

Solutions for your application

During the melting process the humidity causes a vapor exceeding 100°C. Should a sufficient quantity of vapor develop, the adhesive will start to foam. This can be avoided by opening a single package at a time and by sealing the adhesive well after use. If a PA based adhesive absorbs too much humidity, it is possible to dry it at a temperature of 50 – 60°C. After the drying period, which usually occurs after 48 hours, the adhesive can be reused without any foaming.

Description

Softening Point: According to DIN 52011, it is a method of testing at which temperature hot melt adhesive changes from solid to liquid.

Heat Resistance: The highest temperature point in which a bonding withstands a shear load under defined conditions. According to WPS 68 heat resistance conditions are fixed at a load of 1 N/cm² (i.e. 100 g/cm²) and a temperature of one hour.

Viscosity: Hot melt adhesives are structural fluids whose apparent viscosity under working conditions corresponds to a great extent to their kinematic viscosity. The indicated viscosity figures are determined following DIN 53211 representing the thickness of the hot melt adhesives under normal working conditions. The higher the number, the thicker and more viscous are the hot melt adhesives.

Working Temperature: Optimal temperature, recommended in the working range of the hot melt.

Open Time: Time period beginning with the moment the adhesive is applied until the actual bonding occurs. The open time depends on heat transmittance and the temperature of the substrates, the quantity of hot melt applied and the application method. Experience shows that spray applications of hot melt adhesives reduce the open time by half.

Setting Time: Expressed in seconds, depending on insulating effect of materials to be bonded, the application method, and the kind of material. After completion of the setting time, stress can be applied to the bond.

Storage: Hot melt adhesives can be stored for at least 2 years if the original package is not damaged and ambient storage conditions prevail. Hot melt adhesives based on PUR according to their expiration date. Storage should be in a cool area. Heat and direct sun light should be avoided.

Operation Safety: Please adhere to operation instructions for the applicators! The molten adhesive and the nozzle of the applicator tool may reach temperatures in excess of 200°C. Caution: avoid accidental burns. Hot melt adhesives may develop unpleasant odors and steam, even when the recommended working temperature is kept. Especially for people with allergies, this can cause a stimulation of the mucous membrane. It is therefore recommended to have sufficient ventilation, especially when using bigger quantities of hot melt adhesive within confined spaces. This applies particularly to PUR hot melt adhesives.

Application Methods: The Bühnen laboratory is continually developing, testing and selecting new hot melt adhesives. We review HBB hot melt application equipment and techniques to offer the best solution to specific customer application, thereby utilizing the newest technical development.

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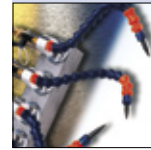
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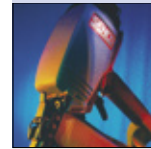
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Hot Melt Adhesives Program

Type Description 1.)										Especially suitable for: <input type="checkbox"/> suitable for:															Main applications	Sprayable 6.)																
Base Substrate 2.)	Form of Adhesive	Type	Color	Softening point/°C DIN 52011	Heat resistance/°C WPS 68 shearload 100g/cm ²	Good flexibility in cold term 3.)	Viscosity approx mPas at 180°C	Processing temperature/°C	Open time approx. sec.	Cure time approx. sec.	FDA / BGA 4.)	Wood, wood materials	Electronic materials	Courgated packaging	Foam materials	PUR foam	PP foam	Leather, shoes	Suede	Synthetic leather	Glass	Ceramics	Metal 5.)	Textiles	ABS	PVC	Acrylic glass (PAC)	Polyester (PETP)	Polycarbonate (PC)	Polystyrol (PS)	Polyethylene (PE)	Polypropylene (PP)	Polyamide (PA)		Sprayable 6.)	Type						
B	4, 5	0090.2	beige	110	65		600	160 – 180	90	90																											Concrete industry	0090.2				
A	1, 2, 3, 4	0158.1	white	95	60		10.000	170 – 190	50	40																												Universal in trade and industry, interior decoration	0158.1			
C	4	0339.2	yellow	185	145		300	190 – 200	3	2																											Knothole filler compound	0339.2				
A	2	0364	white	105	60		5.000	170 – 190	10	7																											Packaging industry, fast setting adhesives	0364				
C	2, 4	0460	yellow ^{7.)}	140	110		7.000	180 – 210	60	30																											Electronic industry, UL approved	0460				
B	1, 4, 5	0524	light brown	100	60		3.000	160 – 180	480	600																											Assembly aid, concrete industry	0524				
B	1, 4, 5	0715	light brown	126	70		2.000	180 – 190	120	120																												Assembly and permanent bonding in various industries, concrete industry	0715			
B	4	0857	white	155	90		10.000	180 – 200	130	180																												Automotive industry, good heat resistance	0857			
C	2, 4	0874	yellow ^{7.)}	158	135		8.000	180 – 210	15	10																												Electronic industry, casting of components, low temperature flexibility up to -35°C, UL-approved	0874			
E	7, 9	0931	white	64 ^{8.)}	165		13.000 ^{10.)}	130	240	420																													Automotive industry and building industry	0931		
B	1, 5	1052	yellow	130	60		2.500	150 – 180	2.500	240																													Foam and textile bonding	1052		
B	1, 4	1063	beige	145	80		3.800	180 – 200	90	120																													Assembly and permanent bonding, good heat resistance, elastic	1063		
C	4	1068	yellow	135	120		14.000	180 – 200	20	30																													Automotive and filter industries	1068		
E	7, 9	1075	white	77 ^{8.)}	160 ^{9.)}		18.000 ^{10.)}	140	60	120																														Automotive industry	1075	
B	5	1145	dark beige	155	110		10.000	180 – 210	30	30																													General purpose, excellent heat resistance	1145		
A	2, 3, 4	1289	transparent	93	60		15.000	160 – 190	25	30																													Universal for industry, household, hobby and floristics	1289		
A	1, 4	1301	yellow	90	55		9.000	180	50	45																													Timber industry	1301		
B	2, 4	1321	absolutely clear	90	60		10.000	170 – 190	40	70																													Clear transparent stick on PO-base for industry, hobby and PP-bonding	1321		
A	2, 4	1325	yellow	88	55		5.000	160 – 190	35	45																													Floristics industry, trade and industry	1325		
D	5	1341	yellow	135	75		10.000	160 – 180	unlimited	unlimited																													Excellent heat resistance and inherent bonding, automotive industry	1341		
C	4	1429.1	yellow	105	100		1.250	160 – 180	10	5																													Spacer for roof tile with anti-dirt coating	1429.1		
B	5	1435	white	140	75		12.000	170 – 190	50	120																													Packaging industry, licensed for direct contact with food	1435		
B	4	1472	white	106	55		700	140 – 180	10	5																													Packaging industry, nearly odourless, excellent oxidation stability	1472		
E	7, 9	1504	yellow	66 ^{8.)}	180 ^{9.)}		2.500 ^{10.)}	100 – 140	1.200	180																														Production of components in sandwich construction, assembly work in automotive industry, long open time and high initial stickiness	1504	
E	7, 9	1528	yellow	106 ^{8.)}	155 ^{9.)}		23.000 ^{10.)}	150 – 170	3.600	3.600																														High viscosity, high elasticity, especially suitable for sealing applications	1528	
A	4	1537	yellow	110	65		400	150 – 180	8	3																													Packaging industry, rapid setting adhesive in very fast machines	1537		
A	4	1543	yellow	115	60		600	150 – 180	10	10																													Packaging industry, fast setting adhesive	1543		
D	4	1544	transparent	97	55		1.000	120 – 180	unlimited	unlimited																														Low viscosity, insulation industry	1544	
A	4	1545	white	88	60		3.000	140 – 180	20	20																														Filter industry, construction industry	1545	
D	4	1546	yellow	95	50		1.900	120 – 180	1.800	600																														Foam and textile bonding	1546	
A	2, 3	1575	white	94	60		13.000	150 – 190	40	30																														Packaging industry	1575	
D	4, 5	1585	colorless, clear	85	40		1.300	140 – 180	unlimited	unlimited																														Removeable bonding	1585	
D	5	1586	yellow	102	55		8.600	150 – 170	unlimited	unlimited																														Insulation, upholstery and automotive industry	1586	
B	4, 5	1596	yellow	98	55		1.200	150 – 180	600	120																														Mattress industry, for bonding under stress	1596	
A	4	1602	yellow	113	55		500	150 – 180	20	10																														Packaging with difficult surfaces, deep-freeze packaging	1602	
B	7, 9	1611	yellow	145 ^{8.)}	180 ^{9.)}		4.000	180	120	60																															Reactive PO hot melt, bonding with untreated PP in automotive industry	1611
J	1, 2	1619	white	90	55		6.000	180 – 200	40	60																														Very wide range of adhesives, for difficult surfaces	1619	
D	4	1631	light yellow	100	50		3.500	160 – 180	unlimited	unlimited																														High adhesion, good UV resistance	1631	
E	7, 9	1649	white	70	180		3.500	100 – 120	480	240																															Automotive industry and building industry	1649
C	4	1669	yellow	170	110		150	195 – 210	8	3																														Sand core glueing in iron foundries	1669	

- 1.) The type description consists of one letter indicating the base substrate, the form of the adhesive and the type number
- 2.) A = Ethylvinylacetat (EVA), B = Polyolefin (PO), C = Polyamide (PA), D = Thermoplastic rubber (TK), pressure sensitive adhesives
- 3.) Flexible down to at least -20°C
- 4.) The raw materials used comply with the BGA- and FDA-regulations (175.105 or 121.2520) for packing of food
- 5.) We recommend to warm-up the metal surfaces
- 6.) These work with BÜHNEN-Spray-Melt-Systems
- 7.) Also available in black
- 8.) As supplied
- 9.) After finished reaction
- 10.) Working temperature

Subject to change!

Comments:
The advice and comments outlined in our data sheets and literature are made to the best of our knowledge. The contents, however, are without legal obligations. In order to ensure a satisfactory performance we recommend to conduct own tests and evaluations. The sale of the products are subject to our general terms and conditions.

Solutions for your application

Hot melt adhesives are solvent free, thermo-plastic, single component-adhesives. Heat changes their physical condition from solid to liquid. The molten adhesive is applied to the substrate; upon cooling the adhesive forms a strong bond. Hot melts are used in production for permanent or interim bonding applications, for protecting materials, as sealing applications, and as a filler.

Available Shapes

- 1 = Plug – approx. 42 mm, 50 mm length
- 2 = Stick – approx. 12,0 mm, 200 mm length
- 3 = Large stick – approx. 18,3 mm, 300 mm length
- 4 = Granulate / Pillow – loose
- 5 = Block – blocks of approx. 500 grams
- 7 = Cartridge – 47 mm, 215 mm length
- 9 = Drum – 2 – 200 kg

Applicators

- 1 = Plug – HB 700 series
- 2 = Stick – HB 180, HB 190, HB 220, HB 230 E
- 3 = Large stick – HB 300, HB 320
- 4 = Granulate / Pillow – HB 700 series, tank systems
- 5 = Block – tank systems
- 7 = Cartridge – HB 700 K series
- 9 = Barrel – PUR tank systems, drum unloader

Application

Generally it is recommended to keep the surfaces of products to be bonded free of dust, dirt, moisture, grease, oil and solvents. Experience has shown that hot melt adhesive can also be applied to surfaces that are not clean. Whether or not you can entirely refrain from cleaning the surface can only be determined by making trial bondings. At any rate, silicones are affecting the adhesion of the bonding. After applying the hot melt adhesive, the parts have to be assembled within the open time. Applying pressure during the assembly increases the final adhesion. BÜHNEN hot melt adhesives are water resistant. However, water and humidity may penetrate between the adhesive and the material, thereby making the bonding ineffective. Adhesives based on PA, slowly absorb humidity from the environment.