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:

Featured Hot Melt Polyurethane Adhesives

SG1578-164

Moisture Curing Hot Melt Polyurethane Adhesive

Key Features

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

SG1578-164 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. SG1578-164 also offers excellent chemical and 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%
Thermosel 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

SG9621

Moisture Curing Hot Melt Polyurethane Adhesive

Key Features

- Good green strength
- Low application temperature
- Quick setting

SG9621 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%
Thermosel 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

SGH0005-03A

Moisture Curing Hot Melt Polyurethane Adhesive

Key Features

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

SGH0005-03A 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 SGH0005-03A 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

Handling Window (Open Time)

Short <1 Minutes

Processing Speed (Green Strength)

- Good
  - SG9707*
- Excellent
  - SG1582-166*

Moderate 1-5 Minutes

Processing Speed (Green Strength)

- Good
  - SG9621*
- Excellent
  - SG1582-196*

Swirl Spray Application

Handling Window (Open Time)

Long 5-10 Minutes

Processing Speed (Green Strength)

- Good

Bond Elasticity

- Excellent
  - SGH0005-03A+
- Good
  - SG1582-082+

- Excellent
  - SG1578-164*+

Extended >10 Minutes

- SG9712OP+

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

Hot Melt Polyurethane Adhesive Products

Product	Appearance	Viscosity (cP)	Roll Coat	Bead Applied	Swirl Spray	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 Benefits
SG1578-164	Off-White Solid	15,000 @ 120°C	●	●	●	5 to 9	1050	830	193	110-120	Excellent green strength & quick tack, excellent creep resistance before cure, sprayable
SG1582-082	Off-White Solid	6,500 @ 120°C	●		●	>10	1500	860	206	110-120	Good green strength & aggressive tack, excellent chemical & water resistance, high heat resistance
SG1582-166	Off-White Solid	30,000 @ 120°C	●	●		<1	1750	1050	192	110-120	Excellent green strength & quick tack, excellent creep resistance before cure, short open time
SG1582-196	Off-White Solid	30,000 @ 120°C	●	●		1 to 3	570	1100	173	110-120	Very good low temperature flexibility, excellent green strength & quick tack, excellent creep resistance before cure
SG1827-160	Off-White Solid	15,000 @ 120°C	●	●	●	5 to 9	1050	830	193	110-120	Excellent green strength & quick tack, excellent creep resistance before cure, optical brightener for easy visualization
SG9621	Opaque, Off-White Solid	42,500 @ 100°C	●	●		2	3200	1550	185	110-120	Quick setting. good green strength, good chemical & water resistance, low application temperature
SG9707	Opaque, Off-White Solid	32,000 @ 100°C	●	●		<1	1250	1250	195	110-120	Quick setting, high cohesive strength, low application temperature
SG9712OP	Clear Solid	18,000 @ 100°C	●	●	●	10	350	350	180	110-120	Very long open time. strong initial tack & green strength, low application temperature, optical brightener
SGH0005-03A	Opaque, Off-White Solid	7,000 @ 120°C	●		●	4 to 7	1400	1400	195	110-120	Long open time, good green strength & quick tack, high bond elasticity
SGPURGE	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)