QINGDAO SANHUAN COLORCHEM CO., LTD.

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TECHNICAL DATA SHEET

Polyvinyl Butyral (PVB) Resin

- **Characteristics:** PVB resins can be divided into different levels according to their molecular weight and degree of acetalization.

High Butyral and Low Viscosity PVB Resin

Indicator	Volatile content	Non volatile content	Butyral content	Acetate content	Hydroxyl Content	10% viscosity	Free acid
Unit	Wt-%	Wt-%	Wt-%	Wt-%	Wt-%	Mpa,s	MgKOH/g
SHM-01	≤2.0	⩾98.0	76-85	⩽3.0	12-17	160-260	⩽0.5

- **Recommended Uses:**

1) Coating adhesive (increase adhesivity, anticorrosive/shop primer, baked enamel, wash primer, paint and coating, used for various base;
2) Ink adhesive;
3) The whiteboard ink adhesive;
4) Textile printing and non-woven adhesive;
5) Engineering ceramic and other ceramics;
6) Organic pigment wetting agent.

- **Product appearance:** Tiny, free-flowing white powder.

- **PVB resin meet the following regulations regarding food contact plastic material:**

1) The REGULATION (EC) No 1935/2004 – Article 3.1;
2) COMMISSION REGULATION (EU) No 10/2011 on plastic materials and articles intended to come into contact with food;
3) The United States food and drug administration's 21 CFR § 175.105 adhesive, 21 CFR § 175.300

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resin and polymer coating, 21 CFR § 176.170 paper composition and paper board contact with water and high fat food.

- **Product's main characteristics:**

1. Low viscosity PVB resin that is suitable for flexo and gravure printing, has good adhesion to polyolefins, metal, cellulose acetate, polyester, cellophane paper, polyamide and polystyrene film;
2. Low viscosity PVB resin as the foundation of the printing ink shows a low solvent resistance, good liquidity, good waterproof, which could be independently used as the basic resin, and could be used together with alcohol soluble nitrocellulose, acetone condensation resin, alkyd resin, maleic resin and other natural polymer;
3. Suggested quantity added to:10-15% for SHM-01
4. Dissolve under normal temperature (25 ℃), the dissolution time is 30 minutes or less, this characteristic has greatly increased the ink's solubility;
5. Low viscosity PVB resin has good wettability and pigment dispersion;
6. Non-toxic, tasteless, odorless, no aromatic element, no heavy metal, no plasticizer, is the first choice of resin for environment friendly printing ink.

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•Solvent selection：

		High Butyral and Low Viscosity PVB Resin
Alcohol	methyl alcohol	√
	ethyl alcohol	√
	propyl alcohol	√
	butyl alcohol	√
	isobutyl alcohol	√
	diacetone alcohol	√
	ketone alcohol	√
	benzyl alcohol	√
Ethers	Dipropylene Glycol butyl ether	√
	1,2-Propylene Glycol 1-Monomethyl Ether	√
Lipid	ethyl acetate	√
	methyl ethyl ketone	√
	3-Methoxybutyl acetate	√
	DBE DIBASIC ESTER	√
	Butyl glycolate	
Ketone	acetone	√
	butanone	√
	methyl ethyl ketone	√
	MIBK	√
	cyclohexanone	√

•Solvent preparation:

1) Low viscosity PVB resin can be dissolved in a variety of organic solvent and mixed solvent, alcohol is the best solvent, esters and ketones are inferior solvent comparing with alcohol, aliphatic hydrocarbon and aromatic hydrocarbon solvents are insoluble, but they can be used as diluents together with alcohol solvent;

2) Solution: lunch agitator stirring solution in slow or medium speed, under room temperature proportionally and slowly add PVB powder, could increase the stirring speed after solution wetting;

3) Viscosity of solution, decomposition velocity depend on the type, temperature and stirring speed of the solution;

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4) Low viscosity PVB resin can be processed and used by the general equipment of printing ink and paint industry.

- **Storage:** Under a dry and cool (25 ℃ or less) condition, the product can be stored for at least 12 months if sealed in original packaging.
- **Preventive measures:** during the operation process of dissolving, appropriate take safety measures, and prevent electrostatic.
- **Waste disposal** (See MSDS)
- **Industrial Safety and Environmental Protection** (see MSDS)