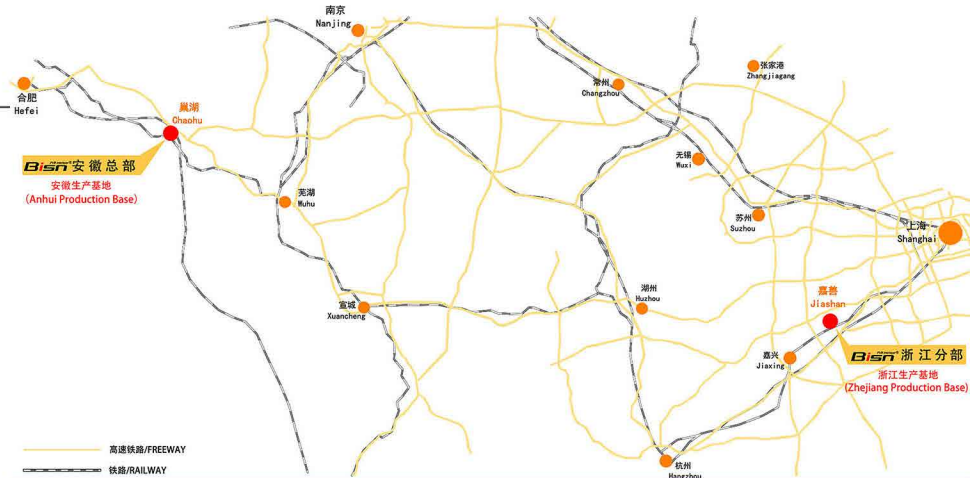


# 皖维 佰盛

**Bisn** PVB Interlayer® PVB

VAC - PVA - PVB Resin - PVB Interlayer Film



安徽皖维佰盛新材料有限责任公司  
Anhui WanWei Bisheng Co., Ltd.  
安徽生产基地 (Anhui Production Base)  
地址(Add): 安徽省巢湖市皖维路56号  
No. 56, WanWei Road, Chaohu City, Anhui, China

安徽皖维佰盛新材料有限责任公司嘉善分公司  
Anhui WanWei Bisheng Co., Ltd.(Jiashan Branch)  
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主板上市

Stock Code : 600063

### 皖维集团

皖维集团是一家横跨化工、化纤、新材料三大产业的联合企业，综合实力处于国内PVA行业前列。集团下辖安徽皖维新材料股份有限公司等6家子公司。其中安徽皖维新材料股份有限公司于1997年5月在上海证券交易所上市（股票名称为“皖维高新”，代码为“600063”）。主产品PVA（聚乙烯醇）年产能35万吨，多年居全国之首。国内市场占有率超过30%，连续6年占国内出口总量70%以上。集团技术力量雄厚，拥有国内PVA行业第一家国家级企业技术中心，各项技术专利超过80项。（[www.wwgf.com.cn](http://www.wwgf.com.cn)）

### WanWei Group

WanWei Group is engaged in chemical, chemical fiber, new material industries etc.. The comprehensive strength is in the forefront of Chinese PVA industry. WanWei Group has 6 subsidiaries, including Anhui WanWei Updated High-Tech Material Industry Co., Ltd., which is listed on Shanghai Stock Exchange in May, 1997 (Name shorten as "WanWei High-Tech", Stock Code "600063"). WanWei Group is the biggest PVA manufacturer in China. The annual production capacity of PVA is 350,000 tons, with more than 30% domestic shares & more than 70% of Chinese exports for 6 continuous years. With strong technical support, WanWei Group has the first National-Level enterprise technology center in China and more than 80 technology patents. ([www.wwgf.com.cn](http://www.wwgf.com.cn))

矢志打造行业世界一流企业

PVA



### 皖维PVB树脂

聚乙烯醇缩丁醛树脂（PVB树脂）是由PVA与正丁醛缩合反应而成的合成树脂，广泛应用于玻璃中间膜、绝缘漆、油墨和染料等领域。皖维集团作为国内最大的PVA生产商，年产PVA35万吨。为进一步延伸产业链，集团于2011年投产胶黏级PVB树脂，年产量2000吨。并于2013年投产了胶片级PVB树脂，年产量达到20000吨。得益于质量可靠、质量稳定的PVA原料，以及和强大的化工人才技术支撑，皖维PVB树脂自投放市场以来，客户反映良好，需求量增长迅猛，市场占有率稳步提升。

### WanWei PVB Resin

Polyvinyl Butyral Resin (PVB Resin) is synthetic resin made from PVA & Butyral Dehyde, which is widely used in laminated glass interlayer, insulation paint, ink and dyes industry etc,. WanWei Group is the largest PVA manufacturer in China, with annual output of 350,000.00 tons. In order to further extend the downstream supply chain, in 2011 & 2013, WanWei Group respectively invested production of adhesive-grade PVB resin (2,000.00 tons/year), and PVB film-grade PVB resin(20,000.00 tons/year). By advantages of reliable and stable good quality PVA as raw material, as well as WanWei Group’s strong technical talents team as technical support, once being launched into market, the clients’ feed-back is positive, with strong growth in demand. The market share of WanWei PVB Resin increases steadily.

### 技术参数和物理特性

#### Technical Parameters & Physical Properties

项目 Item	技术指标 Technical index
外观 Appearance	白色均匀粉末 White evenly powder
挥发份 Volatile	≤2.5%
醛基含量 Aldehyde content	17%-21%
熔融指数 Melt index	0.5-3.0g/10min
粘度 Viscosity	180-320mpa.s
雾度 Haze	≤0.6%
透光率 Light transmittance	≥88%
堆积密度 Stacking density	0.12-0.25g/mL



### 胶片级PVB树脂

聚乙烯醇缩丁醛是以PVA和正丁醛为原料，在催化剂作用下缩合反应而生成的高分子聚合物。本产品的化学名称为聚乙烯醇缩丁醛树脂，英文缩写为PVB。它具有高度的透明性、良好的耐光性、耐寒性、耐水性、成膜性和抗冲击性能。用PVB胶片制成的复合玻璃能吸收冲击能量，不产生破碎片。这种安全玻璃广泛应用于汽车、高层建筑、银行柜台以及各种防弹玻璃等。在具有安全性能的同时，还有优异的隔音、光控、保温、隔热、防震等性能，是理想的安全玻璃复合材料。

### PVB Interlayer-Grade Resin

Polyvinyl Butyral (PVB Resin) is a kind of polymers, under condensation reaction and using Hydrochloric Acid as Catalyst, made from Polyvinyl Alcohol and Butyl Aldehyde. The chemical name is Polyvinyl Butyral Resin, abbreviated as PVB Resin. PVB Resin is with high transparency, good light resistance, good cold resistance, water resistance, film forming properties and impact resistance etc. The laminated safety glass made by PVB film can absorb impact energy, without broken pieces. This kind of safety glass is widely used in automobiles, high-rise building, bank counter and all types of bulletproof glass. While with safety properties, PVB interlayer films are also with excellent acoustics, light control, warm keeping, thermal insulation, and shockproof performance, which is the ideal composite materials for laminated safety glass.





## 公司简介

安徽皖维丽盛新材料有限责任公司(以下简称“皖维丽盛”)是由安徽皖维集团与浙江丽盛塑胶有限公司共同发起成立,注册资金1.2亿元人民币。公司分别在安徽和浙江设有PVB中间膜生产基地。安徽生产基地位于安徽省巢湖市,毗邻省会合肥;浙江生产基地位于浙江省嘉善县,毗邻上海。交通便利,运输发达。

得益于皖维集团的强大支持,皖维丽盛是国内第一家涵盖VAC - PVA - PVB树脂 - PVB中间膜完整产业链的企业。主要原材料均由皖维集团生产,内部精准控制,确保了终端产品的稳定性和一致性。PVB生产线设备从德国、美国、加拿大等国家进口,并配有在线瑕疵检测系统。车间按恒湿、恒温和无尘防静电化处理标准设计,并配有万级洁净系统。先进的生产、检测设备,整洁的操作环境,确保了皖维丽盛PVB胶片品质优良,长期稳定。至2017年底,公司共建成4条PVB中间膜生产线,年生产PVB中间膜2万吨。产品最大宽幅为3800mm,厚度为0.38mm到1.52mm。

公司坚持诚信为本、合作共赢的立企宗旨,立志打造行业一流的PVB中间膜精品,以一流的品质、一流的服务和一流的理念,真诚与广大国内外客户和社会各界人士通力合作,携手并进,共创美好未来!

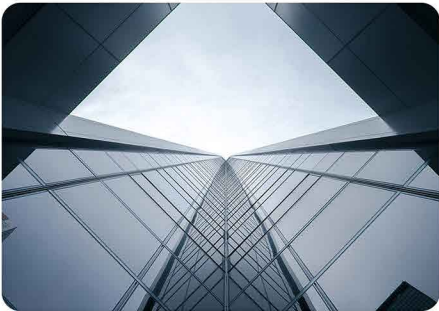
## Company Introduction

Anhui WanWei Bisheng Co., Ltd. (shorten as BISHN) is jointly established by Anhui WanWei Group & Zhejiang Bisheng Plastics Co., Ltd.. The registered capital is 120 million RMB, with 2 PVB film production bases separately in CHAOHU & JIASHAN city. Chaochu production base is close to Hefei City (the capital of Anhui Province). Jiashan production base is close to Shanghai City. The transportation is very convenient and developed.

Relaying on WanWei Group's strong support, Bishn is the first Chinese PVB manufacturer with complete supply chain covering VAC - PVA - PVB Resin - PVB film. All raw material are produced by ourselves, namely WanWei Group. With self-production & internal control, Bishn PVB film are guaranteed with clean, stable upstream raw material.

The production line are imported from Germany, U.S.A, Canada etc., with on-line contamination inspection system. The production workshop are designed to achieve constant humidity, constant temperature and anti-static dust-free condition, with 10,000.00 grade air-shower system. With advanced production & inspection equipment, and clean processing environment, Bishn PVB film is with excellent & stable quality. Till the end of 2017, there are 4 PVB film production lines, and the annual production capacity is 20,000.00 tons.





Introduction of product

PVB film is a translucent or opaque film, the plasticized polyvinyl butyral resin by a polymer material plasticizing agent extrusion molding. The appearance of translucent or opaque film, no impurities, smooth surface, there is a certain roughness and good softness, cohesion, good for inorganic glass is transparent, heat resistance, cold resistant, moisture resistance, mechanical strength and other characteristics, is the current world production of laminated safety glass, the best bonding material, at the same time in the construction curtain wall, window, move the tent, bank counter, prison window, has a wide application in the steelmaking furnace and various screen bulletproof glass and other construction areas.

BISN AUTOMOTIVE PVB

BISN ARCHITECTURAL PVB

产品概述

PVB中间膜是半透明或者不透明的薄膜，由聚乙烯醇缩丁醛树脂经增塑剂塑化挤压成型的一种高分子材料。外观为半透明或者不透明薄膜，无杂质，表面平整，有一定的粗糙度和良好的柔软性，对无机玻璃有很好的粘接力、具有透明、耐热、耐寒、耐湿、机械强度高等特性，是当前世界上制造夹层、安全玻璃用的最佳粘合材料，同时在建筑幕墙、招翠棚、橱窗、银行柜台、监狱探视窗、炼钢炉屏幕及各种防弹玻璃等建筑领域也有广泛的应用。



产品规格 Product Specification

建筑级 Architectural PVB

Thickness 厚度	0.38 mm	0.76 mm	1.14 mm	1.52 mm
Length 长度	440 m	240 m	150 m	120 m
MaxiumWidth 最大宽度	3800 mm			

Customized Size Available



透明 Clear



乳白 Milky White



绿带 Green Band



蓝带 Blue Band

汽车级 Automotive PVB

Thickness 厚度	0.76 mm
Length 长度	240 m
MaxiumWidth / Color Band 最大宽度 / 色带最大宽度	2500 mm / 450mm

Customized Size Available



F绿 F-Green



F绿绿带  
Green Band / F-Green



F绿蓝带  
Blue Band / F-Green

技术参数和物理特性/Technical Parameters & Physical Properties

厚度偏差 / Deviation of thickness (mm)	0.38±0.02 mm	0.76±0.02 mm	1.14±0.02 mm	1.52±0.03 mm
长度偏差 / Deviation of width (mm)	≤ 50 mm			
宽度偏差 / Deviation of length (mm)	≤ 20 mm			
粗糙度 / Roughness (μm)	≤ 15 μm	≤ 22 μm	≤ 30 μm	≤ 40 μm
密度 / Density (g/m³)	1.069 g/m³			
拉伸强度 / Tensile strength (MPa)	≥ 20.0 MPa			
断裂伸长率 / Elongation of peak (%)	≥ 200 %			
收缩率 / Ration of shrinkage (%)	≤ 12 %			
含水率 / Moisture (%)	0.35 % ~ 0.55 %			
透射比 / Light transmittance (%)	≥ 88.5 %			
雾度 / Haze (%)	≤ 0.6 %	≤ 0.7 %	≤ 0.8 %	≤ 1.0 %
黄色指数 / Yellowish (%)	≤ 8 %			



PVA - PVB 树脂 - PVB胶片, 整个生产链均封闭储存, 由管道真空传输至下一道生产线, 确保原料干净无污染。  
The entire production chain (covering PVA - PVB Resin - PVB film) are with closed storage, transferred to downstream production by vacuum system, making sure the upstream raw material are clean, avoiding any contamination possibility.

智能中央控制室, 7×24小时无间断实时监控生产。  
Central control room, 7 × 24 hours all-around-the-clock supervising production.

挤出模头、水分/厚度检测仪、在线瑕疵检测系统、自动收卷机等核心生产设备全部从欧美进口。  
Core production machine (Extrusion Die, Humidity/Thickness Scanner, On-line impurity detection system, full Automatic Rolling System etc.) are imported from Germany, U.S.A, Canada etc.,.



万级洁净系统, 配备行业领先的在线瑕疵检测系统, 严格控制问题产品。  
10,000 Grade air shower system, with advanced on-line impurity detection, strictly control the quality.

所有车间人员均着连体戴帽防护服, 在起到保护作用的同时, 也保持洁净的生产环境。  
All workers wear protective coveralls, safety, keeping cleaning production environment.

全自动高速收卷机, 避免人工收卷二次污染。保证生产效率的同时, 产品品质更优。  
Full Automatic Rolling Machine, with high efficiency of production, short Delivery Time to customer.



吸料  
PVB Resin  
+  
Plasticizer(3G8)

挤出/厚度控制  
Extrusion / Thickness  
Control

水分控制  
Humidity Control

在线水分/厚度检测  
On-line Humidity / Thickness  
Checking System

在线瑕疵检测  
On-line Impurity  
Checking System

裁切  
Cutting

收卷  
Rolling



● 拉伸测试 Tensile Breaking Test



● 雾度、透光率测试 Light Transmittance Testing & Haze Test



● 落球测试 Ball Drop Test



● 耐老化测试 Durability Test

## 产品检测与质量控制 Testing & Quality Control

皖维丽盛拥有PVB行业领先的检测实验室，拥有完整的实验检测仪器，包含冷冻敲击，水煮，耐辐照、抗冲击、防弹等实验项目和设备。所有订单严格按中国及欧洲质量标准测试，如EN 14449:2005 (E), ANSI Z97.1, ECE R43, EN 12543-4, EN 12600, EN 365, EN 1069 等。我司配有实验室级建筑、汽车夹层玻璃生产线(平压、热抽真空)，模拟终端客户玻璃深加工工厂操作流程，以更好地测试产品质量。我司售后服务工程师来自于姐妹公司(玻璃深加工工厂)，拥有多年实际夹胶经验，能及时独立或协助客户解决相关技术问题。皖维丽盛PVB中间膜已通过中国CCC以及欧洲TUV认证。

Bisn has the complete testing laboratory, which is leading in PVB industry, equipped with advanced testing machines, including frozen pummel, boiling, radiation resistance, impact resistance, bulletproof testing etc., All orders are strictly produced according to Chinese & European quality standard, such as EN 14449:2005 (E), ANSI Z97.1, ECE R43, EN 12543-4, EN 12600, EN 365, EN 1069 etc.,

Bisn is equipped with lab-grade building & automobile glass lamination line (flat pre-pressing and hot-vacuum), simulating the operation process of final users, so as to better test the quality of Bisn PVB film.

After-sale engineer is from sister company (glass processing factory), with many years lamination experience, timely helping customers to solve technical problems.

The laminated glass made by Bisn PVB film have been certified by Chinese CCC & TUV of Germany. The testing certificates can be sent to customers if any inquiry.



● 水煮测试 Water Boiling Test

## 生产和产品认证 Product Quality Certificates





