also exhibits good dielectric properties and good retention of physical properties after UV light exposure. Major applications for Vitel 2200B include being used as a primer, a binder for pigments in inks and as a lacquer for hard top coatings.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Off-White Granules
CIELab Color	L* : 90 (min.) b* : 10 (max.)
Glass Transition (Tg)	-20°C
Softening Point	112°C
Intrinsic Viscosity	0.98 (dL/g)
Acid Number	0-2
Hydroxyl Number	1-3
Tensile Strength	1,060 psi
Elongation	1,600%
Specific Gravity	1.22
Molecular Weight (Mw)	96,000



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Clear to Golden Granules
Odor / Taste	None / None
Intrinsic Viscosity	0.59 dL/g
CIELab Color	L* : 95 (min.) b* : 10 (max.)
Solubility (25% in MEK)	100%
Specific Gravity	1.27

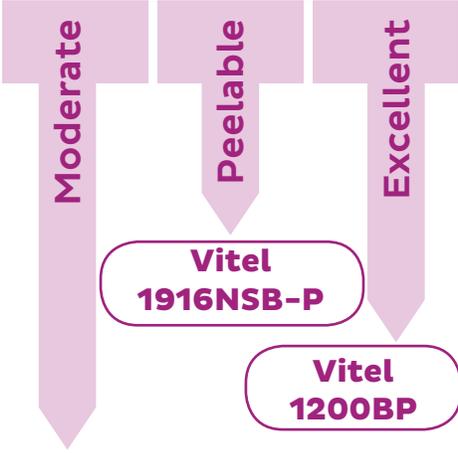
Selecting the Right Polyester Vitel Resin

Extrudable Film

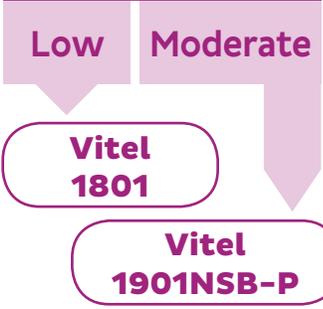
Protective Coating

Laminating

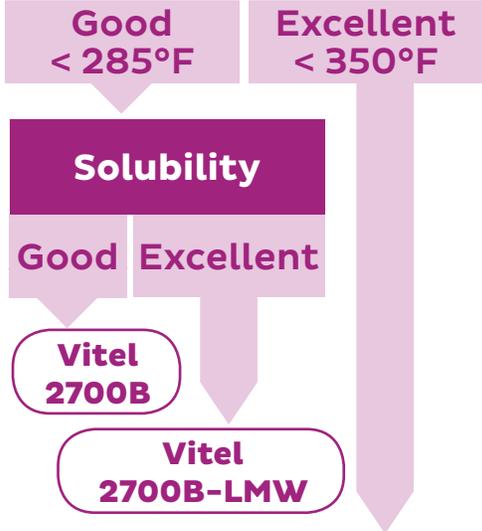
Seal Strength



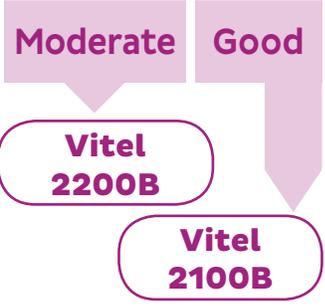
Activation Temperature



Heat Resistance



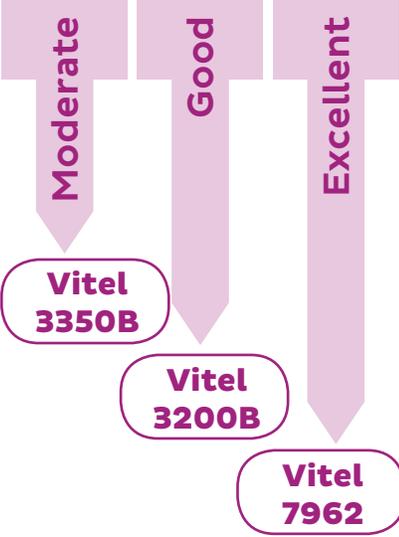
Chemical Resistance



Activation Temperature



Chemical Resistance



POLYESTER



Vitel Resin Products

Product		Form	Morphology	B&R Softening Point (°C)	DSC Tg (°C)	Intrinsic Viscosity (dl/g)	Tensile (psi)	Elongation (%)	Recommended Activation Temperature (°C)	Product Features
Extrusion Resins	Vitel 1200BP	Pellets	A	150	70	0.59	11,000	8	210	Very strong adhesive and cohesive strength, adhesion to a wide range of substrates
	Vitel 1801	Granules	SC	-	-25	1	-	-	110	Very low activation temperature and adhesion at low temperatures, excellent modifier to target adhesion levels
	Vitel 1901NSB-P	Pellets	SC	143	-4	0.92	800	60	143	Excellent modifier to target adhesion levels
	Vitel 1916NSB-P	Pellets	SC	145	0	0.84	-	-	160	Excellent peelable sealing properties
Coating Resins	Vitel 2100B	Pellets	A	150	66	0.59	-	-	150	Good chemical resistance, excellent temperature resistance
	Vitel 2200B	Pellets	A	156	69	0.59	9,600	7	156	Excellent temperature resistance, good solubility in a variety of solvents
	Vitel 2700B	Pellets	A	142	47	0.74	6,500	3	142	Lower activation temperature, good solubility in a variety of solvents
	Vitel 2700B-LMW	Pellets	A	115	50	0.58	-	-	120	Very low activation temperature, excellent solubility in a variety of solvents, higher hydroxyl functionality than Vitel 2700B
Laminating Resins	Vitel 3200B	Slab	A	129	15	0.78	400	800	129	Higher chemical resistance than Vitel 3300B and Vitel 3350B, good flexibility and adhesion
	Vitel 3300B	Slab	A	125	16	0.8	500	800	125	Good flexibility and adhesion
	Vitel 3350B	Slab	A	125	16	0.8	-	-	125	Improved color versus V3300B, good flexibility and adhesion
	Vitel 3550B-1	Slab	A	99	-11	0.85	30	2000	99	Highly flexible, good adhesion at low temperatures, very low melting temperature
	Vitel 7400NSN	Granules	SC	100	7	0.75	-	-	125	Soft and flexible, easily reacted with isocyanate curatives, tin-free
	Vitel 7915	Granules	SC	100	-15	0.72	370	>1000	100	Excellent all-purpose product, very low melting temperature and good adhesion at low temperatures, good solubility in a variety of solvents
	Vitel 7962	Granules	SC	100	-5	0.77	2,500	700	120	Excellent chemical resistance, high durability, improved color versus Vitel 7400NSN
Modifying Resin	Vitel 5833B	Powder	A	99	48	0.17	-	-	99	Excellent reactivity with isocyanate curatives, excellent solubility, improves substrate wetting and coating at higher solids content



POLYOLEFIN ADHESIVES

General Assembly | Foam-in-Place Gasket | Auto Assembly
Weather Seal | Building Components
Furniture Assembly | Automotive Assembly

POLYOLEFIN

Polyolefin Adhesives

Bostik's polyolefin adhesive line offers a wide range of products that can be used in many different markets. These products offer **excellent creep resistance and machinability**. Generally non-tacky, these thermoplastic adhesives melt when heat is applied and quickly set to form **versatile bonds in a variety of applications**.

What are Polyolefin Adhesives?

Bostik's polyolefin adhesives are 100% solid, thermoplastic adhesives that are solid at room temperature, liquefy upon heating and re-solidify upon cooling. They are composed of polymers that can either enable flexibility or cause rigidity depending on the formulation while retaining the ability to re-melt. Additionally these adhesives have a long shelf life and can form nearly instantaneous bonds due to their fast set up and excellent hot tack.

Designed to work in a variety of markets, such as filter assembly, mattress assembly, case and carton sealing and furniture assembly, these products are typically a lower cost replacement for other adhesive technologies. Comprised of polyethylene, polypropylene and other monomers, they also often contain, copolymers, wax and oil. Due to polyolefins composition, they are low odor, and contain low VOCs, are non-toxic and are often recyclable.





Choosing the Right Polyolefin Adhesive

Determine the end use requirements

Hot melt polyolefins are used for a variety of applications whether you need:

- A foamable adhesive for seam sealing
- High heat resistance for demanding environments
- Optimized viscosity for fast line speeds
- UV resistant adhesive for weather seal application

Understand the required heat resistance

- Thermoplastic adhesives cannot be subjected to applications where elevated temperatures might reactivate the adhesive. Typical softening points of hot melt polyolefins range from 200°-300°F
- Shear adhesive failure temperature (SAFT) gives an indication of the adhesives ability to hold a bond at elevated temperature. Typical SAFT of hot melt polyolefins range from 100°-200°F.

Select an appropriate viscosity

- Viscosity can affect application temperature of the adhesive and degree of wet-out on a substrate.
- Viscosity will affect what application methods are appropriate; be it extrusion, spray, roll coat or other methods

Consider the adhesive form

- For high throughput applications with accessibility to a hot drum unloader, use drums ranging in fill level from 350-475 lbs.
- For smaller scale applications with a small melt tank, use the convenient, hand-feed, package-less package form, fill and seal as well as pillow co-extrusion forms.



Benefits of Polyolefin Adhesives

Bostik's polyolefin adhesives offer a range of benefits:



Featured Polyolefin Adhesives

Thermogrip 9438

Hot Melt Adhesive

Key Features

- Excellent hot tack
- High heat resistance and long pot life
- Strong adhesion to a variety of substrates

Thermogrip 9438 adhesive offers very high heat resistance and strong bonds to a variety of substrates. It has a long working time and a long pot life making it a choice for a variety of automotive and product assembly applications.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity (Brookfield - ASTM D3236)	30,200 cP @ 375°F 21,100 cP @ 400°F
Softening Point (Herzog ASTM E28)	305°F
Suggested Running Temperature	356-392°F
Density	0.9 g/cc @ 77°F

Thermogrip 9389

Hot Melt Adhesive

Key Features

- Excellent heat resistance
- Very good hot tack
- Long open time

Thermogrip 9389 is a hot melt adhesive for assembly applications, including pleat separation for air filters. It has a long open time, very good hot tack, and high melting point. Excellent adhesion to a variety of substrates including many plastics, metal and paper.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosol Viscosity (Brookfield - ASTM D3236)	35,000 cP @ 350°F 25,000 cP @ 375°F 17,500 cP @ 400°F
Softening Point (Ring and Ball Herzog - ASTM E28)	315°F
Suggested Running Temperature	350 - 400°F
Density	0.92 g/cc @ 77°F

Thermogrip 9446

Hot Melt Adhesive

Key Features

- Extreme heat resistance
- Short open time
- High shear

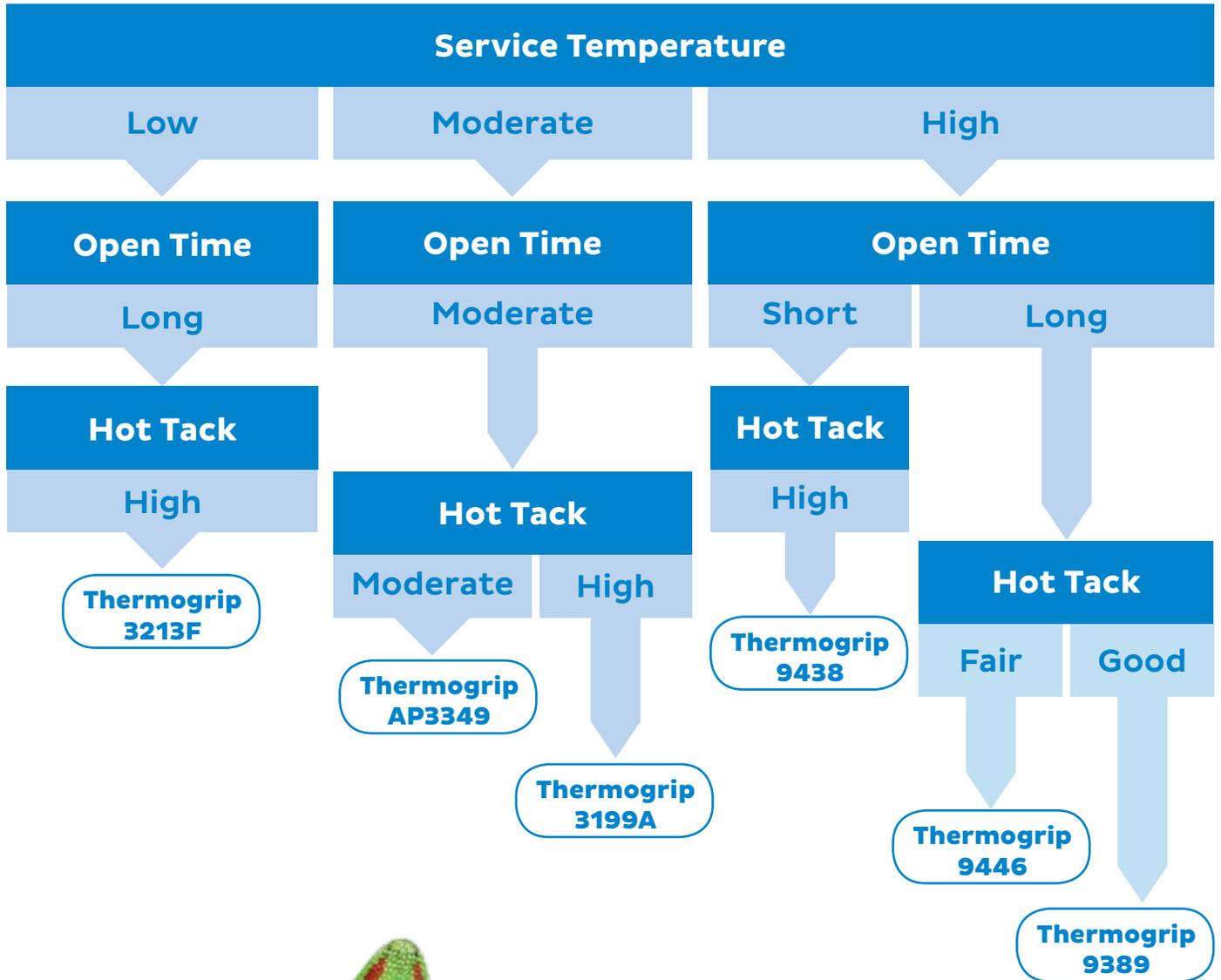
Thermogrip 9446 is a hot melt adhesive with excellent heat resistance and high shear automotive headliner hot melt. It has a short open time for quick bonds in a variety of automotive and product assembly applications.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosol Viscosity (Brookfield - ASTM D3236)	23,600 cP @ 325°F 15,000 cP @ 350°F 10,300 cP @ 375°F 7,200 cP @ 400°F
Softening Point (Herzog ASTM E28)	301°F
Suggested Running Temperature	350 - 400°F
Density	0.9 g/cc @ 77°F

Selecting the Right Polyolefin Adhesive



Polyolefin Adhesives

Product	Suggested Running Temp (°F)	Viscosity (cP _g)	Softening Point (°F)	SAFT (°F)	Density (lb/gal) @ 77°F	Open Time	Set Speed	Product Features
Thermogrip AP3349B-01	300 - 375	14,425@275°F 8,250@300°F 5,050@325°F	277	n/a	0.92	Long	Medium	Foam-in-place gasket for doorlite back bedding and perimeter seal, medium to high residual tack
Thermogrip 3092-01	375	8,350@350°F 5,778@375°F	312	192	0.90	Long	Slow	Product assembly, good adhesion - aluminum to EPDM substrates
Thermogrip 3199A	350	4,800@325°F 3,100@350°F 2,150@375°F	298	178	0.88	Long	Slow	Non-structural product assembly, long open time, slow set speed, mattress
Thermogrip 3213	300-350	2,020@300°F 1,360@325°F 840@350°F	213	101	0.88	Long	Slow	Non-structural product assembly, long open time, slow set speed, H3213F (fluorescing version) available
Thermogrip 3218HA	375-400	16,000@350°F 11,000@375°F 7,000@400°F	303	174	1.10	Short	Fast	Automotive and product assembly, short open time, high heat resistance, excellent physical properties (tensile/elongation), white
Thermogrip 3225	350-375	3,600@350°F 2,450@375°F 1,725@400°F	300	157	0.90	Long	Slow	Automotive trim and non-structural assembly, good adhesion to PE, PP, ABS
Thermogrip 9036K02	375-400	12,300@350°F 8,280@375°F 6,100@400°F	315	-	0.91	-	-	Weather seal, formable hot melt, black
Thermogrip 9389	350-400	35,000@350°F 25,000@375°F 17,500@400°F	315	182	0.92	Long	Slow	General purpose product assembly adhesive for applications requiring long open time, good hot tack and high melt point, filter pleat separator
Thermogrip 9431	350-375	17,000@325°F 10,600@350°F 7,000@375°F	250	182	0.90	Long	Slow	Product assembly and automotive adhesive with good adhesion to PP, PE, ABS, and polyester, no tack at room temperature, potential polyamide replacement
Thermogrip 9438	356-392	30,200@375°F 21,100@400°F	305	193	0.90	Long	Fast	Automotive headliner and product assembly, high heat resistance and high viscosity, potential polyamide replacement
Thermogrip 9446	350-400	15,000@350°F 10,300@375°F 7,200@400°F	301	244	0.90	Short	-	Automotive headliner and product assembly, high heat resistance; potential polyamide replacement
Thermogrip 9487	325-350	7,090@300°F 3,780@325°F 2,530@350°F	198	160	0.88	Long	Medium	Office panel construction, sprayable, long open time

POLYURETHANE ADHESIVES

Automotive Interior and Component Assembly | General Assembly
Filter Assembly | Flooring | Rigid Panel Bonding Textile
Bonding | Window and Door Assembly | Wood Bonding



Hot Melt Polyurethane Adhesives

Bostik's hot melt polyurethane adhesives are **solvent-free, moisture-curing adhesives**. The properties of the Supergrip® product line make these adhesives **a versatile option for demanding applications** in the transportation and assembly markets as well as several others.

What are Hot Melt Polyurethane Adhesives?

Polyurethane adhesives can be one or two-component systems. Bostik's Supergrip hot melt polyurethane adhesives are one-component adhesives, which do not require a secondary curative. While solid at room temperature, these adhesives liquefy when heated for application via bead, spray or

roll coat methods. Hot melt polyurethane adhesives react with atmospheric moisture to form thermoset materials, which yield characteristically strong and temperature-resistant bonds. Bostik's Supergrip products offer a variety of properties to meet the unique requirements of individual applications.





Choosing the Right Hot Melt Polyurethane Adhesive

Determine the preferred application method

Bostik's Supergrip adhesives span a range of viscosities providing flexibility in the choice of processing method.

- Low viscosity products can be swirl sprayed.
- High viscosity products allow for bead application.
- All are suitable for roll coating.
- Some products can be applied by all three methods.

Consider process requirements

While the recommended application temperature for Bostik's hot melt polyurethane adhesives is generally the same, between 110°-120°C, other process parameters can also guide the selection of the right Supergrip product:

- Manufacturing lines with high throughput might require high green strength.
- Other processes might require an extended handling window to position parts before the adhesive is set.

Hot melt polyurethanes can be designed to meet the unique requirements of each application, and Bostik's Supergrip products cover a range of processing considerations.

Align with performance requirements

Substrate adhesion is a primary concern. Some of Bostik's hot melt polyurethane products are better suited than others at adhering to low energy substrates. For example:

- Cured polyurethane adhesives typically offer good chemical, solvent and water resistance. Bostik's Supergrip product line offers varied levels of resistance to these conditions.
- Polyurethane adhesives can yield rigid bonds or bonds with more elastic properties; the Supergrip line offers products on both ends of the spectrum.



Benefits of Hot Melt Polyurethane Adhesives

Bostik's Supergrip adhesives offer a range of benefits:

Good balance of strength and elasticity

Suitable for a variety of application methods

Moisture curing

One-component adhesive for a simplified buying process



Adheres to a variety of substrates

Low application temperature (110-120°C)

Accommodates bonding of dissimilar substrates

Solvent-free, 100% solids

Featured Hot Melt Polyurethane Adhesives

Supergrip 1578-164 Moisture Curing Hot Melt Polyurethane Adhesive

Key Features

- Excellent green strength and quick tack
- Excellent creep resistance
- Long open time

Supergrip 1578-164 is an all-purpose product that offers properties well-suited for assembly applications in a variety of markets. This product provides high initial tack, rapid development of strength upon application from the molten state and excellent creep resistance prior to curing. The physical properties of this adhesive make it suitable for use in a variety of manufacturing processes. Supergrip 1578-164 also offers excellent chemical and water resistance and exhibits good adhesion to a variety of substrates, including flexible vinyl, wood, ABS, fiberboard, HPL, steel, polyurethane foam and most plastics.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Off-White
Solids	100%
Thermoset Viscosity	15,000 cP @ 120°C
Density	9.6 lbs/gal (1.15 g/cm ³)
Green Strength (3 min., ambient conditions)	60 psi (410 kN/m ²)
Open Time	5 - 9 min. for a 10 mil film at ambient conditions
Application Temperature	110°C - 120°C

Supergrip 9621

Moisture Curing Hot Melt Polyurethane Adhesive

Key Features

- Good green strength
- Low application temperature
- Quick setting

Supergrip 9621 offers a good balance of strength and elasticity for robust applications. The quick setting characteristic of this product allows for fast processing of bonded components, and the chemical and water resistance of the cured adhesive provides an enduring bond. This product also has excellent adhesion to wood, steel, and a variety of plastics.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Opaque, Off-White
Solids	100%
Thermoset Viscosity	42,500 cP @ 100°C
Density	9.6 lbs/gal (1.15 g/cm ³)
Open Time	2 min. for a 10 mil film at ambient conditions
Application Temperature	110°C - 120°C

Supergrip H0005-03A

Moisture Curing Hot Melt Polyurethane Adhesive

Key Features

- Aggressive bonds to a variety of substrates
- Good green strength and quick tack for fixture assemblies
- Good heat resistance

Supergrip H0005-03A offers a good balance of strength and elasticity for specialty applications. This adhesive is sprayable and processes cleanly. Its quick-setting characteristic allows for fast processing of bonded components, while the long open time offers an extended window to ensure proper positioning before the bond is set. A cured bond of Supergrip H0005-03A provides good water resistance and excellent chemical resistance, extending the range of applications where it can be used. This product also has excellent adhesion to wood, steel and a variety of plastics.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Opaque, Off-White
Total Solids	100%
Viscosity	7,000 cP @ 120°C
Density	9.2 lbs/gal (1.10 g/cm ³)
Open Time	4 - 7 min. for a 10 mil film at ambient conditions
Application Temperature	110°C - 120°C

Selecting the Right Hot Melt Polyurethane Adhesive

Roll Coat Application

Swirl Spray Application

Handling Window (Open Time)

Handling Window (Open Time)

Short <1 Minutes	Moderate 1-5 Minutes
---------------------	-------------------------

Long 5-10 Minutes	Extended >10 Minutes
----------------------	-------------------------

Processing Speed (Green Strength)

Processing Speed (Green Strength)

Good	Excellent	Good	Excellent
------	-----------	------	-----------

Good	Excellent
------	-----------

Supergrip 9707*

Supergrip 9621*

Supergrip 1582-166*

Supergrip 1582-196*

Bond Elasticity

Excellent	Good
-----------	------

Supergrip H0005-03A*

Supergrip 1582-082*

Supergrip 1578-164**

Supergrip 97120P*

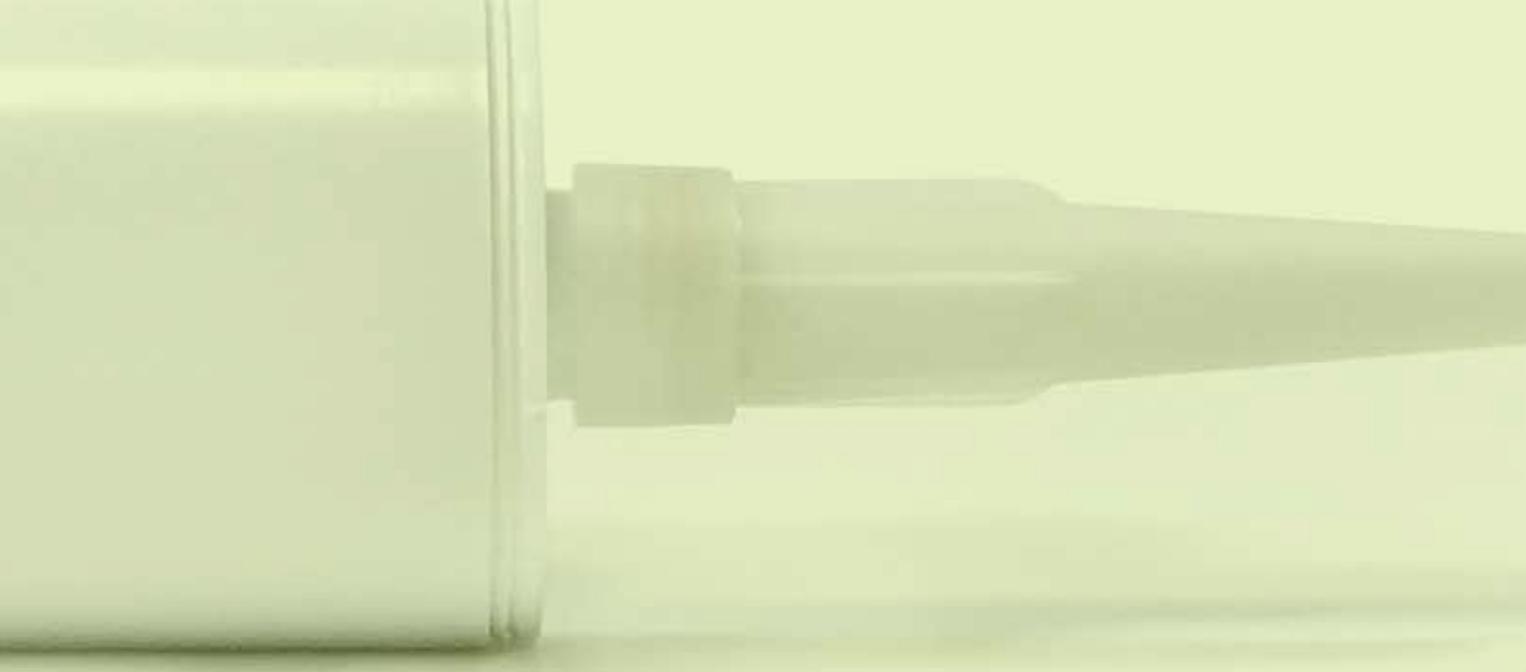


* Can also be bead applied
+ Can also be roll coated

Hot Melt Polyurethane Adhesive Products

Product	Appearance	Viscosity (cp)	Roll Coat	Bead Applied	Swirt Applied	Open Time (min) at ambient conditions, 10 mil film	Tensile at Break (psi)†	Elongation at Break (%)†	SAFT Heat Resistance on porous & non-porous substrates (°C)†	Application Temperature (°C)	Product Features
Supergrip 1578-164	Off-White Solid	15,000 @ 120°C	●	●	●	5 to 9	1050	830	193	110-120	Excellent green strength and quick tack, excellent creep resistance before cure, sprayable
Supergrip 1582-082	Off-White Solid	6,500 @ 120°C	●		●	>10	1500	860	206	110-120	Good green strength and aggressive tack, excellent chemical and water resistance, high heat resistance
Supergrip 1582-166	Off-White Solid	30,000 @ 120°C	●	●		<1	1750	1050	192	110-120	Excellent green strength and quick tack, excellent creep resistance before cure, short open time
Supergrip 1582-196	Off-White Solid	30,000 @ 120°C	●	●		1 to 3	1100	1300	173	110-120	Very good low temperature flexibility, excellent green strength and quick tack, excellent creep resistance before cure
Supergrip 1827-160	Off-White Solid	15,000 @ 120°C	●	●	●	5 to 9	1050	830	193	110-120	Excellent green strength and quick tack, excellent creep resistance before cure, optical brightener for easy visualization
Supergrip 9621	Opaque, Off-White Solid	42,500 @ 100°C	●	●		2	3200	1550	185	110-120	Quick setting, good green strength, good chemical and water resistance, low application temperature
Supergrip 9707	Opaque, Off-White Solid	32,000 @ 100°C	●	●		<1	3600	1250	195	110-120	Quick setting, high cohesive strength, low application temperature
Supergrip 97120P	Clear Solid	18,000 @ 100°C	●	●	●	10	3500	350	180	110-120	Very long open time, strong initial tack & green strength, low application temperature, optical brightener
Supergrip H0005-03A	Opaque, Off-White Solid	7,000 @ 120°C	●		●	4 to 7	1400	3700	195	110-120	Long open time, good green strength & quick tack, high bond elasticity
Supergrip PURGE	Blue Pellets	27,000 @ 120°C				N/A	N/A	N/A	N/A	110-140	Neutralizes reactive polyurethane adhesives, good solvency to break down partially cured adhesive, pigmented

† cured at 25°C for 7 days, 50% relative humidity



SILANE MODIFIED POLYMER SEALANTS

**General Assembly | HVAC Equipment | Automotive Glazing
Panel Bonding | Truck, RV and Cab Sealing | Marine
General Sealing and Bonding | Construction Window
and Door Assembly | Weatherproofing | Waterproofing**



Silane Modified Polymer Sealants

Bostik's Silane Modified Polymer (SMP) sealants are **designed** and **manufactured** to **enable specific physical properties** and **performance characteristics** that **suit a wide variety** of application needs.

What are SMP Sealants?

Bostik's SMP sealants are high-performance, one-component, moisture-curing systems that combine many of the traditional advantages of silicone and polyurethane sealants.

These sealants are designed and manufactured to enable specific physical properties and performance characteristics that suit a wide variety of application needs. Whether sealing seams, waterproofing a building or glazing windshields, Bostik's SMP helps get the job done right.

Available in a wide range of tensile strengths, shear strengths and elongations, these products are solventless, non-corrosive

and paintable. They also offer excellent UV resistance and stability while allowing unprimed adhesion to many surfaces. These include stainless steel, aluminum, polycarbonate, glass, acrylic and most Kynar® - resin coated surfaces.

For time-sensitive applications, certain SMP sealants can offer faster and more effective curing as part of an optional two-component SMP system.

These sealants are available in bulk drums as well as cartridges and sausage packages.





Choosing the Right SMP Sealant

Determine bond strength needed

Understanding an application's required bond strength is critical in selecting the right SMP sealant. Examples of sealant applications, from lowest to highest bond strength, are:

- Seamfilling
- General sealing and gap filling
- Bonding
- High-strength bonding
- Glass glazing

Consider environmental conditions

It is also important to consider what types of weather and elements the sealant will be exposed to during use. For instance, marine applications require sealants with high resistance to corrosion and mildew, and construction applications may require extreme UV resistance and stability. Bostik has developed high performance sealants to perform well in these challenging environments.

Determine package and extrusion equipment for the application

What is the best equipment to apply the sealant for the application? Consider a sausage-pack gun or cartridge if employing a few different products for different applications. If it is a

large volume application at an OEM, Bostik has most SMP sealant products available in 9.8 oz cartridges, 13.5 or 20 oz sausages, 5 gallon pails and 52 gallon drums, ensuring customers are covered no matter what their needs. Bostik has most sealant products available in 9.8 oz cartridges, 13.5 or 20 oz sausages, 5 gallon pails, and 52 gallon drums, so the customer is covered no matter their needs.

Select the best product for each application

Bostik's SMP sealants have different physical properties that make them suitable for different applications. For example, these sealants have:

- Varying thicknesses from sprayable sealants to windshield bonding adhesives
- Different skin times suited for varying temperatures



Benefits of SMP Sealants

Bostik SMP sealants offer several advantages over other types of sealants.



Featured SMP Sealants

70-08A AP

High Quality and High Strength Bonding and Glazing Adhesive

Key Features

- High green strength
- Primerless adhesion
- Passes FMVSS 212 requirements for glass glazing

Bostik's 70-08A AP is a high quality SMP sealant especially developed for bonding windshields. It provides a rapid and efficient way to fasten many different materials for OEM, coach works, mobile units, etc., especially when objects have to be moved shortly after installation during the manufacturing process. 70-08A AP also can be used with Dual SMP technology for increased and controlled cure speed, reliability in production processes and more application possibilities.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Skin forming time	15 min. (20°C/50% R.H.)
Curing speed after 24 hrs	3 mm (20°C/50% R.H.)
Shore A hardness	60 (DIN 53505)
Elongation at break	250% (DIN 53504/ISO 37)
Tensile Strength	400 psi (2.8 MPa)

70-03A

High Quality Adhesive and Sealant

Key Features

- Low residual tack
- Primerless adhesion
- Durable performance

70-03A is a high quality SMP sealant and adhesive designed for making elastic construction joints that require high strength. It can also be used for a wide variety of applications due to its ability to bond to numerous types of materials.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Skin forming time	10 min.
Curing speed after 24 hrs	0.125-in (3mm)
Tensile Strength	245 psi (2.3 MPa)
Elongation at Break	250%

STR220A

Multipurpose Sealant

Key Features

- Solvent, isocyanate and PVC free
- Very good UV-resistance and aging properties
- Neutral and odorless curing

STR220A is a good multipurpose sealant suitable for making elastic construction joints and elastic sealing. It bonds to many types of surfaces, including polycarbonate, acrylic, metals, glass and Kynar®. STR220A is also very flexible, which makes it ideal as a low-strength sealant.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Skin forming time	30 min. (70°F/20°C/50% R.H.)
Curing speed after 24 hrs	2 mm (70°F/20°C/50% R.H.)
Tensile Strength	48 psi (ASTM 412)
Elongation At Break	800% (ASTM 412)

Selecting the Right SMP Sealant

Sealing Bonding

Sprayable Plastics Glass Other Materials

Sprayable

No	Yes
----	-----

70-07A

Plastics

Glass

70-08A AP

Other Materials

Flame Retardant

No	Yes
----	-----

70-03A FR

Open Time

Moderate	Slow
----------	------

70-03A

70-03 SKF

Green Strength During Processing

Moderate	High
----------	------

STR350A

STR 360A SKF

Skin Time

Fast	Slow
------	------

70-03A

Elongation

High	Low
------	-----

70-03A SKF

Tacky After Skin

Yes	Low
-----	-----

PRO MS-50 STR 220A



SMP Sealant Products

Product	General Use	Performance	Curing Mechanism	Skin Time (min)*		Open Time (min)*	Tensile Strength at Break	Elongation % at Break	Product Features
70-08A AP	Bonding / Glazing	Excellent	Moisture Curing	15	< 15	421 psi	250%	Very high green strength, passes FMVSS 212 requirements for glazing	
STR360A SKF	Bonding	Excellent	Moisture Curing	20	30	500 psi	400%	High performance multipurpose adhesive/ sealant with long open time	
70-03A	Gap Filling	Excellent	Moisture Curing	10	< 15	275 psi	150%	General purpose with low residual tack	
940FS	Marine	Good	Moisture Curing	10	15	450 psi	225%	High performance marine adhesive/sealant with fast skin time	
70-03A SKF	Gap Filling	Good	Moisture Curing	10	< 30	375 psi	250%	General purpose with long open time	
940A	Marine	Good	Moisture Curing	35	45	450 psi	225%	High performance marine adhesive/sealant with long open time	
STR350A	Bonding	Excellent	Moisture Curing	15	20	350 psi	400%	High performance multipurpose adhesive/ sealant	
70-03AFR	Fire Retardant Sealing	Excellent	Moisture Curing	5	< 3	464 psi	160%	Fire retardant	
70-07A	Seamsealing	Excellent	Moisture Curing	30	40	220 psi	175%	Sprayable seamsealer, easily painted over	
STR220A	Gap Filling	Good	Moisture Curing	30	40	120 psi	800%	General purpose	
PRO MS 50	Construction Sealing / Weatherproofing	Excellent	Moisture Curing	30-45	< 30	180 psi	950%	Excellent UV & color stability, unprimed adhesion (including to most Kynar®-coated surfaces), and elasticity	

* Note that these times will vary with temperature and relative humidity; values given assume 20°C at 50% RH



SOLVENT-BASED ADHESIVES

**Automotive Interior Trim | Inflatable Seaming | Placard Attachment
Aerospace Interior Attachment | Footwear Assembly | Rubber Bonding**

Solvent-Based Adhesives

Bostik offers a broad range of solvent-based products to meet the performance and process requirements of the most demanding applications. **The varying levels of heat, solvent and water resistance make these adhesives useful in a number of markets**, including automotive and aerospace interiors, industrial laminations and general assembly.

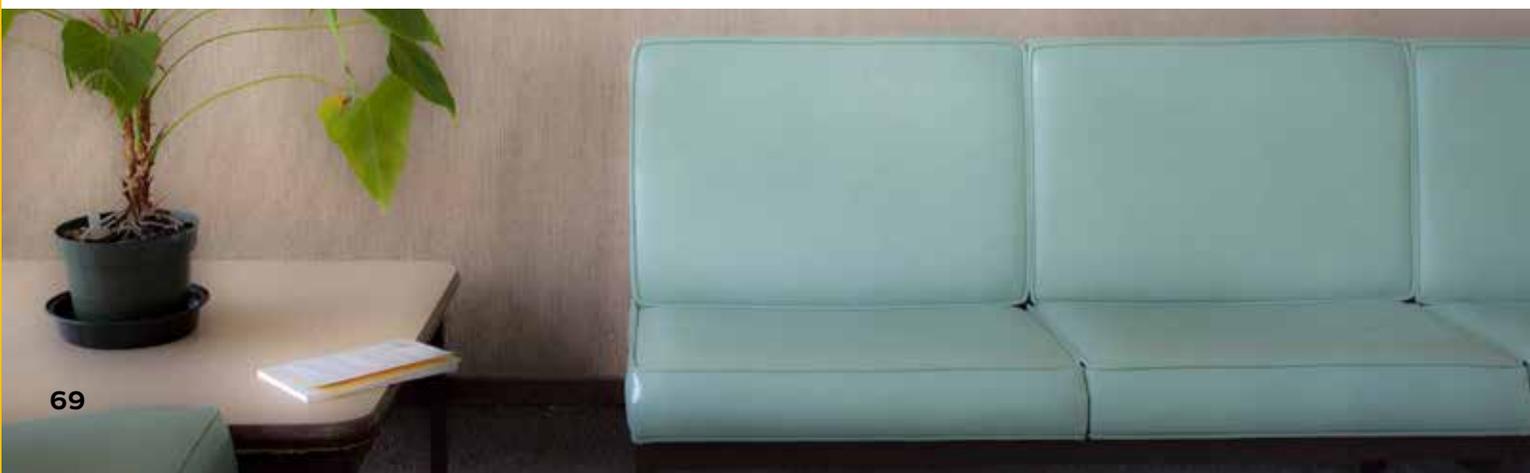
What are Solvent-Based Adhesives?

Solvent-based adhesives are high-performing formulas applied in a liquid state. Solvent is used as a carrier for both simple and formulated adhesive products and is effective in delivering some polymers (e.g. nitrile and chloroprene rubbers) that would be difficult to apply by other means. A variety of polymers are utilized to meet specific performance requirements for heat, solvent, plasticizer and water resistance.

Roll coating, brush and spray are the most common methods of application. Rubber-based formulas are well suited for pressure bonding (1-sided)

and contact bonding (two-sided), with specialty formulas effective in vacuum forming processes (one- or two-sided). As the solvent evaporates, the surfaces can be mated to form a bond with rapid development of strength. With many formulas, the adhesive can be applied for later reactivation with solvent or heat.

There are several factors to consider when selecting an adhesive product, but Bostik's solvent-based adhesive products offer the right level of performance to match the requirements of both specialty and general assembly applications.





Choosing the Right Solvent-Based Adhesive

Consider the substrates

Solvent-based formulas are well suited for bonding dissimilar substrates or where a flexible bond is of high importance. Substrate makeup, however, can impact the adhesive options for a particular application. The presence or absence of plasticizer will heavily influence the adhesive options for contact and pressure bonding application methods. Chloroprene rubber and synthetic elastomers are well suited for unplasticized materials while nitrile rubber offers resistance to plasticizers that could cause bond failure.

Determine application process requirements

Solvent-based formulas are frequently applied by roll coating, brush or spraying. Viscosity influences which of these methods are most suitable for a given formula, and the method can impact the speed of the application. Regardless of the method, solvent-based adhesives are applied to either one or both substrates before mating under pressure to create the bond. Some formulations are better suited for two-sided contact bonding, while others can be used for one-sided pressure bonding. Vacuum forming can be done by applying adhesives to one or both substrates.

Understand the application performance requirements

The variety of polymers used in solvent-based adhesives offers a range of performance. Identifying the required levels of resistance (e.g. weathering, heat, water and chemical, and plasticizer) and flexibility aids in selecting the right adhesive product. Chloroprene-based adhesives are effective in applications where weathering, water resistance and flexibility are necessary, and nitrile adhesives are particularly useful where plasticizers are present. Additionally, some formulas can be combined with an isocyanate curative to increase the level resistance. Furthermore, fire retardant materials can be incorporated in solvent-based formulas to provide an additional layer of protection in assembly applications; the amount of flame retardant can be controlled with the amount of adhesive applied.



Benefits of Solvent-Based Adhesives

Bostik's solvent-based adhesives offer a range of benefits:



Featured Solvent-Based Adhesives

LIQ 1211 Solvent-Based Adhesive

Key Features

- Good adhesion at a wide range of temperatures
- Excellent in vacuum forming applications for foam bonding
- Anti-fogging

LIQ 1211 is a solvent-based, one-component, moisture curing adhesive designed for automotive interior trim component assembly. It is a blue, medium viscosity liquid adhesive that is spray-applied to a variety of substrates, particularly unprimed PP. Suitable for vacuum forming and pressure bonding with unprimed polyolefin foam, this product is typically used as a contact adhesive. Additionally, LIQ 1211 is formulated without toluene and xylene, which might be prohibited by VOC regulations.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Blue Liquid
Total Solids	22%
Thermoset Viscosity	200 cP @ 77°F (25°C)
Density	6.80 lbs/gal (0.816 g/cm ³)
Flash Point	50°F (10°C)

LIQ 1531AC

Solvent-Based Adhesive

Key Features

- High heat, water and oil resistant
- Sprayable
- Excellent green strength

Bostik's LIQ 1531AC is a chloroprene solution contact adhesive designed for spray application onto a variety of substrates. It is suited for high-speed application where large, uniform, coverage is needed for quick bonding. Once applied, the laminate can be handled quickly, eliminating excess processing time for bond strength development.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Tan Liquid
Total Solids	16%
Thermosel Viscosity	185 cP @ 77°F (25°C)
Density	6.7 lbs/gallon
Flash Point	-22°F (-30°C)

LIQ 4045

Solvent-Based Adhesive

Key Features

- Good solvent resistance
- Resistant to plasticizer migration
- Excellent green strength

LIQ 4045 is a fast drying, general purpose nitrile adhesive that exhibits high initial bond strength, nonstaining properties and a clear flexible film. The properties of this adhesive allow it to be brush or roll-applied as well as pre-applied to accommodate a variety of assembly processes.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Amber Liquid
Total Solids	26%
Thermosel Viscosity	2,250 cP @ 77°F (25°C)
Density	7.27 lbs/gallon
Flash Point	1°F (-17°C)

Selecting the Right Solvent-Based Adhesive

Substrate

Non-Plasticized

Plasticized

Application Method

Spray

Brush or Roll

Application Method

Spray

Brush or Roll

Water Resistance

Good

Excellent

LIQ 1096MR

LIQ 1685MC

Heat Cure

Yes

No

LIQ 4036

LIQ 4045

Heat & Humidity Resistance

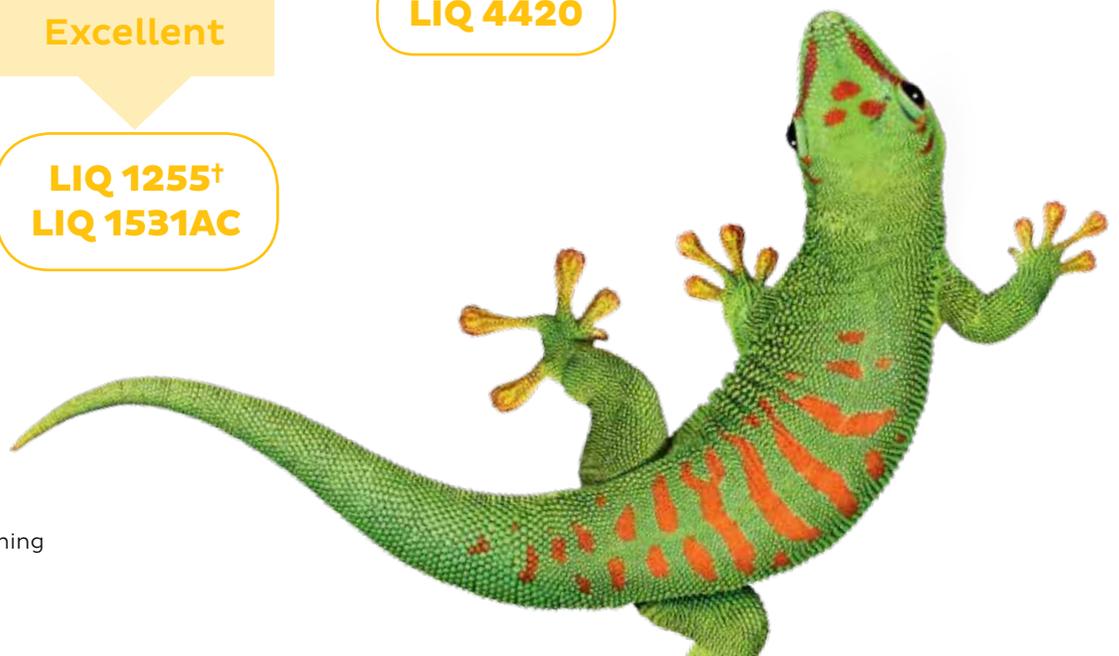
Good

Excellent

LIQ 4420

**LIQ H1211[†]
LIQ 1142MC**

**LIQ 1255[†]
LIQ 1531AC**



[†]Suitable for vacuum forming

Solvent-Based Adhesive Products

Product		Appearance			Solvent	Percent Solids (%)	Viscosity (cP)	Specific Gravity	Density (lb/gal)	Flash Point (°F)	Product Features
		Spray	Brush	Roll							
Acrylic	LIQ 7527FR	White	•	•	Toluene	44	1250	1.04	8.66	-7	One-sided application, self cross-linking, excellent balance of peel, shear and thermal properties, antimony trioxide fire retardant package
	LIQ 7560FR	White	•	•	Toluene	43	1250	1.04	8.66	-7	One-sided application, self cross-linking, excellent balance of peel, shear and thermal properties, antimony pentoxide fire retardant package
Chloroprene Rubber	LIQ 1007M	Yellow-Brown	•	•	Toluene, Other	27	240	0.95	7.90	20	One-sided application, synthetic resin primer, increased anchorage to metal, concrete, wood and other rigid and semi-rigid surfaces
	LIQ 1531AC	Tan	•		Hexane, MEK, Toluene	16	185	0.82	6.70	-22	Two-sided application, sprayable, long open time, high green strength, excellent heat, water and oil resistance
	LIQ 1095MR	Amber		•	MEK, Toluene, Other	23	750	0.89	7.12	<34	Two-sided application, good resistance to heat, oil and water, not for flexible PVC, 2K system with Boscodur 4L
	LIQ 1096MR	Amber		•	MEK, Toluene, Other	25	1100	0.89	7.24	<34	Two-sided application, fast tack, high initial strength, good heat resistance, not for flexible PVC, heat curable or 2k system with Boscodur 4L
	LIQ 1142MC	Amber	•	•	Toluene, Acetone, Other	23	400	0.83	6.90	-18	Two-sided application, sprayable, general purpose, fast-drying, fast tack, good heat and water resistance, not designed for flexible PVC
	LIQ 1177C	Tan		•	Toluene, MEK, Other	23	1250	0.88	7.30	14	Two-sided application, high strength, long tack, good resistance to heat, moisture and aging, bonds rubber coated fabrics to various substrates, not designed for flexible PVC
	LIQ 1685MC	Tan		•	Toluene, MEK, Other	31	5800	0.91	7.51	17	One- or two-sided application, excellent resistance to water and detergents, bonds rubber to metal, wood and cellulose sponge to metal
Modified Chloroprene Rubber	LIQ 1545	Tan	•		Hexane, ethyl acetate, cyclohexane, toluene, methanol	19	250	0.86	7.09	-8	One- or two-sided application, sprayable, good tack and green strength, excellent resistance to heat and humidity, bonds ABS and unprimed polypropylene
	LIQ 1231	Tan	•		Hexane, Acetone, Cyclohexane, Toluene, Methanol	19	200	0.80	6.66	-18	Two-sided, sprayable, excellent green strength, creep and humidity resistance, bonds ABS and unprimed polypropylene, suitable for vacuum forming, available without toluene as LADH1231J.
Nitrile Rubber	LIQ 4036	Yellow		•	MEK	25	2450	0.87	7.42	17	One-sided application, bonds over wide temperature range, heat curable, good heat resistance and good resistance to oil, fuels, water and detergents
	LIQ 4045	Amber		•	Acetone, MEK	26	2250	0.87	7.27	1	Two-sided application, general purpose, high green strength, good resistance to chemicals and plasticizer migration, suitable for bonding flexible PVC
	LIQ 4145-14H	Yellow-Brown		•	Acetone, MEK	30	8000	0.88	7.34	-10	Two-sided application, resistance oil and plasticizer migration, meets requirements of BMS 5-14H Ty 1
	LIQ 4145-30G	Yellow-Brown		•	Acetone, MEK	30	8000	0.88	7.34	-10	Two-sided application, resistance oil and plasticizer migration, meets requirements of BMS 5-14G Ty 1
	LIQ 4420	Brown	•	•	Hexane, Acetone, MEK, Toluene, Other	22	300	0.84	6.99	-18	Two-sided application, sprayable, fast-drying with prolonged tack, good heat, solvent and plasticizer resistance, excellent adhesion to rigid plastics
Synthetic Rubber	LIQ 3050	Yellow-Brown		•	Toluene, MEK	55	15000	0.91	7.60	36	One-sided application, pressure sensitive, excellent shear and peel adhesion, high initial tack
	LIQ 1755	Blue	•		Methylcyclohexane, Cyclohexane, MEK	22	220	0.82	6.84	50	One-sided application, sprayable, moisture curing, excellent heat and humidity resistance bonds unprimed polypropylene, suitable for vacuum forming
	LIQ 1211	Blue	•		Methylcyclohexane, Cyclohexane, MEK	22	220	0.82	6.80	50	Two-sided application, sprayable, moisture curing, good heat and humidity resistance, bonds unprimed polypropylene and polyolefin foam, suitable for vacuum forming
	LIQ 1255	Blue	•		Methylcyclohexane, Cyclohexane, MEK	22	220	0.82	6.80	50	Two-sided application, sprayable, moisture curing, excellent heat and humidity resistance, bonds unprimed polypropylene and polyolefin foam, suitable for vacuum forming

HOT MELT STYRENIC BLOCK COPOLYMER ADHESIVES

Labels | Tapes | Product Assembly | Foamable Gaskets
In-line Labeling | Auto Interior Bonding | Appliance Sealing
Pest Control Traps | Reseal Packaging | Credit Card Mailers



Hot Melt Styrenic Block Copolymer Adhesives

Bostik's range of hot melts based on styrenic block copolymers (SBCs) offer **excellent hot tack** and **permanent pressure sensitivity**. These **thermoplastic** adhesives melt when heat is applied and quickly set to form **versatile** bonds in a variety of applications.

What are Hot Melt Styrenic Block Copolymer Adhesives?

Bostik's hot melt styrenic block copolymer (SBC) products are 100% solid, thermoplastic adhesives that are solid at room temperature, liquefy upon heating and re-solidify upon cooling. These adhesives are based on polymers with hard and soft blocks that enable flexibility and strength when solidified while retaining the ability to re-melt. With fast set up and excellent hot tack, Bostik's hot melt SBCs form nearly instantaneous bonds. Additionally, they are unique due to the fact that they permanently remain pressure sensitive.

This enables extended open times and the ability to self-adhere even when solid.

Bostik manufactures two categories of hot melt SBCs: pressure sensitive hot melt SBCs and hot applied hot melt SBCs. The nature of these two types of adhesives are similar, but the pressure sensitive products are formulated to have the right level of tack, that enables bonds to be formed via pressure only. Hot applied hot melts are designed to offer strong bonds in the assembly of two substrates with a molten adhesive.

Pressure Sensitive Hot Melt SBC Adhesives

- For self-adhesive labels and tapes
- Broad range of pressure sensitivity levels, including removable and permanent
- Can be applied via slot-die or roll-coater
- Available in solid drums and hand feed chubs

Hot Applied Hot Melt SBC Adhesives

- Can be applied via slot-die, bead application and spray coaters
- Available in solid drums and hand feed chubs
- Broad range of characteristics, including low temperature flexibility, high heat resistance or foamability





Choosing the Right Hot Melt SBC Adhesive

Determine the end use requirements

Hot melt SBCs are used for a variety of applications whether you need:

- Dialed-in pressure sensitivity for aggressive grab or clean removal
- Optimized viscosity for fast line speeds
- A foamable adhesive to create a custom gasket-like bead
- High heat resistance for demanding environments

Choose an optimal pressure sensitivity

- In pressure sensitivity driven applications, like self-adhesive labels, the minimum application temperature, loop tack and 180° peel ensure the correct level of pressure sensitivity is selected.
- In most hot applied applications, pressure sensitivity is a secondary selection criteria. These products are usually selected first based on substrate compatibility, viscosity and heat resistance.

Understand the required heat resistance

- Thermoplastic adhesives cannot be subjected to applications where elevated temperatures might reactivate the adhesive. Typical softening points of hot melt SBCs range from 150° to 300°F.
- Shear Adhesive Failure Temperature (SAFT) gives an indication of the adhesive's ability to hold a bond at elevated temperature. Typical SAFT of hot melt SBCs range from 125°F to over 275°F.

Select an appropriate viscosity

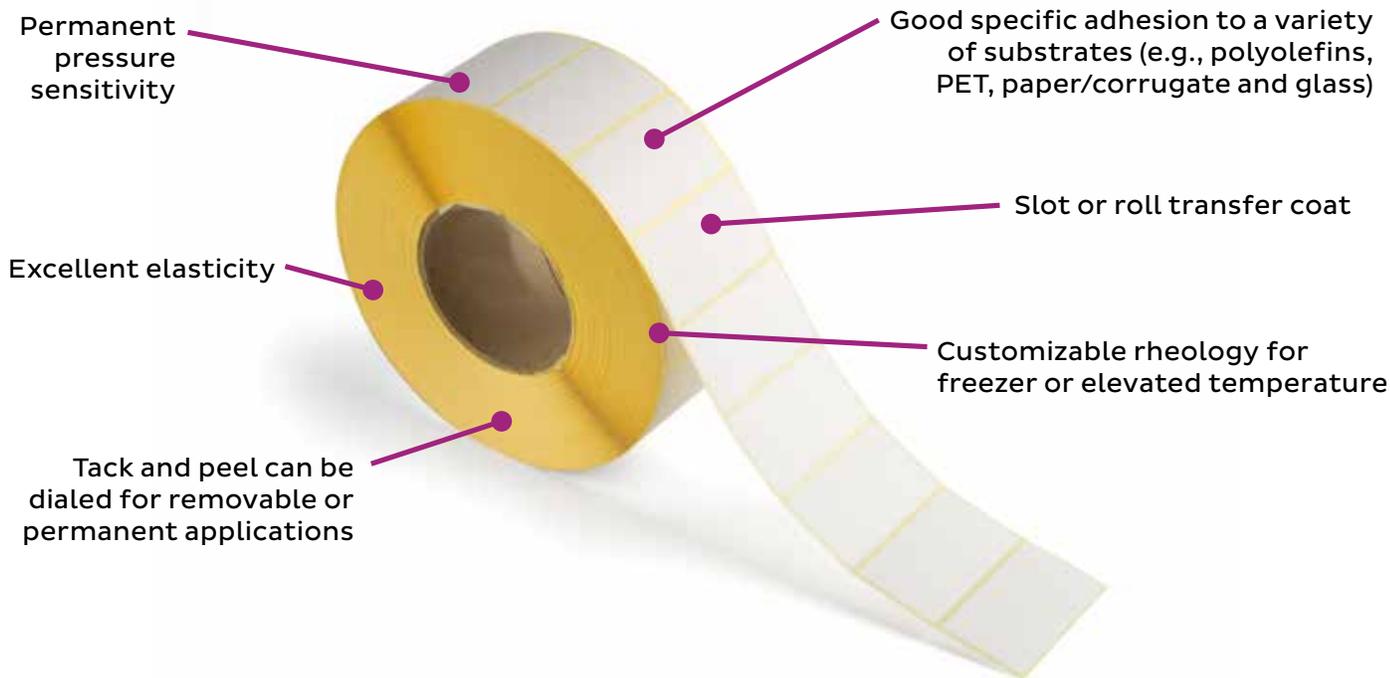
- Viscosity can affect application temperature of the adhesive and degree of wet out on a substrate.
- Viscosity will affect what application methods are appropriate, whether it's extrusion, spray, roll coat or other methods.

Consider the adhesive form

- For high throughput applications with accessibility to a hot drum unloader, use drums ranging in fill level from 350 - 475lbs.
- For smaller scale applications with a small melt tank, use the convenient, hand-feed, package-less package form, fill and seal and pillow co-extrusion forms.

Benefits of Pressure Sensitive Hot Melt SBC Adhesives

Bostik's pressure sensitive hot melt SBC adhesives offer a range of benefits:



Featured Pressure Sensitive Hot Melt SBC Adhesives

Thermogrip® 2211 High Temperature Resistant Tape and Assembly Adhesive

- Key Features**
- Excellent heat resistance
 - High tack and peel
 - Strong bonds to plastics and paperboard

Thermogrip 2211 is a pressure sensitive hot melt SBC adhesive for adhering trim and sound deadener materials to various plastics and metals. This product has high tack and high shear, which is why it is excellent for durable labels, tapes and product assembly applications.



TYPICAL PHYSICAL PROPERTIES	
Description	Results
Thermoset Viscosity (Brookfield - ASTM D3236)	25,950 cP @ 325°F (163°C) 12,000 cP @ 350°F (177°C) 8,300 cP @ 375°F (191°C)
Softening Point (Herzog ASTM E28)	250°F (121°C)
Suggested Running Temperature	325 - 375°F (163-191°C)
Density	0.94 g/cc @ 77°F (25°C)

Thermogrip 20192

General Purpose Label Adhesive

Key Features

- Excellent balance of tack and peel
- Good adhesion to corrugate
- Balanced low temperature performance

Thermogrip 20192 is a pressure sensitive hot melt SBC adhesive for labeling applications. With a great balance of tack and peel, it is ideal for various substrates used for shipping. This low viscosity product also has excellent specific adhesion to poly and corrugate and is sold in drums.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity (Brookfield - ASTM D3236)	13,675 cP @ 300°F (149°C) 8,663 cP @ 325°F (163°C) 5,850 cP @ 350°F (177°C) 3,995 cP @ 375°F (191°C)
Softening Point (Herzog ASTM E28)	184°F (84°C)
Suggested Running Temperature	300-350°F (149-177°C)
Density	0.98 g/cc @ 77°F (25°C)

Thermogrip 2259-01

Freezer Grade Label Adhesive

Key Features

- Excellent cold temperature performance
- Excellent adhesion to polyolefin
- Very good process-ability

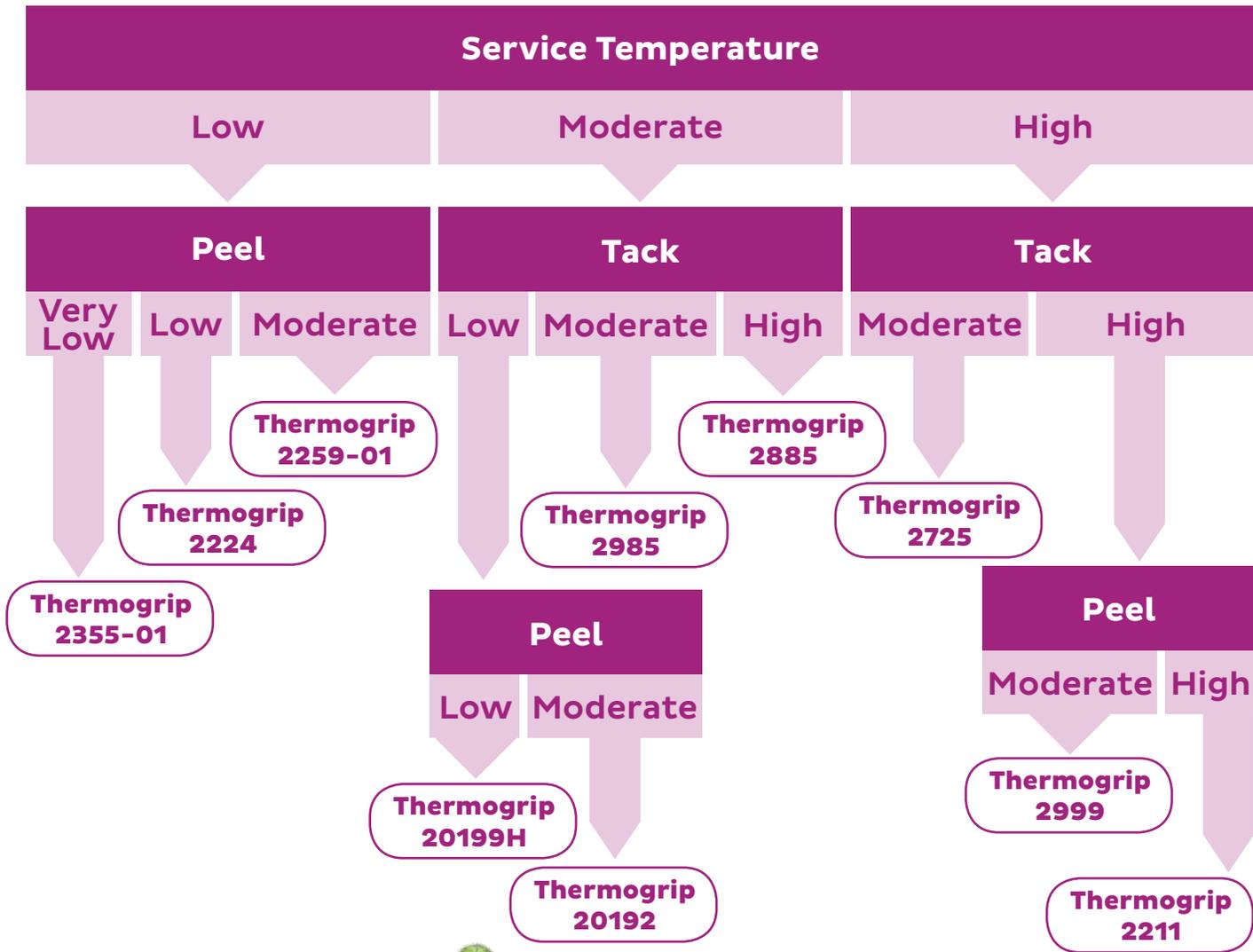
Thermogrip 2259-01 is light in color and has low viscosity with good die-cuttability. It also has excellent bonding to polyolefin substrates and paper with application temperatures down to -15°F. Suitable for freezer grade labels, it also works well for tapes used on common packaging substrates for freezer conditions, such as frozen meats, ice cream containers and cryogenic labeling applications.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity (Brookfield - ASTM D3236)	14,700cP @ 325°F (163°C) 8,300 cP @ 350°F (177°C) 5,200 cP @ 375°F (191°C)
Softening Point (Herzog ASTM E28)	206°F (97°C)
Suggested Running Temperature	325-375°F (163-191°C)
Density	0.94 g/cc @ 77°F (25°C)

Selecting the Right Pressure Sensitive Hot Melt SBC Adhesive



Pressure Sensitive Hot Melt SBC Products

Product	Min. Application Temperature (°F)	Loop Tack	180 Peel	SAFT (°F)	Viscosity (cP)			Softening Point	Suggested Running Temp (°F)	Density @ 77°F	Product Features
Thermogrip 2355-01	-33.4	1.4	0.6	144	11,700 @ 300°F	8,000 @ 325°F	199	310-340	0.95	For removable labels with consistent low peel bond, residue-free removal and low temperature adhesion	
Thermogrip 2259-01	-8.2	5.2	2.6	137	14,700 @ 325°F	8,300 @ 350°F	206	325-375	0.94	For freezer grade labels, excellent die-cutability, strong bond to packaging containers and films in the presence of moisture, can be applied at room or freezer temperatures	
Thermogrip 4382H	6.2	3.7	2.2	158	16,500 @ 325°F	11,000 @ 350°F	219	310-360	1.10	For direct food contact labels, bonds well to a variety of fruit and vegetable surfaces, residue-free removal, wide application temperature range, FDA 175.125(b) approved	
Thermogrip 2224	6.2	4.4	4.8	137	9,100 @ 325°F	5,750 @ 350°F	200	325-355	0.94	For dairy labels, strong adhesion to HDPE containers and PP caps, adhesion at refrigeration temperature, bonds in the presence of moisture	
Thermogrip 2548B	13.4	6.0	4.7	142	8,500 @ 300°F	5,500 @ 325°F	196	275-350	0.96	For tire labels, bonds well to winter, summer, shaved and unshaved tires, resistant to low molecular weight components	
Thermogrip 20129	18.8	4.3	3.8	148	15,300 @ 350°F	11,000 @ 375°F	183	350-375	0.94	For no-label look labels, works with or without a primer, excellent wet out, good die-cutability, repositionable, does not distort film	
Thermogrip 20199H	24.2	2.6	1.8	156	15,100 @ 325°F	10,075 @ 350°F	196	300-375	1.20	For general purpose labels, balanced tack and peel, excellent converting, good adhesion to polyolefin substrates	
Thermogrip 2345H	18.8	5.2	5.1	140	14,512 @ 325°F	9,625 @ 350°F	184	315-365	1.10	For packing slip and shipping labels, balanced peel and tack, excellent converting, bonds well to common shipping substrates, wide range of application and service temperatures	
Thermogrip 20192	21.0	3.8	6.2	128	8,663 @ 325°F	5,850 @ 350°F	184	300-350	0.98	For general purpose labels, balanced tack and peel, bonds well to difficult shipping substrates, excellent converting, good low temperature performance	
Thermogrip 2985	29.6	6.0	5.5	141	10,000 @ 325°F	13,825 @ 350°F	175	325-375	0.98	For general purpose labels, high tack, bonds well to difficult shipping substrates	
Thermogrip 2885	44.0	11.3	7.2	157	13,600 @ 325°F	7,850 @ 350°F	222	325-350	0.94	For general purpose labels, high tack and peel, excellent converting, bonds well to a wide range of substrates	
Thermogrip 2571-01	31.4	10.0	7.5	168	15,100 @ 325°F	8,100 @ 350°F	224	290-340	0.94	For high performing labels, good bond to corrugate at room temperature, excellent die-cutability, high release, high tack & peel	
Thermogrip 2725	20.6	5.0	4.5	186	12,600 @ 350°F	10,125 @ 375°F	233	325-375	0.95	For dry wall seam tape, wide range of temperature performance and temperature resistance	
Thermogrip 2211	45.8	10.5	8.2	195	12,000 @ 350°F	8,300 @ 375°F	250	325-375	1.02	For durable labels, tapes and product assembly. High shear, high tack, excellent adhesion to a variety of substrates	
Thermogrip 20060	22.4	5.0	4.5	205	15,000 @ 325°F	9,000 @ 350°F	238	300-375	0.95	For removable road marking tape, good bond to cold and moist road surfaces, residue-free removal	
Thermogrip 2999	33.2	8.9	4.8	197	17,000 @ 350°F	7,500 @ 375°F	278	325-375	0.98	For high temperature tape and water shield applications, high temperature resistance, high shear, high tack	
Thermogrip 20021PB	-	-	-	-	1,050 @ 250°F	-	-	275 - 300	0.94	For tray-type rodent traps, peanut butter scented	

Benefits of Hot Applied Hot Melt SBC Adhesives

Bostik's hot applied hot melt SBC adhesives offer a range of benefits:

Can be applied via slot die, bead application and spray coaters

High viscosity enabling use on porous textile-like substrates

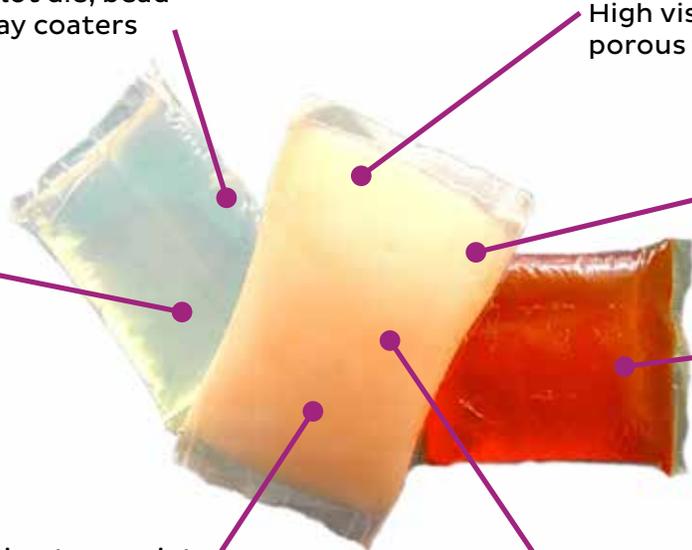
Foamable

Excellent elasticity

Fast set with extended open times

Good specific adhesion to a variety of substrates (e.g. polyolefins, PET, paper/corrugate and glass)

Customizable rheology for cold or hot, structural or flexible applications



Featured Hot Applied Hot Melt SBC Adhesives

Thermogrip 5265 Resealable Adhesive

Key Features

- High tack
- Resealable
- Peelable

Thermogrip 5265 is a hot applied hot melt SBC adhesive with high tack and peel with superior resealability. This product is commonly used on plastic bags or pouches that need to be resealable.



TYPICAL PHYSICAL PROPERTIES	
Description	Results
Thermosel Viscosity (Brookfield - ASTM D3236)	2,235 cP @ 300°F 1,330 cP @ 325°F 850 cP @ 350°F
Softening Point (Ring and Ball Herzog - ASTM E28)	172°F
Suggested Running Temperature	300 - 350°F
Density	0.95 g/cc @ 77°F

Thermogrip 2790

Bottle Labeling Adhesive

Key Features

- Strong adhesion in hot and cold environments
- Good machining
- Colorless pressure sensitive

Thermogrip 2790 is a hot applied hot melt SBC adhesive. As a colorless, pressure sensitive labeling adhesive, it machines well on rotary labelers. Thermogrip 2790 also offers strong adhesion in both hot and cold end use environments, providing versatility in applications.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity (Brookfield - ASTM D3236)	2,250 cP @ 250°F 1,200 cP @ 275°F 750 cP @ 300°F
Softening Point (Ring and Ball Herzog ASTM E28)	155°F
Suggested Running Temperature	275-350°F
Density	0.97 g/cc @ 77°F

Thermogrip 2315-02

High Performance General Assembly Adhesive

Key Features

- High heat resistance
- Balanced tack and peel
- Foamable

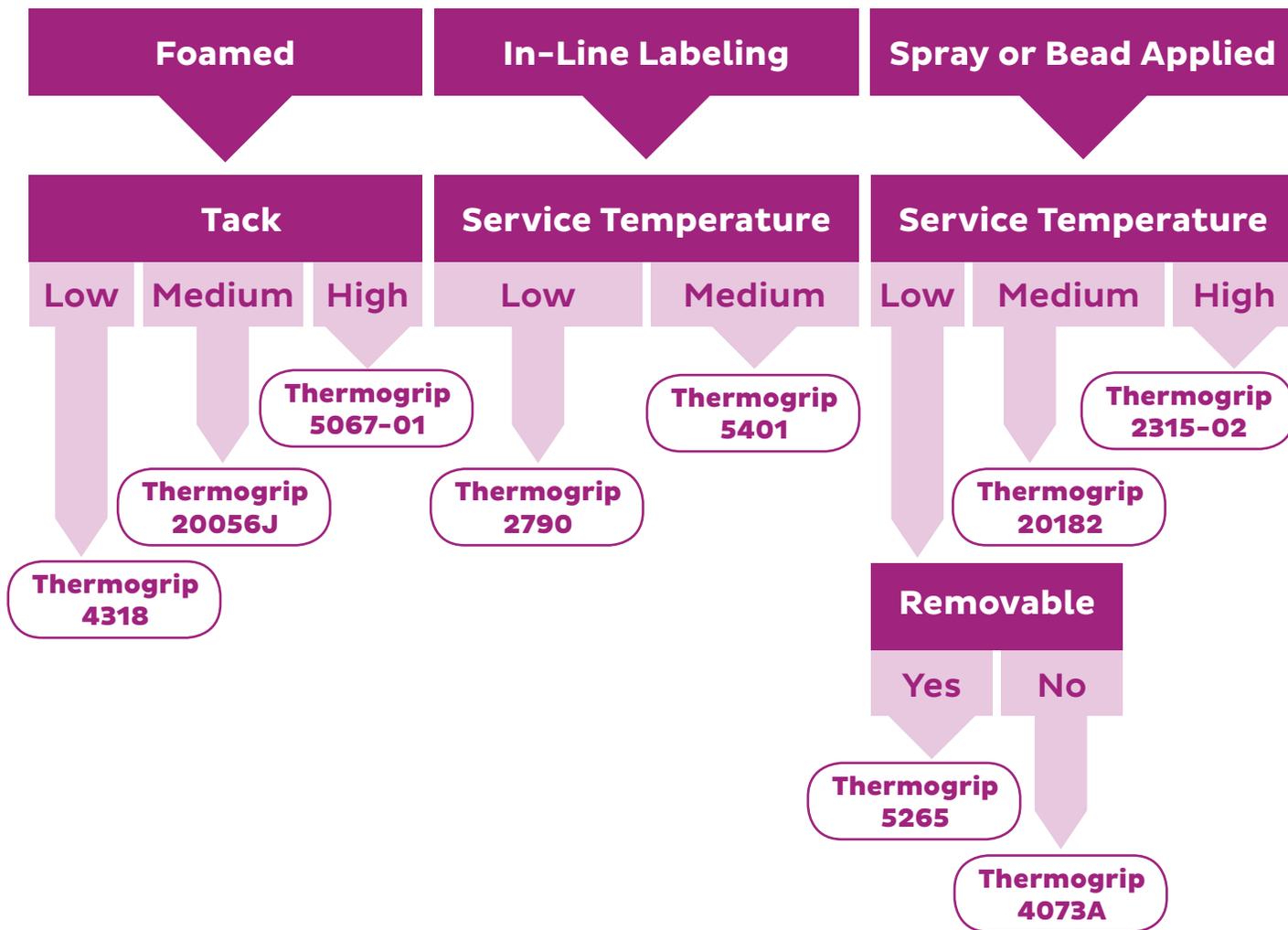
Thermogrip 2315-02 is a hot applied hot melt SBC adhesive that exhibits excellent heat resistance and can withstand high shear forces without compromising tack and peel. It has found exceptional utility in direct-applied automotive watershield attachments and load floor hardboard bonding; however, its versatility also lends itself to a variety of demanding product assembly applications.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Thermosel Viscosity (Brookfield - ASTM D3236)	29,000 cP @ 325°F (162.8°C) 13,500 cP @ 350°F (176.7°C) 8,550 cP @ 375°F (190.6°C) 4,850 cP @ 400°F (204.4°C)
Softening Point (Herzog ASTM E28)	248°F (120°C)
Suggested Running Temperature	350-390°F (176.7-198.9°C)
Density	0.94 g/cc @ 77°F (25°C)

Selecting the Right Hot Applied Hot Melt SBC Adhesives



Hot Applied Hot Melt SBC Adhesives Substrate Guide

Product		Substrate Compatibility							
		PP/PE	PET	Paper/ Corrugate	Metals	Glass	Textiles	Wood	Urethane Foam
Assembly	Thermogrip 20080	●	○	○	○		●	○	
	Thermogrip 2900	●	○	○	○		●	○	
	Thermogrip 2345	●	●	●	○	●	○	○	
	Thermogrip 4073A	●	○	○	○		●	○	
	Thermogrip 2465	●	○	○	○		●	○	
	Thermogrip 20182	○	○	○	○	●	●	○	
	Thermogrip 2284-01	●	●	●	○	●	●	○	
	Thermogrip 2187-01	●	●	●	○	●	●	○	○
	Thermogrip 2211	●	●	●	●	○	●	○	○
	Thermogrip 2315-02	●	●	●	●	○	●	○	○
	Thermogrip 2038	○	●	○	○		●		
	Thermogrip 2665	○	●	○	○		○		
Labeling	Thermogrip 2790	●	●	●					
	Thermogrip 5401	●	●	●	○				
	Thermogrip 4360	●	●	●	○	●			
Removable	Thermogrip 5434			●		●			
	Thermogrip 998-337	●	●	●	○				
	Thermogrip 5077	●	●	●					
	Thermogrip 995-373	●	●						
	Thermogrip 5265	●	●	●					

● Excellent ○ Good

This chart above provides typical substrates with which Bostik's HMPSA adhesives have been used, but is not a guarantee of suitability. Bostik recommends evaluating the performance of a HMPSA adhesive in individual applications to ensure performance requirements are achieved.

Hot Applied Hot Melt SBC Adhesives Products

Product	Form	Foamable	Heat Resistance	Residual Tack	Viscosity (cP)		Softening Point		SAFT (°F)	180° Peel to SS (lbs/in ²)	Suggested Running Temp (°F)	Product Features
Thermogrip 20080	Drums & Hand		Low	High	2,100 @ 300°F	1,200 @ 325°F	175	125	6.3	250 - 338		Light color and low odor light assembly hot melt SBC
Thermogrip 2900	Hand		Low	Medium	4,200 @ 300°F	2,400 @ 325°F	210	133	6.3	275 - 325		Low viscosity general assembly hot melt SBC
Thermogrip 4073A	Hand		Low	Medium	2,800 @ 300°F	1,500 @ 325°F	172	149	6.7	275 - 325		Light color and low odor general assembly hot melt SBC
Thermogrip 2465	Drums & Hand		Medium	High	3,800 @ 300°F	2,370 @ 325°F	191	153	-	250 - 300		Low viscosity general assembly hot melt SBC with high tack
Thermogrip 20182	Hand		Medium	Medium	4,750 @ 300°F	3,000 @ 325°F	192	157	4.5	275 - 350		Balanced low and high temperature performance, general assembly hot melt SBC
Thermogrip 2187-01	Drums & Hand		Medium	High	23,400 @ 300°F	15,100 @ 325°F	224	168	7.4	290 - 340		Medium heat resistance high performance assembly and tape hot melt SBC with high tack
Thermogrip® 2211	Drums & Hand	●	High	High	12,000 @ 350°F	8,300 @ 375°F	250	195	8.2	325 - 375		High shear, high performance assembly and tape hot melt SBC with high tack
Thermogrip 2315-02	Drums & Hand	●	High	Medium	13,500 @ 350°F	8,550 @ 375°F	248	206	5.7	350 - 390		High shear, high heat resistance, high performance assembly hot melt SBC
Thermogrip 2038	Hand		High	Low	54,700 @ 350°F	22,700 @ 375°F	275	225	8	390 - 400		High shear, high viscosity, high heat resistance, high performance assembly hot melt SBC with low residual tack
Thermogrip 2665	Hand		Very High	Medium	32,500 @ 350°F	8,500 @ 375°F	290	240	7.3	375		High shear, extreme heat resistance high performance assembly and tape hot melt SBC
Thermogrip 4318	Drums & Hand	●	Medium	Low	4,000 @ 275°F	1,000 @ 300°F	201	-	-	240 - 270		FIP, general purpose cabinet seal hot melt SBC
Thermogrip 5067-01	Drums & Hand	●	Medium	High	11,500 @ 350°F	8,000 @ 375°F	215	-	-	350 - 375		FIP, general purpose weatherstrip attachment hot melt SBC
Thermogrip 20056J	Drums & Hand	●	High	Medium	22,250 @ 350°F	5,000 @ 375°F	295	-	-	325-375		FIP, high shear water-shield hot melt SBC, gray in color
Thermogrip 2999	Drums & Hand	●	High	High	17,000 @ 350°F	7,500 @ 375°F	278	-	-	325 - 375		FIP, high heat resistant water-shield and tape hot melt SBC
Thermogrip 5141K01	Drums & Hand	●	Very High	Low	29,600 @ 375°F	8,000 @ 400°F	330	-	-	375 - 400		FIP, high sag resistance gasket hot melt SBC, black in color
Thermogrip 2790	Drums & Hand		Low	Medium	1,200 @ 250°F	750 @ 300°F	155	-	-	290-310		Hot melt SBC for in-line bottle labeling, light color & odor, sprayable, excellent adhesion to difficult substrates
Thermogrip 5401	Drums & Hand		Medium	Medium	1,750 @ 250°F	800 @ 275°F	190	-	-	275-300		Hot melt SBC for in-line labeling, optimized for Nordson Patternjet® spray system, good heat resistance
Thermogrip 4360	Drums & Hand		Low	High	1,075 @ 275°F	688 @ 300°F	162	-	-	275-325		Hot melt SBC for non-carbonated in-line bottle labeling, clean machining, high tack, superior adhesion to glass and PET bottles
Thermogrip 5434	Drums		Low	Medium	5,650 @ 300°F	2,300 @ 325°F	215	-	-	300-350		Hot melt SBC for direct mail market applications, cohesive failuring adhesive to reduce fiber tear, very low staining, light color and odor
Thermogrip 998-337	Drums & Hand		Low	Low	9,050 @ 250°F	2,775 @ 275°F	196	-	-	225-350		Hot melt SBC used for strippable protective coating, edge and sanitary protection, low tack, very low color
Thermogrip 5265	Hand		Low	High	2,250 @ 300°F	1,330 @ 325°F	172	-	-	300-350		Hot melt SBC for pouch seal, high peel, high tack, used for resealable applications



WATER-BASED ADHESIVES

**Labels | Tape | Case and Carton | Flexible Packaging
Candy Bar Wrappers | Granola Bar Wrappers
Masking | Resealable | Removable | Bottle Labeling**

Water-Based Adhesives

Bostik's water-based adhesive line offers a wide range of products that can be used in many different markets. With **excellent die cut properties and machinability, they are also cross-linkable.** Some of these adhesives are offered with FDA approvals.

What are Water-Based Adhesives?

Bostik's water-based adhesives are composed of natural and synthetic latex. They can be used in several different applications, ranging from food and packaging to assembly. Additionally, our water-based adhesives are optimized to allow for fast line speeds while still providing excellent quality of adhesion.

Broken down into three categories, our water-based adhesives can be cohesive, general industrial or pressure sensitive. Our products are also environmentally friendly and can be custom-formulated to meet customers' application needs.

General Industrial

- Case/carton applications
- Bottle labeling applications
- Available in pails, drums and totes



Cohesive

- Used in flexible packaging applications
- Most have FDA clearance
- Available in drums and totes



Pressure Sensitive

- Available in drums and totes
- Some have FDA clearances
- Broad range of pressure sensitivity levels including removable and permanent





Choosing the Right Water-Based Adhesive

Determine the end use requirements

Water-based adhesives are used for a variety of applications whether you need:

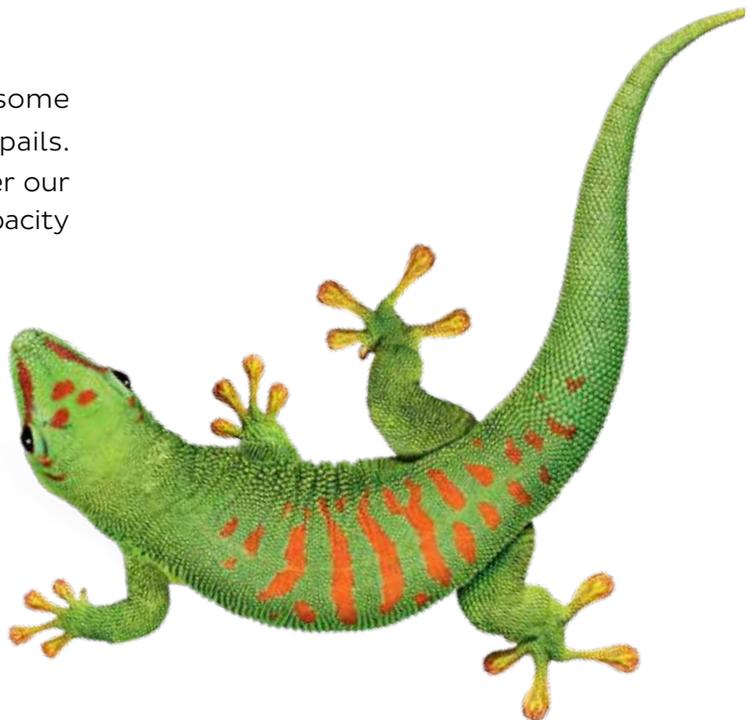
- Resealable adhesives that are able to be applied and laser cut
- FDA clearance for direct or indirect food contact
- High performance rigid packaging adhesives for industrial use

Select the appropriate adhesive package form

- For small scale applications, we do offer some of our water-based adhesives in 5 gallon pails.
- For high throughput applications, we offer our material in drums, totes and tanker capacity (5,000 gallon).

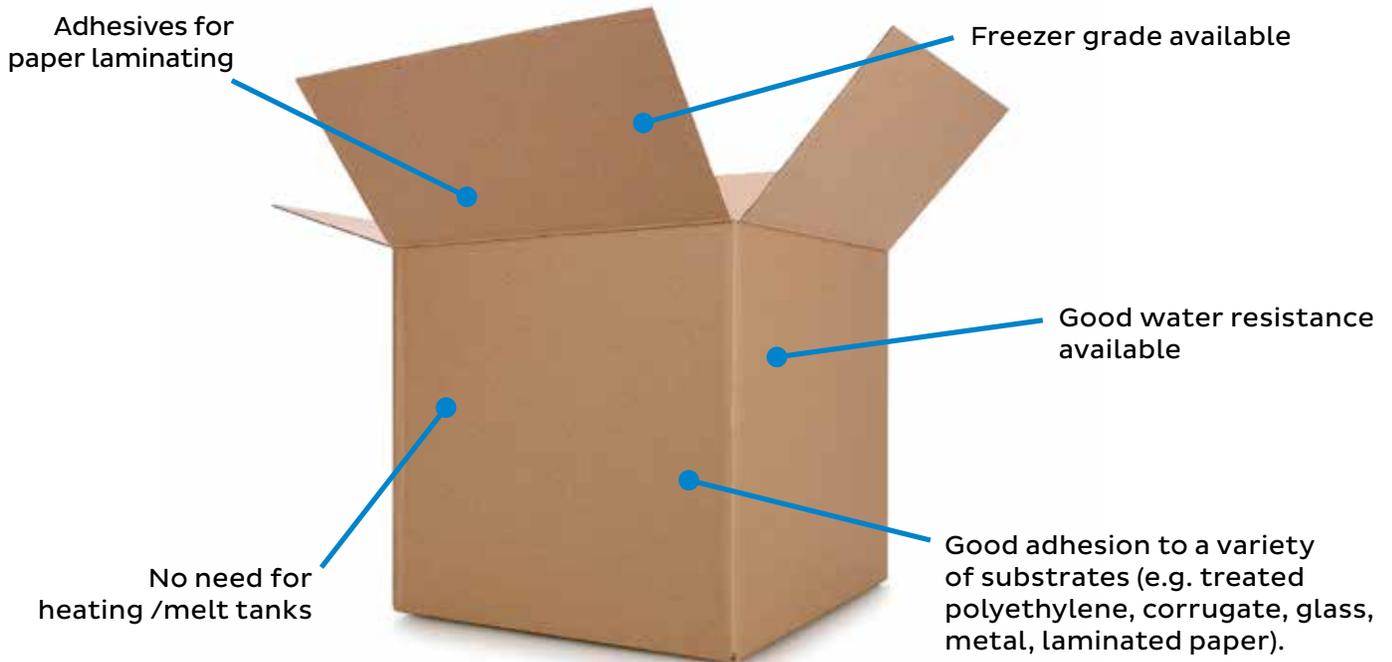
Consider the regulatory requirements

Bostik's water-based adhesives are formulated with direct or indirect food contact FDA approval or with no FDA approval at all. For full FDA information, contact your Bostik sales representative.



Benefits of General Industrial Water-Based Adhesives

Bostik's general industrial water-based adhesives offer a range of benefits:



Featured General Industrial Water-Based Adhesives

Aquagrip® L1231 Packaging Adhesive

Key Features

- Ideal for spray applications
- Good adhesion to a variety of paper stocks
- Moderate open time and set speed

Aquagrip L1231 is a general purpose packaging and laminating water-based adhesive. It is suitable for case and carton seal, lap joints, paper bag tubing and seaming, tubewinding and paper lamination applications. This product is ideal for spray and has good pot stability as well as moderate set speed and open time. It also features sufficient adhesion to a wide variety of paper stocks.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	White
pH	6.5
Total Solids	42.5%
Viscosity (Brookfield - ASTM D2196)	1,000 cP @77°F
Density	9.06 lbs/gal @ 77°F

Aquagrip L7295

Bottle Labeling

Key Features

- High tack
- Good flexibility
- Fast set speed

Aquagrip L7295 is an aqueous, acrylic-based dispersion with high tack, fast set and good flexibility. With clean machining and adhesion to PET, HDPE and coated glass, this product is ideal for rotary and direct-transfer in bottle labeling applications. Aquagrip L7295 is also well-suited for moderate and high speed processing and is easy to clean up.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Cream
pH	8.0
Total Solids	46.5%
Viscosity (Brookfield - ASTM D2196)	65,000 cP @ 77°F
Density	8.52 lbs/gal @ 77°F

Aquagrip L8115

High Performance Packaging and Assembly Adhesive

Key Features

- Excellent wet-out
- Moderate open time
- High adhesion to difficult substrates

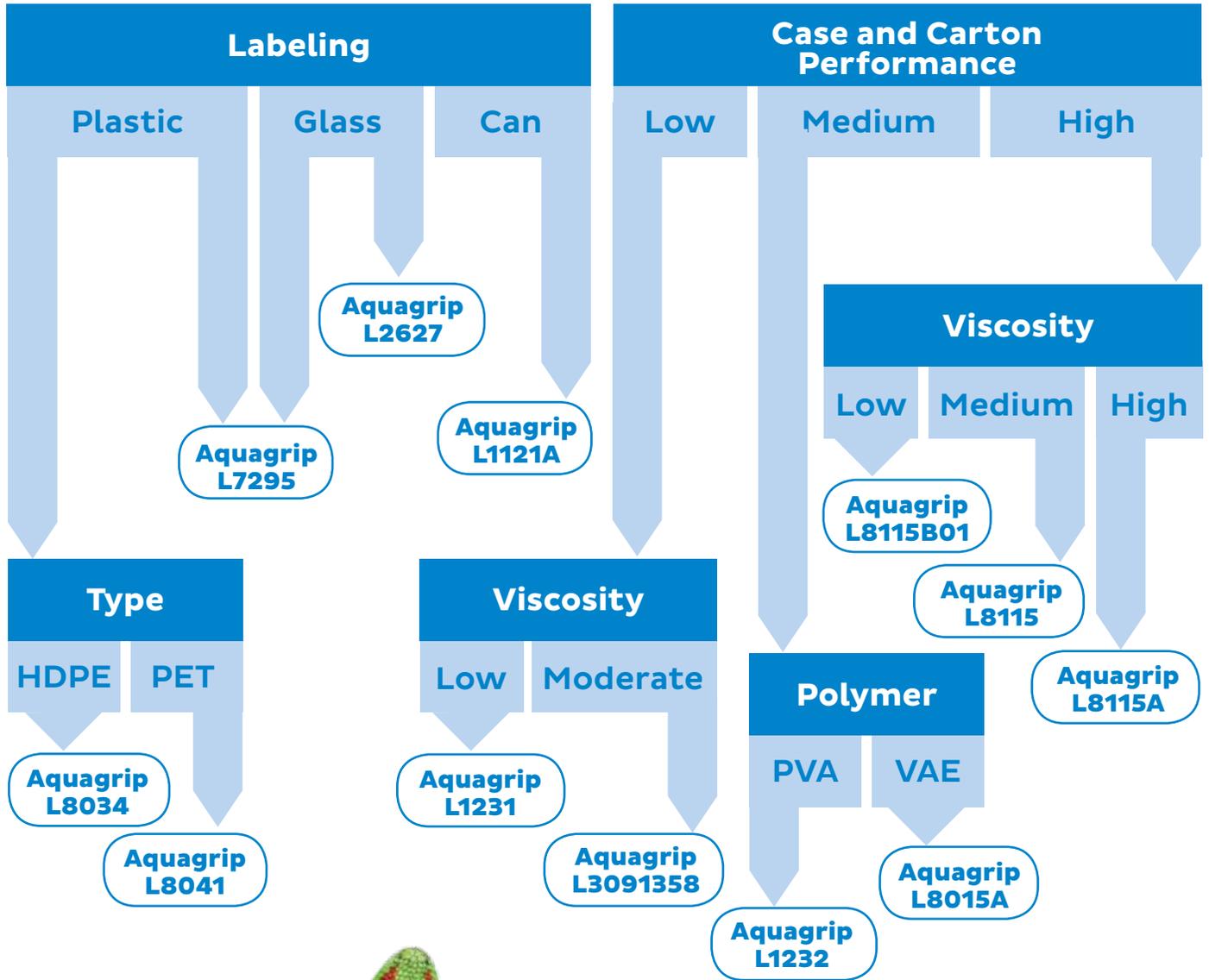
Aquagrip L8115 is a polyvinyl acetate (PVAC) emulsion with fast set, excellent wet-out and moderate open time. This product also offers high adhesion to difficult stocks, such as polycoated laminated papers and many Michelman coatings. Furthermore, it provides excellent freezer resistance in final bonds.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	White
pH	4.5
Total Solids	56.0%
Viscosity (Brookfield - ASTM D2196)	3,000 cP @ 77°F
Density	8.4 lbs/gal @ 77°F

Selecting the Right General Industrial Water-Based Sealant



WATER-BASED



General Industrial Water-Based Adhesives

Product	Viscosity (cp) @ 77°F	PH	% Solids	Color	Density (lb/gal) @ 77°F	Open Time	Set Speed	Product Features
Aquagrip L7295	65,000	9.5	46.0	Off-White	8.5	Short	Fast	PET bottle labeling, good cold flexibility, clean machining, good wet tack
Aquagrip L2627	50,000	9.5	39.5	Light Beige	8.9	Long	Fast	Non-returnable glass bottle labeling, PET labeling
Aquagrip L8034	21,500	8.6	56.0	Off-White	9.0	Medium	Fast	HDPE and PP bottle labeling, good adhesion to treated polyolefins
Aquagrip L8041	44,500	5.0	65.0	White	9.0	Medium	Medium	PET bottle labeling
Aquagrip L8015A	1,300	4.8	55.5	White	8.9	Short	Fast	Case/carton seal, good adhesion to difficult paper stock
Aquagrip L1121A	4,000	8.8	38.0	Off-White	9.8	Long	Slow	Lap end paste, belt or 3-sided pot applicators, good wet tack
Aquagrip L1231	1,000	6.5	42.5	White	9.1	Short	Medium	General purpose packaging and laminating, easy to clean
Aquagrip L1232	1,565	6.5	56.5	White	9.1	Short	Fast	General purpose packaging and assembly, higher adhesion and flexibility than L1231
Aquagrip L3091358	2,075	5.5	44.5	White	9.1	Medium	Medium	General purpose packaging and laminating, high viscosity version of L1231
Aquagrip L8115	1,500	4.5	56.0	White	9.0	Medium	Fast	High performance packaging and assembly adhesive, freezer grade case/carton
Aquagrip L8115A	3,000	4.5	57.0	White	9.0	Medium	Fast	High performance packaging and assembly adhesive, freezer grade case/carton, higher viscosity version of L8115, ideal for roller or open pot application, VAE-based
Aquagrip L8115B01	500	4.5	54.5	White	9.0	Medium	Fast	High performance packaging and assembly adhesive, freezer grade case/carton, lower viscosity version of L8115, ideal for spray or non-contact applications, VAE-based

Benefits of Cohesive Water-Based Adhesives

Bostik's cohesive water-based adhesives offer a range of benefits:



Featured Cohesive Water-Based Adhesives

Turbo-Seal® C1775B

Cold Seal Packaging

Key Features

- High flexibility
- Excellent barrier sealing
- FDA approved

Turbo-Seal C1775B is a water-based cohesive coating for candy and snack food flexible packaging applications. It is based on a blend of natural rubber latex and synthetic latex and is formulated to be low foaming on high speed coating equipment.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Milky-white
Odor	Ammonia
pH	9.8 -11.0
Solids (%)	56 - 60%
Viscosity	60 -120 cPs
Density	8.10 lb/gal @ 77°F

Turbo-Seal C2881B

Cold Seal Packaging

Key Features

- High flexibility
- Very low blocking to suitable release films and lacquers
- FDA approved

Turbo-Seal C2881B is a water-based cohesive coating for candy and snack food flexible packaging applications. It is based on a blend of natural rubber latex and synthetic latex and is formulated to be low foaming on high speed coating equipment.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Milky-white
Odor	Ammonia
pH	9.8 - 11.0
Solids (%)	56 - 59%
Viscosity	60 - 120 cPs
Density	8.10 lb/gal @ 77°F

Nip-Weld® N218-939B

Cold Seal Packaging

Key Features

- FDA approved
- Good oil resistance
- Excellent flexibility

Nip-Weld N218-939B is a water-based cohesive coating for candy and snack food flexible packaging applications. It is based on a blend of natural rubber latex and synthetic latex and is formulated to be low foaming on high speed coating equipment.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	Milky-white
Odor	Ammonia
pH	9.8 - 11.0
Solids (%)	55 - 60%
Viscosity	40 - 120 cPs
Density	8.10 lb/gal @ 77°F

Selecting the Right Cohesive Water-Based Adhesive

Substrate

Surface Printed Monowebs with Release Lacquer

Reverse Printed Laminations with Release Film

Package Size

Mini

Full Size

Temperature Range

Moderate

High

Line Speed

Moderate

Fast

Nip-Weld
N218-939B

Turbo-Seal
C2881B

Turbo-Seal
C1775B

Turbo-Seal
C1224B



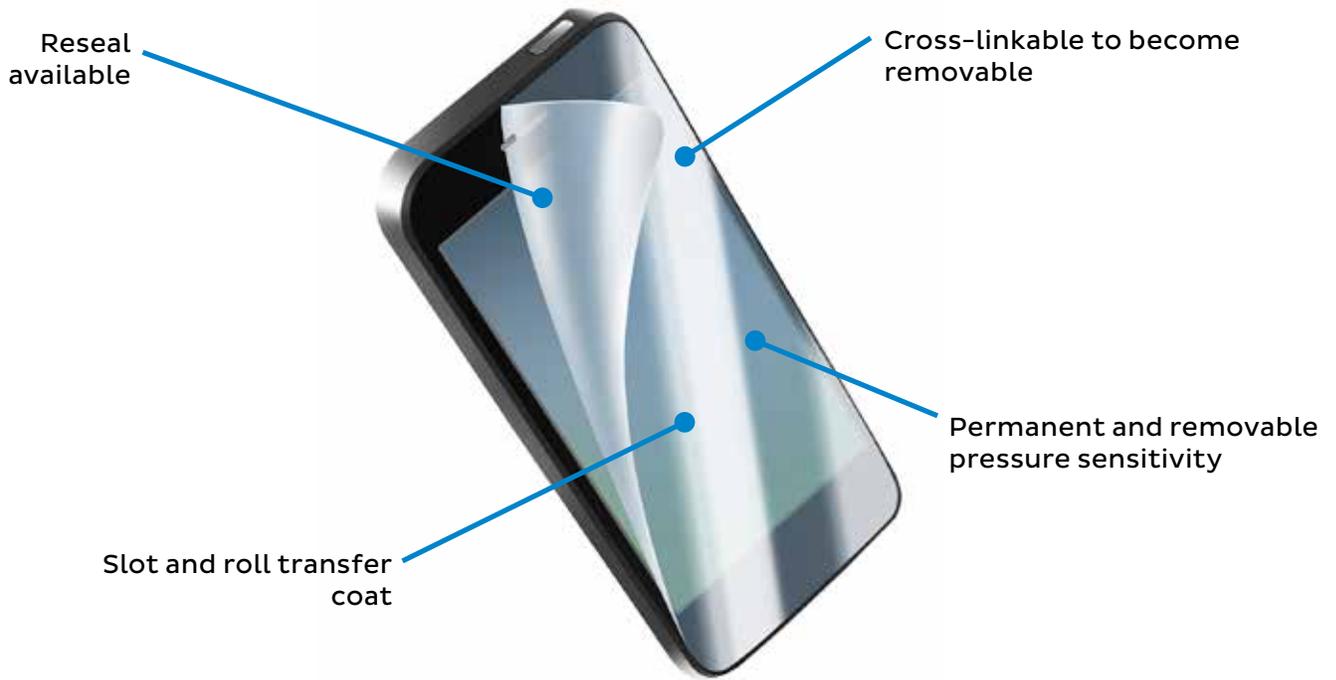
Cohesive Water-Based Adhesives

Product	FDA Approved*	Odor	Viscosity (cp) @ 77°F	pH	% Solids	Color	Density (lb/gal) @ 77°F	Product Features
Turbo-Seal C1775B	Yes	Ammonia	90	10.2	58.3	Cream	8.1	Aggressive self-seal properties, excellent barrier sealing
Turbo-Seal C2881B	Yes	Ammonia	83	10.2	57.5	Cream	8.09	Very low blocking adhesive, excellent machining properties
Turbo-Seal C1224B-03	Yes	Ammonia	13	10.2	57.0	Cream	8.3	Suitable for high speed coating equipment, very low blocking
Nip-Weld N218-939B	Yes	Ammonia	90	10.0	56.5	White	8.3	Low foam, good oil resistance, excellent flexibility, minimal blocking
Nip-Weld N207-939B	Yes	Ammonia	90	10.0	56.5	Off-white	8.3	Low foam, high coating speeds, excellent flexibility, excellent release from printed varnishes
Turbo-Seal C20177	No	Ammonia	75	10.0	57.5	Cream	8.3	Cohesive for paper and corrugated packaging self-seal, clean machining press application

*For full FDA information, contact your Bostik representative.

Benefits of Pressure Sensitive Water-Based Adhesives

Bostik's pressure sensitive water-based adhesives offer a range of benefits:



Featured Pressure Sensitive Water-Based Adhesives

Aquagrip® JB018

Resealable Packaging

Key Features

- Provides a smooth, quiet and magnetic-like peel
- FDA compliant for direct food contact applications*
- Repositionable

Aquagrip JB018 is a water-based pressure sensitive adhesive. This product is formulated to provide a repositionable seal with little diminishment in seal strength provided there is no contamination of the PSA. Aquagrip JB018 is also FDA compliant for use in direct food contact applications. Seal strengths will vary with specific coating, film treatment and processing.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	White
Odor	Sweet
pH	8.5
Solids (%)	60%
Viscosity	250 cP @ 77°F
Density	8.60 lb/gal

*For full FDA information, contact your Bostik representative.

Aquagrip JB763

Protective Film

Key Features

- Superior clarity
- High peel
- Good water resistance

Aquagrip JB763 is a general purpose, acrylic, pressure sensitive adhesive (PSA) suitable for use in clear label applications. This product can become removable when cross-linked. Aquagrip JB763 is formulated to provide excellent clarity, aggressive peel and tack, good water resistance and moderate shear resistance. It also has good adhesion to polypropylene and HDPE and is ready to be used in roll coaters and slot die coaters.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	White
Odor	Sweet
pH	7.1
Solids (%)	54%
Viscosity	500 cP @ 77°F
Density	8.60 lb/gal

Aquagrip JB722

Removable Protective Film

Key Features

- Superior clarity
- High peel
- Good water resistance

Aquagrip JB722 is a general purpose, acrylic, pressure sensitive adhesive (PSA) suitable for use in clear label applications. It is formulated to provide excellent clarity, aggressive peel and tack, good water resistance and moderate shear resistance. This product also has good adhesion to polypropylene and HDPE and is ready to be used in roll coaters and slot die coaters.



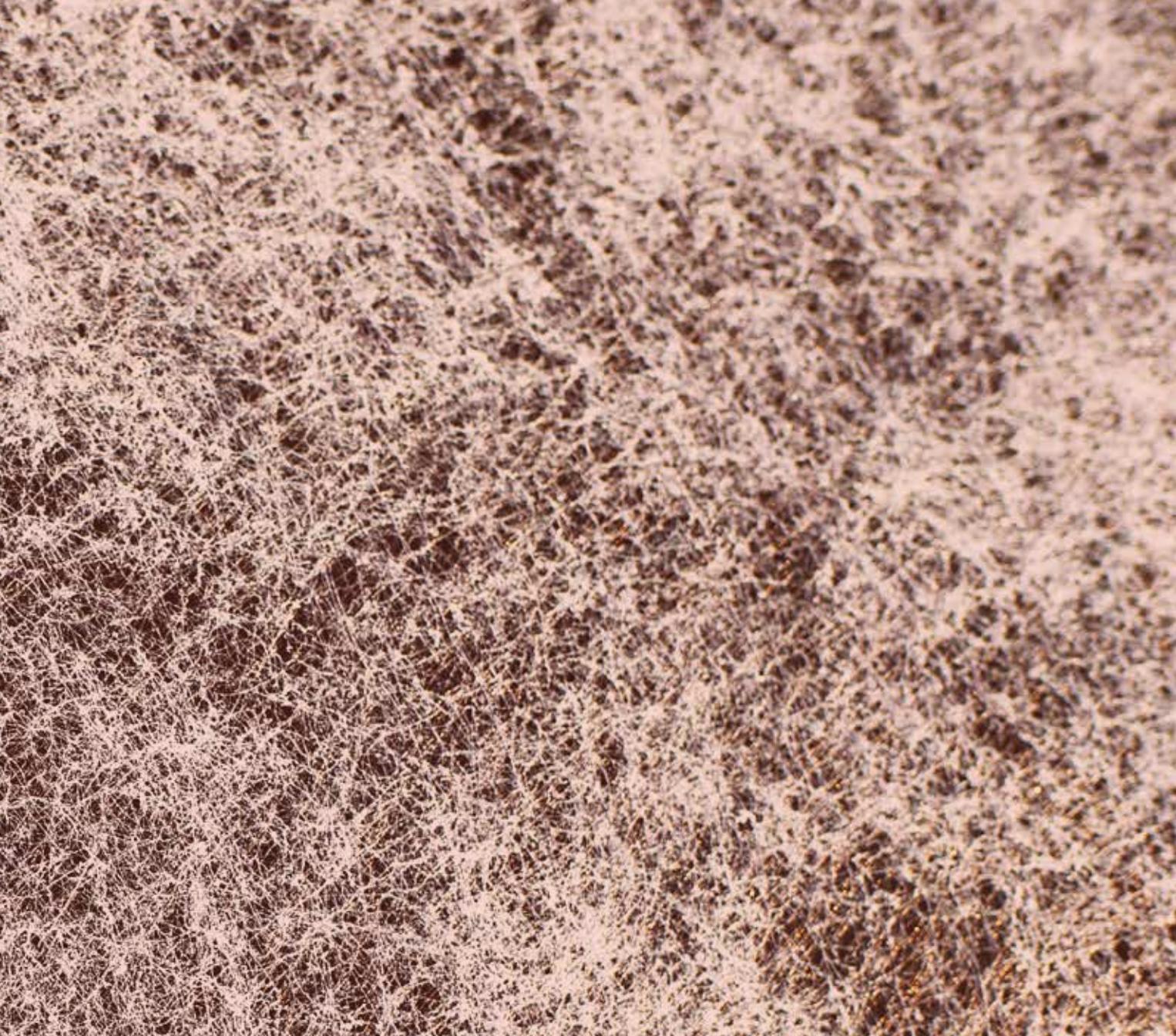
TYPICAL PHYSICAL PROPERTIES

Description	Results
Color	White
Odor	Sweet
pH	7.0
Solids (%)	55%
Viscosity	550 cP @ 77°F
Density	8.60 lb/gal

Pressure Sensitive Water-Based Adhesives

Product	Tack	Peel	Viscosity (cp) @ 77°F	pH	% Solids	Color	Density (lb/gal) @ 77°F	Product Features
Aquagrip JB722	Low	Moderate	550	7.0	55.0	White	8.6	Low peel strength, exhibits zippy peel
Aquagrip JBX0011	Low	Low	250	8.5	60.0	White	8.6	Resealable, good adhesion to polyolefin films, good cross-linking, indirect FDA approval*
Aquagrip JBX0012	Low	Moderate	50 - 300	8 - 9.5	57.6 - 60.0	White	8.6	Resealable, good adhesion to polyolefin films, good cross-linking, indirect FDA approval*
Aquagrip JBO18	Low	Low	250	8.5	60.0	White	8.6	Resealable, good adhesion to polyolefin films, good cross-linking, direct FDA approval*
Aquagrip JBO20	Low	Moderate	50 - 300	8 - 9.5	57.6 - 60.0	White	8.6	Resealable, good adhesion to polyolefin film, excellent self cross-linking, direct FDA approval*
Aquagrip JB753B	High	Moderate	1325	8.0	56.0	White	8.6	General purpose pressure sensitive adhesive, high tack and peel
Aquagrip JB763	High	Moderate	500	7.1	54.0	White	8.6	General purpose pressure sensitive adhesive, cross-linkable to make into a removable, high UV resistance

*For full FDA information, contact your Bostik representative.



WEB ADHESIVES

**Automotive Interiors | Composite Manufacturing | Furniture
Panel Formation | Seating | Textile Bonding and Laminating**

WEB

Web Adhesives

Bostik offers a unique family of web adhesives that provides many **advantages for customers and simplifies the use of adhesives** in their manufacturing processes.

What are Web Adhesives?

Webs are hot melt adhesives that have been converted into a non-woven that handles like a fabric. Polyamide, polyester and polyurethane polymers are used to produce a variety of web products. They can be made by a modified melt blown process for the standard web adhesives or through a modified blown film process to make Sharnet® web products.

Though the two manufacturing processes share some similarities, each is complemented by the other's unique formulation and performance features. The complete product mix makes Bostik one of the market leaders in web adhesive technology.



Standard Web Adhesives

- Made in a fine filament pattern that offers good textile hand and uniform adhesive coverage
- Basis weights range from 15 to 100 grams per square yard
- Standard width is 60 inches; however, custom widths are available from 10 to 75 inches.



Sharnet Web Adhesives

- Produced through a foam fibrillation method that creates a coarser pattern web
- Basis weights range from 12 to 60 grams per square yard
- Standard width for these webs is 60 inches, with custom widths available from 10 to 75 inches
- Polymer blends combine the properties of two or more polymer types as well as the addition of additives to achieve desired web characteristics.





Choosing the Right Web Adhesive

Select the correct base polymer

- The base polymers (polyesters, polyamides and polyurethanes or blended alloys) used in Bostik's web adhesives offer unique benefits for performance, handling time and manufacturing throughput.
- Bond performance is impacted by the base chemistry of the web.

Consider the melting temperatures or softening point

- Typical activation temperatures range from 170°F to 330°F.
- Thermoplastic adhesives cannot be subjected to applications where elevated temperatures might reactivate the adhesive.
- The base polymer chemistry impacts the softening and melting temperatures, which affect processing conditions.

Consider viscosity, solvent and water resistance

- Viscosity can affect bond performance of some multi-layer, specialty laminates.
- Water and solvent resistance will vary, depending on the base chemistry of the web.

Choosing the right basis weight

- The adhesive pattern and permeability vary depending on the web manufacturing process.
- Uniformity will influence bond consistency and certain performance-related ratios, such as bond strength-to-porosity.
- Higher basis weight web adhesives reduce the permeability of the bond.
- Lower basis weight web adhesives could result in bond failure.
- Determining the ideal basis weight requires consideration of the substrates being bonded, base chemistry of the web as well as the activation temperature and other processing requirements.

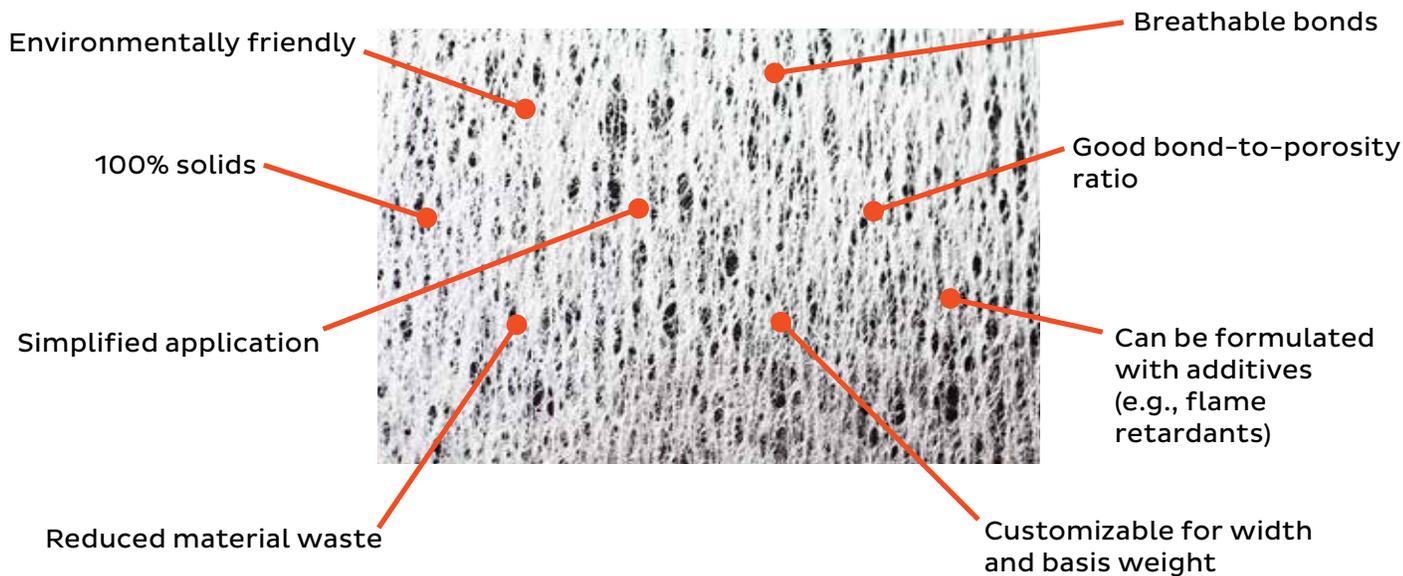
Flame retardancy

- Bostik offers flame retardant Sharnet web adhesives for applications where flame retardancy is a performance requirement.
- Flame retardant Sharnet web adhesives are available in a variety of basis weights and chemistries to achieve the best bond performance.

Benefits of Web Adhesives

Bostik's web adhesives are thin, heat-activated, fabric-like materials that vary in basis weight and polymer chemistry. The flexibility and versatility of the web adhesives accommodate

manufacturers' growing interest in new substrates and offer several advantages over other bonding options.



Featured Web Adhesives

SH4275FR-A

Flame Retardant Polyester Sharnet Web Adhesive

Key Features

- Moderate heat activation temperature
- Good flame retardancy
- Flexible adhesive bonding

SH4275FR-A is based upon a high-performance, polyester polymer that resists laundering and has good resistance to oils and plasticizers. The flame resistance of this product was designed for use in textile laminations where a flame retardant adhesive is required to assist other flame retardant substrates in producing a non-burning composite. SH4275FR-A bonds to a variety of textiles, urethane foams and plasticized vinyls.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Off White
Base	Polyester
Basis Weight Range	0.5-2.1 oz/yd ² (17-71 g/m ²)
Width	Up to 74 in (188 cm)
DSC Melt Point*	248°F (120°C)
Recommended Activation Temp	265-350°F (130-177°C)

* On base polymer

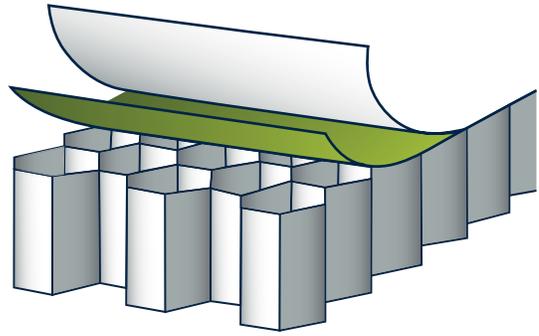
SPA145FR-A

Flame Retardant Polyamide Sharnet Web Adhesive

Key Features

- Manages adhesive usage versus liquids
- Excellent adhesion to a variety of substrates
- Superior flame retardancy

SPA145FR-A is based upon a high-performance, polyamide polymer that has good dry cleaning solvent resistance. The flame resistance of this product was designed for use in textile laminations where a flame retardant adhesive is required to assist other flame retardant substrates in producing a non-burning composite. SPA145FR-A bonds to a variety of textiles, urethane foams and plasticized vinyls.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	White to Off White
Base	Nylon Polyamide
Basis Weight Range	0.5-2.1 oz/yd ² (17-71 g/m ²)
Width	Up to 74 inches (188 cm)
SAFT Heat Resistance	284°F (140°C)
B&R Melt Point	289°F (143°C)
Min. Activation Temperature	302°F (150°C)
Recommended Activation Temp	320°F (160°C)

PE120

Polyester Web Adhesive

Key Features

- Moderate heat activation temperature
- Excellent adhesion to textiles and urethane foam
- Good temperature resistance

PE120 is a web adhesive based upon a high-performance, polyester polymer. The product resists repeated home launderings, bond to a wide variety of fabrics, foams and vinyls and has good resistance to oils and plasticizers.



TYPICAL PHYSICAL PROPERTIES

Description	Results
Appearance	Milky White
Base	Polyester
Basis Weight Range	15-100 g/yd ² (18-120g/m ²)
Width	Up to 75 in (190 cm)
DSC Melt Point*	248°F (120°C)
Density*	9.6 lbs/gal (1.15 g/cc)
Thermosel Viscosity*	125,000 cP @419°F (215°C)
Min. Activation Temperature	280°F (138°C)

* On Base Polymer

Selecting the Right Web Adhesive

Flame Retardant

Substrates

- Vinyls
- Urethanes
- Textiles or Fabrics
- Polyester Foams
- Leather
- Metal
- Wood

Green Grab

Standard

Excellent

SH4275FR-A

SPA145FR-A

Non-Flame Retardant

Substrates

- Vinyls
- Urethanes
- Textiles or Fabrics
- Polyester Foams
- Leather
- Metal
- Wood

Green Grab

Standard

Excellent

Heat Resistance

<170°F

<210°F

<250°F

<330°F

<220°F

<260°F

<285°F

PE75

PE103

PE120

PE165

PA145

SPA128

SPA110



Web Adhesive Substrate Guide

Product	Substrate Compatibility													
	Fabric	Leather	Urethane Foam	Wood	Metals	Aluminum	Fiberglass	Treated PP	PVC	ABS	PVDF	PEI	PEEK	Phenolic
PA115	●		●	●	●	●	●	●		●				●
PA145	●		●	●	●	●	●	●		●				●
PE75	●	●	●			●	●	●						●
PE85	●	●	●			●	●	●						●
PE103	●	●	●			●	●	●	●	●				●
PE120	●		●			●	●	●		●				●
PE165	●		●			●	●	●						●
PE170	●		●			●	●	●						●
SPA110	●	●	●	●	●	●	●	●	●	●				●
SPA111	●	●	●	●	●	●	●	●	●	●				●
SPA122	●	●	●	●	●	●	●	●	●	●				●
SPA128	●	●	●	●	●	●	●	●	●	●				●
SPE118V	●	●	●			●	●	●		●				●
SPU131	●	●	●	●	●	●	●	●	●	●				●
SH4275FR-A	●		●			●	●	●			●		●	●
SPA145FR-A	●	●	●	●	●	●	●	●	●	●	●	●	●	●

The chart above provides typical substrates with which Bostik's web adhesives have been used, but is not a guarantee of suitability. Bostik recommends evaluating the performance of a web adhesive in individual applications to ensure performance requirements are achieved.

Web Adhesive Products

Product		Base Polymer Type	Ball & Ring Melt Point (°C)	DSC Melt Point (°C)	Thermoset Viscosity (cp)	Minimum Dry Heat Activation Temperature (°C)	Elevated Temperature Resistance (°C)	Wash Resistance	Dry Clean Resistance	Product Features
Standard	PA115	Nylon polyamide	125	115	400,000 @ 180 °C	115	115	Fair	Excellent	Steam activatable, general purpose
	PA145	Nylon polyamide	151	145	250,000 @ 180 °C	141	140	Fair	Excellent	Steam activatable, high temperature resistance, good chemical resistance
	PE75	Polyester	90	82	160,000 @ 180 °C	85	75	Good	Poor	Low melt temperature
	PE85	Polyester	100	90	150,000 @ 180 °C	93	88	Excellent	Poor	Low melt temperature, good elongation
	PE103	Polyester	115	103	140,000 @ 180 °C	105	100	Excellent	Poor	General purpose
	PE120	Polyester	131	120	125,000 @ 215 °C	132	120	Excellent	Good	Good temperature resistance, general purpose
	PE165	Polyester	175	165	140,000 @ 215 °C	180	165	Excellent	Excellent	High temperature resistance
	PE170	Polyester	170	170	145,000 @ 215 °C	177	170	Excellent	Good	High temperature resistance
Sharnet	SPA110	Nylon polyamide	105	100	475,000 @ 180 °C	105	105	Fair	Excellent	Excellent adhesion, low activation temperature
	SPA111	Nylon polyamide/EVA	125	110	340,000 @ 180 °C	113	135	Good	Excellent	Higher heat resistance than SPA110
	SPA122	Nylon polyamide	128	113	350,000 @ 180 °C	113	121	Good	Excellent	Versatile, general purpose
	SPA128	Nylon polyamide	N/A	115	1,375,000 @ 180 °C	125	121	Good	Fair	Excellent green strength and adhesion, specialty adhesives for bonding to glass-filled polypropylene substrate
	SPE118V	Polyester	N/A	117	80,000 @ 215 °C	112	110	Excellent	Good	General purpose
	SPU131	Polyurethane	N/A	143	-	149	150	Excellent	Excellent	Excellent chemical resistance, flexible, can be cross-linked
	SH4275FR-A	Polyester	N/A	120	409,000 @ 210 °C	130	120	Excellent	Good	Flame retardant
	SPA145FR-A	Nylon polyamide	143	143	182,000 @ 210 °C	150	140	Fair	Excellent	Flame retardant, steam activatable



**Smart help:
1-800-726-7845**

Bostik, Inc.
11320 W. Watertown Plank Road | Wauwatosa, WI | 53226 | USA

an Arkema company
www.bostik.com/us

07.10.17
© 2017 Bostik, Inc. All rights reserved.