

## TECHNICAL DATA SHEET

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### Characteristics for conversion process & subsequent use

#### SB SM 2000 / SM 9000

Medium Performance lamination adhesives for flexible packaging. The new generation of Medium performance solvent based two-component polyurethane adhesive. These are manufactured in optimized production process. The special constituents of adhesives are matched precisely to the individual stages in the manufacturing process. The Medium performance in quality are to be found in areas such as the unique properties like Good Heat Resistance, High Bond Strength, Odourless and Good Chemical Resistance.

#### Field of application

**SM 2000 / SM 9000** is suitable for the lamination of Polyester, Polyethylene, Cellophane, BOPP, Aluminum foil and various types of paper.

**Typical end uses include soap wrappers and laminates for packaging liquids, spices, detergents and shampoos in control use**

#### F D A Status

**SB SM 2000 / SM 9000** is in compositional compliance with FDA § 21 CFR 175.105. The fully Cured adhesive complies with testing condition of BfR XXVIII. And the specific migration limits of plastic directive 2002/72/EC and amendment 2004/19/EC.

Product Specification	SM 2000	SM 9000
Solid content	80 +/- 2 %	75 +/- 2 %
Viscosity, Brookfield viscometer @ 30 degC	2000 – 5000 cps	1300-3000 cps
Specific gravity	1.18 ± 0.02 g/cm 3	1.14 ± 0.02 g/cm 3
Solvent	Ethyl Acetate	Ethyl Acetate
Colour & Clarity	Pale yellow, Clear	Pale yellow, Clear
Odour	Ethyl acetate & Odourless once dried	Ethyl acetate & Odourless once dried
Mixing ratio Parts by weight	100	16 For Metallized /Foil Film

**Processing:**

**SB SM 2000 / SM 9000** can be applied at a solid content of 30 - 45 %. Processing can be done out of the pan in gravure or with smooth roller system.

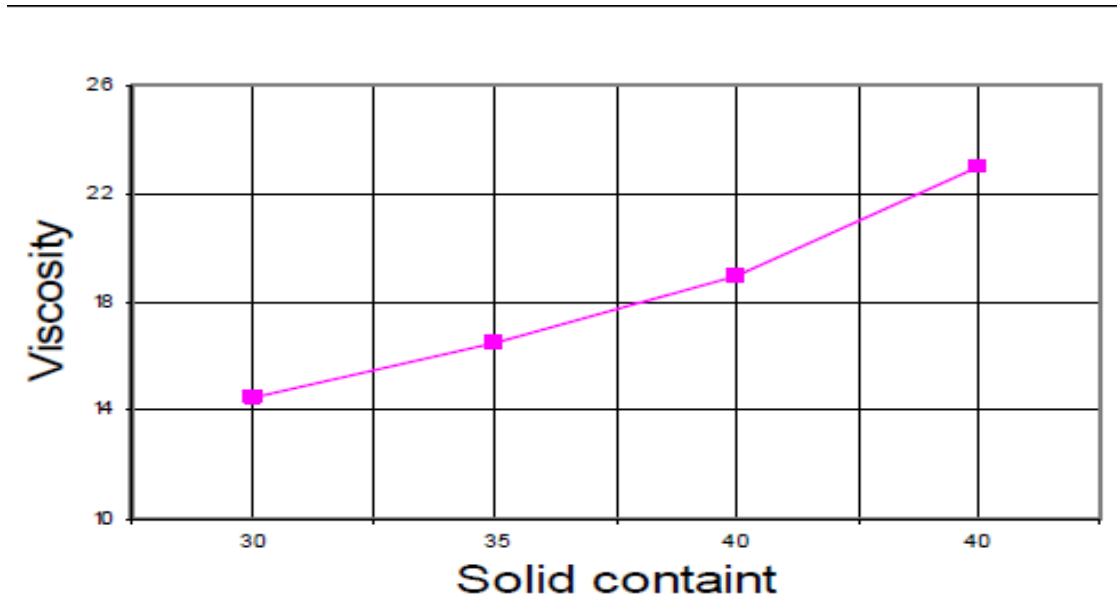
**Dilution:**

**SB SM 2000 / SM 9000:** can be diluted with Ethyl Acetate, Acetone, MEK with a max. Water content 0.1 %. Alcohol containing solvents must not be used. On dilution with Ethyl Acetate the following Viscosities result:

Solid Content %	SB SM 2000 kgs	SM 9000 kgs	Ethyl Acetate kgs	Viscosity in sec by FCB4 cup @ 30 Deg C	Viscosity in sec by ZHAN CUP # 3 @ 20 Deg C
30	100	16	190	14-15	14-15
35	100	16	147	16-17	15-16
40	100	16	114	18-20	16-18
45	100	16	89	21-23	18-20

Solid Content %	SB SM 2000 kgs	SM 9000 kgs	Ethyl Acetate kgs	Viscosity in sec by FCB4 cup @ 30 Deg C	Viscosity in sec by ZHAN CUP # 3 @ 20 Deg C
30	100	20	197	14-15	14-15
35	100	20	152	16-17	15-16
40	100	20	118	18-20	16-18
45	100	20	91	21-23	18-20

**Viscosity vs. Solid content: -**



**Deposit**

Ensure the coating weights must be uniform, continues and sufficient deposit of adhesives subject to the substrates are to be used. The following dry deposit is to be recommended.

Substrates	Recommended GSM
Un Printed or Lightly printed webs	2.0 - 2.5 GSM
Heavily Printed or Thicker webs	3.0 - 3.5 GSM
Porous substrates like paper, bord letheroid	4.5 - 8.0 GSM

**Cylinder Specifications**

Applied solid content of adhesive	Type	Lines per inch	Lines per cm	Cell depth
25 - 35 % solids	Electronically etched	150	60	45-55 microns
40 - 50 % solids	Electronically etched	180	70	35-45 microns

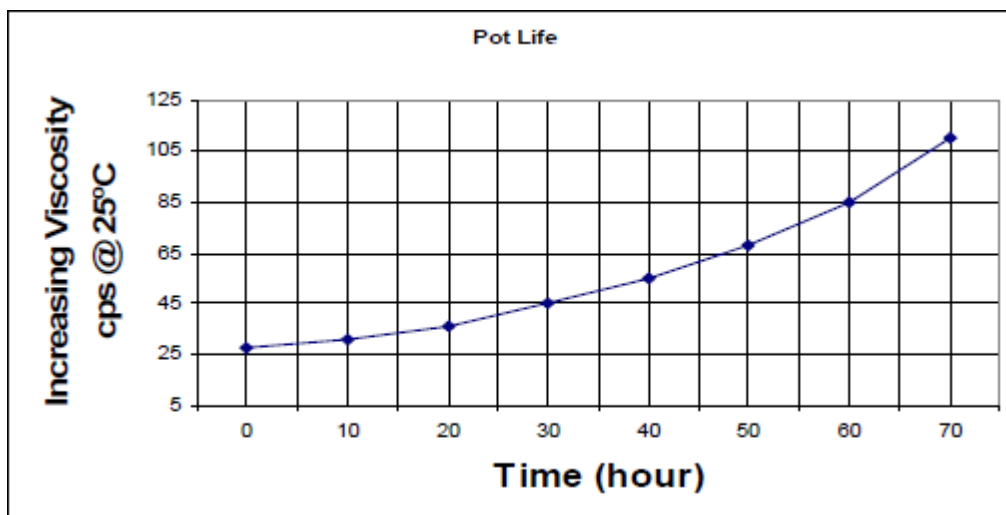
**Drying:** Drying has to remove solvents completely. Usually drying temperature of 60 -90°C are sufficient.

**NIP Temperature:** The NIP Steel roller temperature should be 70 - 75 °C

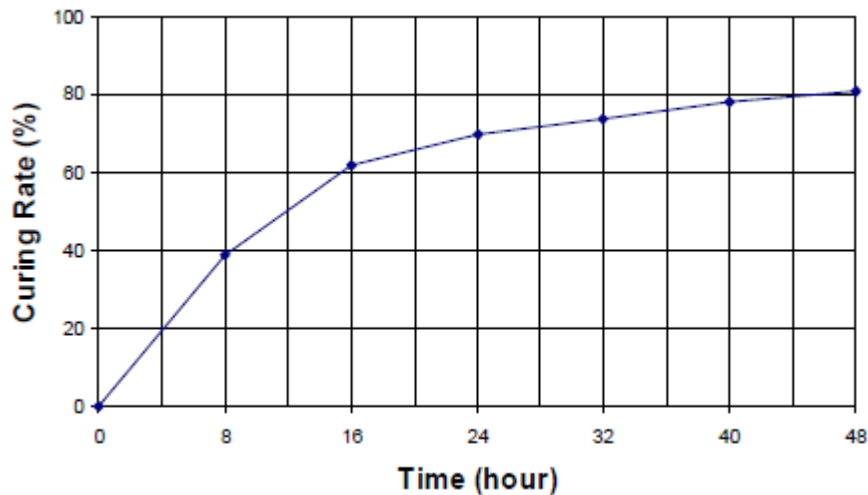
Pot life: Dynamic - Approx. 12 - 14 hours

Static - Approx. 24 hours

**40 % solid Mixed adhesive solution**



**Curing:** Manufacture of triplex laminates is possible as early as 12 to 14 hours after initial lamination. The laminates may be rewound and slit after 1 days. Complete curing i.e. total resistance to severe environments will be achieved after 7 to 14 days of storage at room temperature depending on film combination and end use of the laminates.



#### Cleaning:

After finished work the equipment should be cleared immediately with organic solvent.

#### Storage:

**SB SM 2000 / SM 9000** can be stored for at least nine months from the date of manufacturing at temperature of 0 - 25°C in closed original containers.

#### How supplied

SB SM 2000 – 25 Kg Ms drum and SM 9000 - 5Kg Tin container. An interaction between the adhesive and other constituents of the lamination structures like printing inks, films, film additive, Coatings, as well as with the packed product may occur besides the desired effects, this interaction may also lead to unforeseen changes in quality.

Therefore, before regular production, the suitability of the adhesive for the structures to be produced and the intended application must be proven by practice tests.