Pak-Fan Composite Sharif Co., Ltd.

PRODUCT TECHNICAL DATA SHEET

PakBond

Brake hot-cure adhesive

PakBond 550

DESCRIPTION

PakBond 550 is a hot-cure adhesive to bind resin-based composite friction materials to metallic back-plates, particularly steel, during compression molding process. This product provides sufficient adhesion under room and high temperature service conditions.

GENERAL FEATURE

PakBond 550 is a solution of phenolic resin in methanol/ethanol with suitable adhesion promoter, specifically designed as adhesive for brake pads. It is a dark brown solution with medium viscosity which is suitable for various application methods such as brushing, rolling, dipping and spraying.

APPLICATIONS

PakBond 550 is suggested to be used as binding adhesive in brake pads with various types of friction compositions such as semi-metallic, low steel, NAO and ceramic formulations.

PROPERTIES

Property	Value	Unit	Method/Condition
Solid content	**~ 60**	%	
Viscosity	**600-800**	mPa.s	
Specific gravity	**~1**	g/cm^3	
Flash point	**~ 13**	℃	

PRETREATMENT

To obtain the maximum efficiency of **PakBond 550** adhesive with metallic back plate, particularly with steel, the surface of the back plates must be properly pretreated by degreasing, shot-blasting and solvent washing until to reach a clean surface. Otherwise, the desired adhesion strength does not reach.

DILUTION

To apply the adhesive by techniques like spraying, **PakBond 550** should be diluted sufficiently using suitable solvents. Both dry ethanol and methanol are recommended for dilution, but methanol has priority as this solvent provides the primary solvent of **PakBond 550**. The following guideline may be useful for dilution of **PakBond 550**. If 10 kg of **PakBond 550** is mixed with 2 kg of methanol, the solid content would be ~50% and its viscosity be 100 mPa. If 10 kg of **PakBond 550** is mixed with 5 kg methanol the solid content becomes 40% and the viscosity reduces to 20 mPa.s. By addition of 10 kg methanol to 10 kg **PakBond 550**, the solid content would be 30% and the viscosity reaches to 5 mPa. For applying the

adhesive by using spraying, it is recommended to evaluate the dilution of **PakBond 550** with solid contents ranging between 25 -35 wt%.

APPLYING AND DRYING

PakBond 550 should be applied on back plates previously subjected to pretreatment procedure mentioned above. After applying **PakBond 550** on back plates, they should be left in room temperature with good ventilation for at least 3 hours to get fully dried adhesive coated on the metallic back plates. Drying at higher temperatures can also be carried out, but the temperature should not be higher than 60 ℃ and dry time at such temperature should not be higher than 30 min. Drying should not lead to voids and defects inside the dried coated adhesive. The recommended amount of adhesive at completely dried state should be at least 200 g/m^2 with a thickness of more than 150 μm. The dried coated back plates can be immediately used for bonding with friction materials, or even can be stored, preferably at room temperature and dry conditions, for several days before bonding.

CURING

Back plates coated with suitable amount of adhesive and after fully drying can be bonded with friction materials in compression molding technique using either positive or flash molds. To get fully cured adhesive, the molding temperature can be set between 125-160 ℃, molding pressure at 1-15 MPa and the molding time between 5-10 min.

STORAGE, SAFETY AND PRECAUSIONS

PakBond 550 should be stored at temperatures between 5-25 ℃ in original unopened containers. Higher temperatures will reduce the shelf life. The expiry date of the product, under the storage conditions recommended, is given on the product label. Storage of opened containers for longer time should be avoided. **PakBond 550** should be kept away from the direct contact with skin, eyes and other parts of human bodies. In the case of contact with bodies, they should be rinsed with warm water and soap. Moreover, **PakBond 550** should not be swallowed and be kept away from the contact with foodstuffs. The adhesive containers should be carried with care without vibrating and shooting. To avoid possible firing and explosion, the adhesive container should be kept in cool places and be away from contact with flame and sparks.

TERMS AND CONDITIONS OF USE

The information and data presented in this technical data sheet have been validated by laboratory and practical tests and are believed to be accurate and reliable. Nevertheless, the customers shall remain responsible for satisfying themselves that **PakBond 550** hot-cure adhesive manufactured by Pak-Fan Composite Sharif Co. is acceptable for their intended processes and purposes. We warrant that **PakBond 550** adhesive is free from defects in accordance with and subject to our general conditions of supply.