

WELLGO



上海威固化工制品有限公司

Shanghai Wellgo Chemical Products Co., Ltd.

Tel: 021-60710415

Email: info@wellgo.com.cn

中国上海浦东合庆工业区东胜路488号

488 Dongsheng Rd., Heqing Industrial Zone, Pudong, Shanghai, China

WELLGO



动力及储能电池PACK用胶解决方案

**POWER AND ENERGY STORAGE BATTERIES
PLASTIC SOLUTION FOR PACK**

wellgo.com.cn



为客户提供全方位系统解决方案
WE ARE TOTAL SYSTEM SOLUTION PROVIDER

CONTENTS

01

公司介绍 COMPANY INTRODUCTION

关于公司 About The Company	02
发展历史 Development History	02
核心业务 Core Businesses	03
技术创新与分析平台 Technology Innovation and Analysis Platform	04
产品定制化服务 Product Customization Service	05
相关荣誉 Honors	06
相关认证 Certifications	06
部分合作客户 Cooperative Customers	06

02

动力及储能电池对胶粘剂的需求 DEMAND FOR ADHESIVES IN POWER AND ENERGY STORAGE BATTERIES

新能源电池包封装结构的演变 The Evolution of New Energy Battery Pack Packaging Structure	08
需求变化引领胶粘剂发展 Demand Changes Lead The Development of Adhesives	08
储能电池对胶粘剂的需求 Energy Storage Battery Demand For Adhesives	09
动力电池与储能电池对比 Comparison Between Power Batteries And Energy Storage Batteries	10

03

动力及储能电池用胶解决方案 ADHESIVE SOLUTIONS FOR POWER AND ENERGY STORAGE BATTERIES

热管理用胶解决方案 Adhesive Solutions for Thermal Management	12
轻量化用胶解决方案 Adhesive Solutions for Lightweight	17
密封用胶解决方案 Adhesive Solutions for Sealing	20



COMPANY INTRODUCTION

公司介绍

About Company

关于我们

德国“WELLGO威固”品牌的母公司HAGO公司创立于1969年,其总部位于德国慕尼黑。

1994年,其创始人Bernhard Frey在上海设立办事处并建研发生产基地。1996年,中国第一支符合德国标准的聚氨酯发泡胶粘剂在上海浦东诞生!这一产品的诞生也标志着威固为中国的门窗密封行业提供了从硬连接到软连接的革命性解决方案。威固专注于建筑及工业提供全面解决方案,产品线涵盖高质量的密封胶和胶粘剂,包括建筑密封防水、建筑门窗节能低碳、锂电池轻量化及热管理、汽车密封粘接、电子电器等。历经半世纪发展,威固积累了丰富的行业经验,参与制定多项行业标准,展现领导地位。

时至今日,威固在上海和山东拥有超7万平米生产基地,引进欧洲全自动生产线,秉承德国工匠精神,不断创新,致力成为中国建筑及工业发展的标杆,为绿色低碳事业及汽车工业提供全方位系统解决方案。

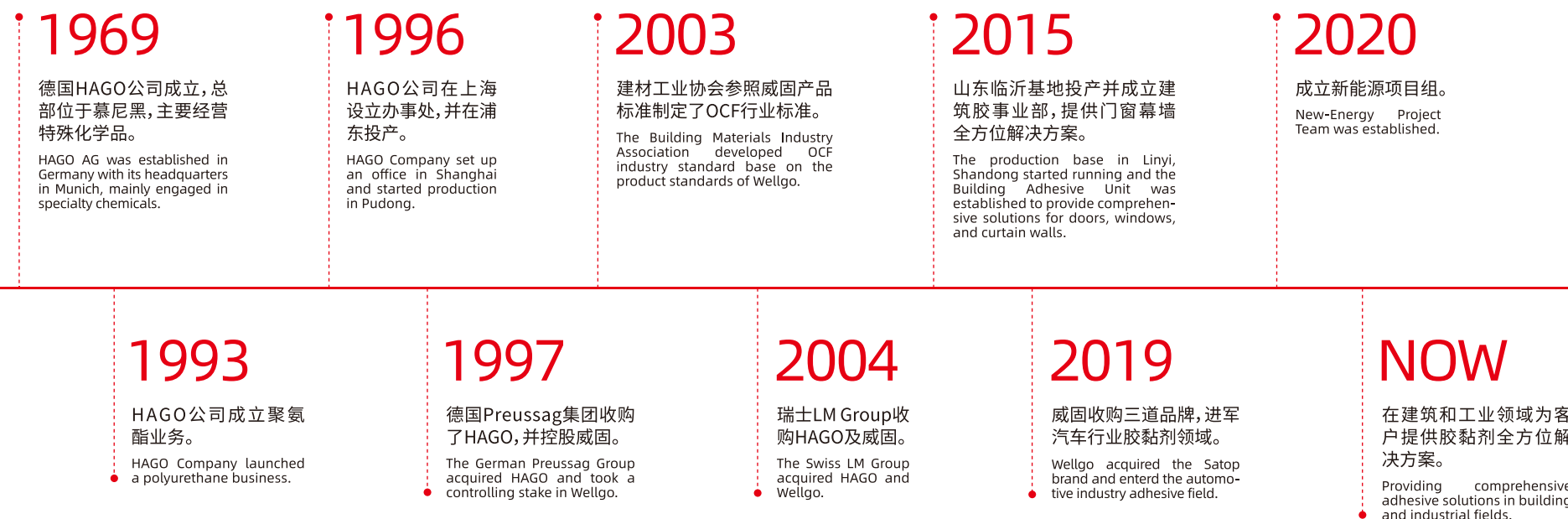
he parent company of the German brand "WELLGO", HAGO, was founded in 1969, with its headquarters in Munich, Germany.

In 1994, its founder Bernhard Frey set up an office and established a R&D and production base in Shanghai. In 1996, the first polyurethane foam adhesive in China that met German standards was born in Pudong, marking Wellgo's provision of a revolutionary solution for China's door and window sealing industry. Wellgo focuses on providing comprehensive solutions for the building and industrial sectors, covering various high-quality sealants and adhesives. , including building sealing and waterproofing, energy-saving and low-carbon building doors and windows, lightweight and thermal management of lithium batteries, automotive sealing and bonding, electronic appliances, etc. After half a century of development, Wellgo has accumulated rich industry experience, participated in the formulation of many industry standards, and demonstrated its leadership position.

Today, Wellgo has over 70,000 square meters of production bases in Shanghai and Shandong, with European fully automatic production lines. Adhering to the German craftsmanship spirit, it continues to innovate, Strive to be the benchmark of China's construction and industrial development, and provide all-round system solutions for the green and low-carbon cause and the automotive industry.

Development History

发展历史



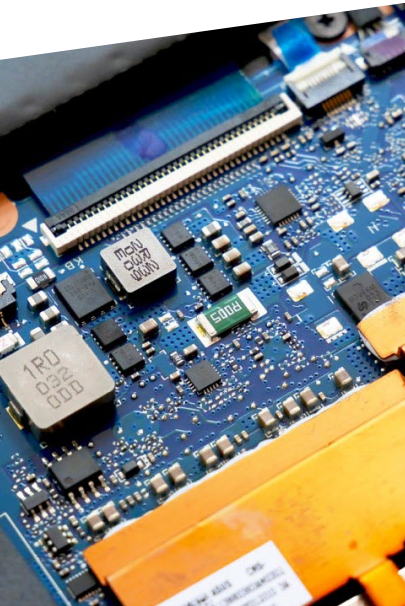
Core Businesses

核心业务



汽车工业
Automotive Industry

- 动力电池用胶
- 汽车结构胶
- 车用密封胶
- 车用发泡胶
- Adhesives for power batteries
- Structural adhesives for automobiles
- Automotive sealants
- Automotive foam sealant



电子电器
Electronics and Electrical Appliances

- 电子灌封胶
- 电力系统用胶
- UV三防胶
- Electronic potting adhesives
- Adhesives for power systems
- UV conformal coatings



过滤器行业
Filter Industry

- 空气过滤器行业
- 水过滤行业
- 汽车过滤器行业
- Air filter industry
- Water filtration industry
- Automotive filter industry



建筑行业
Construction Industry

- 单组分泡沫填缝剂
- 双组分发泡胶
- 铝型材隔热胶
- 建筑密封胶
- One-component PU foam
- Two-component PU foam
- Aluminum profile thermal insulation adhesive
- Building sealant

Technology Innovation and Analysis Platform

技术创新与分析平台



产品平台
Product Platform

- 结构粘接
- 导热
- 保温, 隔热
- 轻量化
- 喷涂
- 化工设备
- Structural bonding
- Heat conduction
- Heat preservation and insulation
- Lightweight
- Spraying
- Chemical equipment



技术平台
Technology Platform

- 树脂合成技术
- 聚氨酯技术
- 环氧技术
- 气雾罐技术
- 预聚体技术
- 发泡技术
- Resin synthesis technology
- Polyurethane technology
- Epoxy technology
- Aerosol can technology
- Prepolymer technology
- Foaming technology



数据平台
Data Platform

- 配方数据
- 应用技术数据
- 模拟仿真数据
- 可靠性数据
- 失效分析数据
- Formula data
- Applied technology data
- Simulation data
- Reliability data
- Failure analysis data

分析表征能力 Analysis and Characterization Capabilities		
色谱仪 Chromatograph	滴定仪 Titrator	高低温交变湿热试验 High and low temperature alternating humidity and heat test
水份仪 Moisture meter	流变仪 Rheometer	差示扫描量热仪DSC Differential scanning calorimeter (DSC)
阻燃箱 Flame etardant box	粘度计 Viscometer	界面热阻和热传导系数仪 Interface thermal resistance and thermal conductivity meter



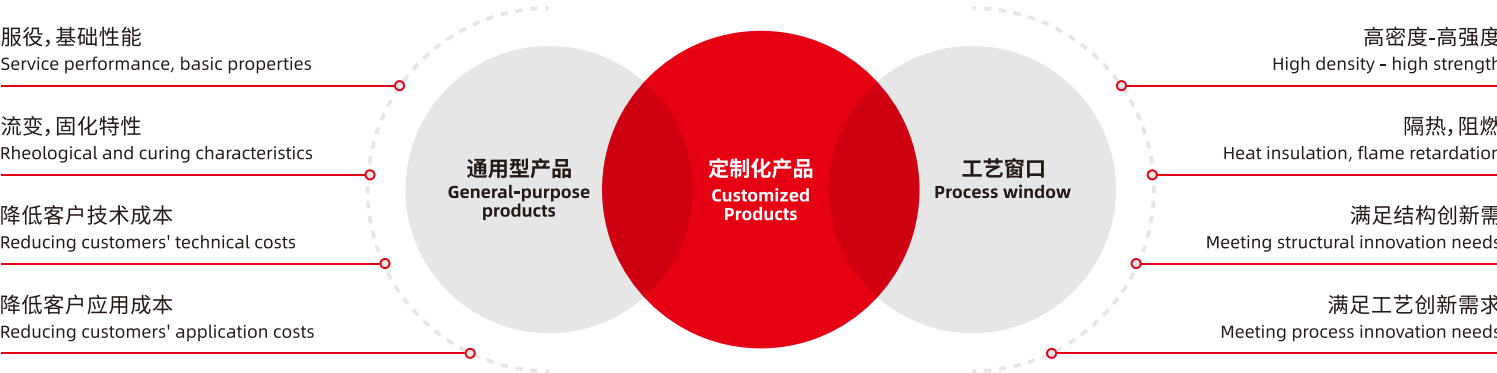
Product Customization Service

产品定制化服务

威固秉承着从变化到设计,从需求到服务,都能满足客户全方位的需求与期望。凭借现有的一系列通用型产品,融合多种不同工艺,可以灵活衍生出满足各类需求的定制化产品。

Wellgo adheres to meeting customers' all-round needs and expectations, from changes to design, and from requirements to services. With a series of existing general-purpose products and the integration of various different processes, customized products that meet various needs can be flexibly derived.

质量控制与服务
Quality Control and Service



Honors

相关荣誉



Certifications

相关认证



Cooperative Customers

部分合作客户

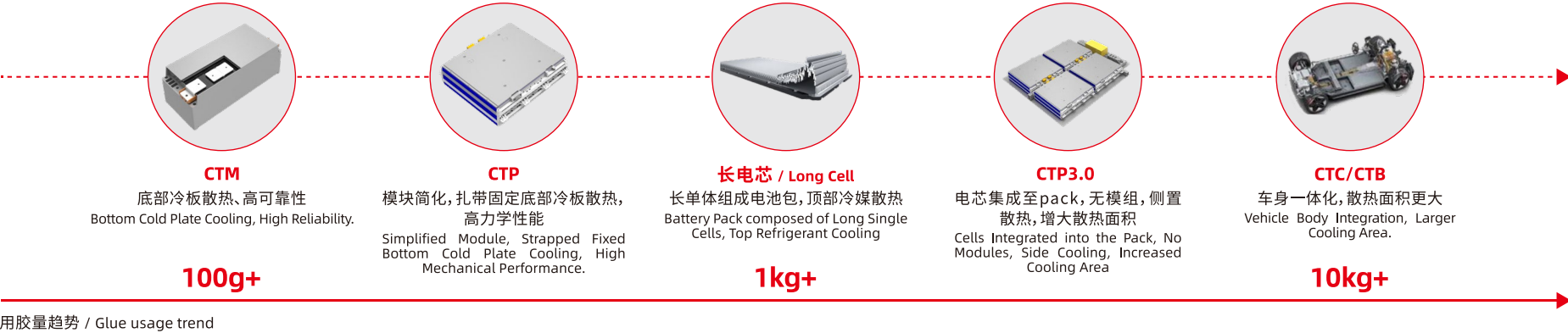


DEVELOPMENT OF POWER AND ENERGY STORAGE BATTERIES

动力及储能电池对胶粘剂的需求

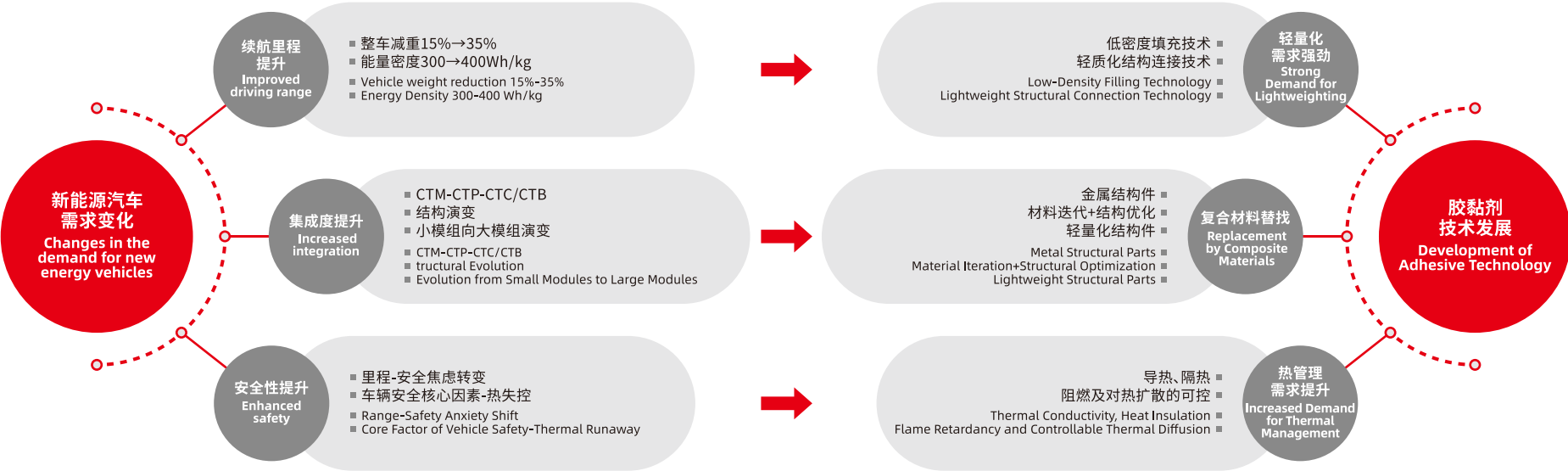
The Evolution of New Energy Battery Pack Packaging Structure

新能源电池包封装结构的演变



Demand Changes Lead The Development of Adhesives

需求变化引领胶粘剂发展



Energy Storage
Battery Demand For Adhesives

储能电池对胶粘剂的需求

01 高效导热性能
High thermal conductivity

- 高导热系数
- 均匀散热
- 降低热阻
- High Thermal Conductivity Coefficient
- Uniform Heat Dissipation
- Reduced Thermal Resistance

03 耐腐蚀和绝缘性
Corrosion Resistance and Insulation

- 耐电化学腐蚀
- 耐湿热腐蚀
- 优异的绝缘性
- Resistance to Electrochemical Corrosion
- Resistant to heat and humidity corrosion
- Excellent Insulation

05 可拆解性
Disassemblability

- 可再生电池
- 改善电池包拆卸难度
- 锂离子电池拆解维修
- 环保可持续发展
- Renewable Batteries
- Reduced Difficulty in Disassembling the Battery Pack
- Lithium-Ion Battery Disassembly and Maintenance
- Environmental Sustainability

02 耐高温性能
High Temperature Resistance

- 高温稳定性
- 耐老化性能
- 耐温范围宽
- High Temperature Stability
- Aging Resistance
- Wide Range of Temperature Resistance

04 环保性
Environmental Friendliness

- 无毒环保
- 可降解性
- 符合环保法规
- Non-toxic and Environmentally Friendly
- Degradable
- Complies with Environmental Regulations



Comparison Between Power
Batteries And Energy Storage Batteries

动力电池与储能电池对比

	动力电池 Power Batteries	储能电池 Energy Storage Batteries
应用场景 Application Scenarios	主要用于电动汽车等交通 Mainly used in transportation such as electric vehicles	主要用于电力储能、工商业储能、家庭储能、基站储能中心、便携式储能等领域 Mainly used in power energy storage, industrial and commercial energy storage, home energy storage, base station energy storage centers, portable energy storage, and other fields
性能要求 Performance Requirements	能量密度和功率密度要求较高 Higher energy density and power density requirements	能量密度无要求 No energy density requirements
电池容量 Battery Capacity	50-100Ah	280Ah、314Ah
BMS定位 BMS Positioning	高压下与电机和充电器有能量交换关系 Energy exchanges between the motor and charger under high voltage	高压下与储能专换器相互用,完成电流的交换 Under high voltage, interacts with energy storage converter to complete the current exchange
使用寿命 Service Life	循环次数寿命2000次 Cycle life 2000 times	循环次数寿命>5000 次 Cycle life > 5000 times.
性能 and 设计要求 Performance and Design Requirements	注重充放动力、充电速度快 输出功率高、高安全性、高能量密度 长续航、轻量化 Focus on charging and discharging power, fast charging speed High output power, high safety, high energy density Long battery life, lightweight	电池大容量 25-30年长使用寿命 更低成本 热管理效率高 Large battery capacity Long service life of 25 - 30 years Lower cost High thermal management efficiency.
	能量密度要求高 轻量化要求高 粘接强度要求高 High energy density requirements High lightweight requirements High bonding strength requirements	大容量电芯, 热管理效率要求提高 使用寿命-高可靠性 绝缘性能长期稳定 Large-capacity cells, higher requirements for thermal management efficiency Service life-High reliability Long-term stable insulation performance

ADHESIVE SOLUTIONS FOR POWER AND ENERGY STORAGE BATTERIES

动力及储能电池用胶解决方案

热管理用胶解决方案
Adhesive Solutions for Thermal Management

轻量化用胶解决方案
Adhesive Solutions for Lightweight

密封用胶解决方案
Adhesive Solutions for Sealing



Adhesive Solutions for Thermal Management

热管理用胶解决方案

热管理的重要性 Importance of Thermal Management

木桶效应：
电池系统的性能、可靠性取决于最弱的一个电芯，系统的安全性取决于最不稳定电芯。

Bucket Effect:
The performance and reliability of a battery system depends on the weakest cell, and the safety of the system depends on the most unstable cell.

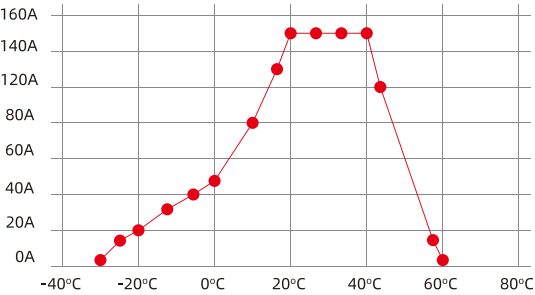


图1 某电芯最大放电电流随温度的变化曲线
Figure 1 The maximum discharge current of a battery cell changes with temperature

假设大部分电芯温度为20°C，而某一个电芯A因为加热慢，温度只有10°C，那么整个电池包的放电电流被迫从150A下降到100A，性能下降三分之一。

Assuming that the temperature of most battery cells is 20°C, and the temperature of a certain battery cell A is only 10°C due to slow heating, then the discharge current of the entire battery pack is forced to drop from 150 A to 100 A, resulting in a one-third performance drop.

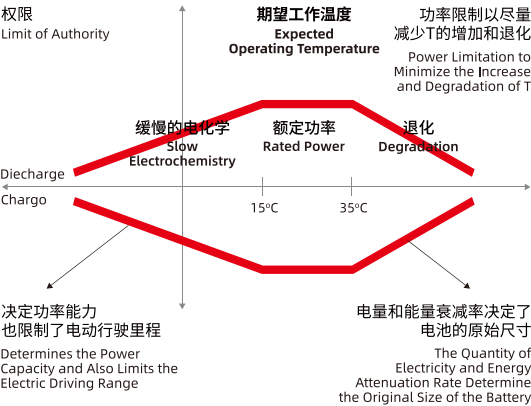


图2 温度对电池性能的影响
Figure 2 Effect of temperature on battery performance

温度影响电池的寿命和尺寸，从而影响成本
Temperature affects the size and life of the battery, thereby affecting the cost.

锂电的性能、安全和生命周期受到工作温度的影响非常大，理想的电池工作温度在15-35°C，并且电池包内的模组温差要小于5°C，所以锂电的热管理非常重要。

The performance, safety and life cycle of lithium batteries are greatly affected by operating temperature. The ideal battery operating temperature is 15-35°C, and the temperature difference of the modules in the battery pack should be less than 5°C. Therefore, the thermal management of lithium batteries is very important.

热管理的重要性
Importance of Thermal Management

单体电池循环 / Single Cycle of Battery		
序号 / No.	环境温度 / Enviroment Temperature	循环次数 / Number of Cycles
1	25°C	4000次 / Times
2	45°C	2800次 / Times
3	55°C	1600次 / Times

图3 高温循环寿命降低, 电池使用寿命减少
Figure 3 Cycle life is reduced and battery life is shortened under high temperature

在电池单体循环实验中, 温度升高会导致循环次数下降, 因此对于热管理温度的控制直接关系到循环次数寿命和利润率。

In the single-cell cycle experiment, when the temperature rises, the number of cycles will decrease. Therefore, the control of the thermal management temperature is directly related to the cycle life and profit margin.

高低温放电容量保持率/0.33c
High and Low Temperature Discharge Capacity Retention Rate / 0.33c.

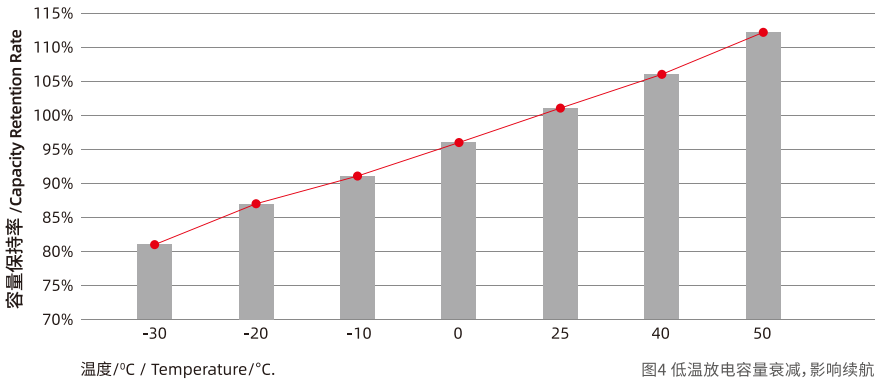


图4 低温放电容量衰减, 影响续航
Figure 4: Low-temperature discharge capacity decays, affecting battery life

- 锂电池放电倍率用“c”表示
- 动力电池一般放电倍率为0.33c到0.5c
- 储能行业常见放电倍率为0.3c、0.5c、1c、1.5c等
- 放电倍率越高, 发热量越大, 对热管理要求更为严格
- The discharge rate of lithium batteries is represented by "c"
- The general discharge rate of power batteries is 0.33c to 0.5c
- The common discharge rates in the energy storage industry are 0.3c, 0.5c, 1c, 1.5c, etc
- The higher the discharge rate, the greater the heat generation, and the stricter the thermal management requirements

导热界面材料如何选择
How to Choose Thermal Interface Materials.

导热垫片 / Thermal Pad	T1(°C)				平均T / Average T(°C)
IC充开始 / IC Charging Start	25.85	26.32	26.39	25.66	26.05
IC充结束 / IC Charging End	40.67	41.84	41.13	40.79	41.18
温升 / Temperature Rise	14.81	15.52	15.04	15.14	15.13

VS

导热胶 / Thermal Adhesive	T1(°C)				平均T / Average T(°C)
IC充开始 / IC Charging Start	25.10	25.41	25.33	26.31	25.54
IC充结束 / IC Charging End	38.67	40.00	39.26	39.28	39.30
温升 / Temperature Rise	13.57	14.59	13.93	12.97	13.76

相同导热系数, 导热胶的温升明显比导热垫的小。

With the same thermal conductivity coefficient, the temperature rise of the thermal adhesive is significantly smaller than that of the thermal pad.

材料 / Material	结构强度 / Structural Strength
导热硅凝胶 / Thermal Conductive Silicone Gel	<0.5MPa
导热结构胶 / Thermal Conductive Structural Adhesive	10MPa
导热垫片 / Thermal Pad	无结构强度 / No Structural Strength

结构强度方面, 导热结构胶自身粘接强度可满足长期使用结构强度。

In terms of structural strength, the bonding strength of the thermal conductive structural adhesive can meet the structural strength for long-term use.

导热结构胶产品
Thermal Structural Adhesives

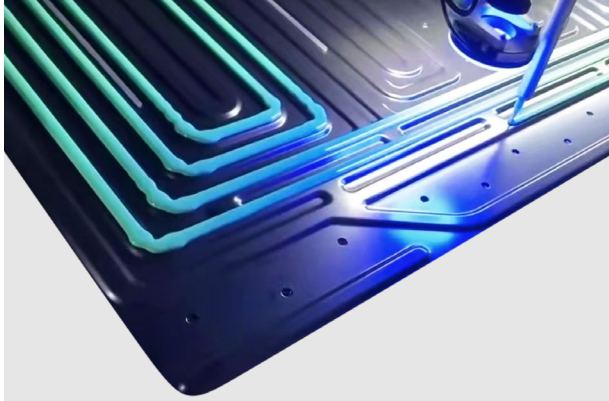
产品特点:

- 低 VOC, 符合 ROHS/REACH, 对人体和环境友好
- 良好的抗振及抗冲击性能
- 固化后附着力好、对各种基材粘接力强
- 耐高低温、耐老化性能优异
- 应用服役性优异

Features:

- Low VOC, compliant with ROHS/REACH, friendly to humans and the environment
- Good anti-vibration and shock resistance
- Good adhesion after curing, strong adhesion to various substrates
- Excellent resistance to high and low temperatures and aging
- Excellent application serviceability

项目 / Item	单位 / Unit	WePU 0408	WePU 0410	WePU 0412	WePU 0415	WePU 0420
导热系数 / Thermal Conductivity	W/(m·K)	0.8	1.0	1.2	1.5	2.0
剪切强度 / Shear Strength	MPa	12	12	9	8	6
拉伸强度 / Tensile Strength	MPa	12	12	8	8	6
断裂伸长率 / Elongation at Break	%	50	80	60	50	50



储能可拆解导热结构胶
Removable Thermal Conductive Structural Adhesive for Energy Storage.

产品特点:

- 强度适中, 可拆卸;
- 触变性好、不滴胶、易施工, 设备磨损低

Features:

- Moderate strength, removable
- Good thixotropy, no dripping, easy to construct, low equipment wear

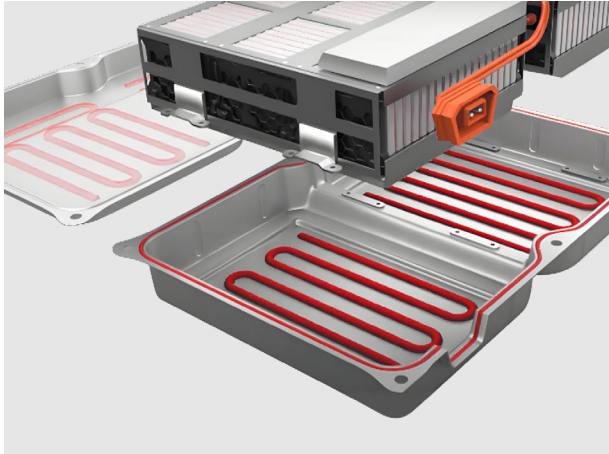
产品应用:

- 储能电池电芯之间导热粘接
- 储能电池模组与 PACK 箱体、电芯与 PACK 箱体之间导热粘接

Application:

- Thermal conductive bonding between energy storage battery cells
- Thermal conductive bonding between the energy storage battery module and the PACK box, and between the cell and the PACK box

项目 / Item	单位 / Unit	WePU 8010	WePU 8012	WePU 8015	WePU 8020
导热系数 / Thermal Conductivity	W/(m·K)	1.0	1.2	1.5	2.0
密度 / Density	g/cm³	1.55	1.75	1.93	2.08
剪切强度 / Shear Strength	MPa	2.0	1.8	1.5	1.5
拉伸强度 / Tensile Strength	MPa	2.0	2.0	1.5	1.5



保温隔热喷涂产品
Thermal Insulating and Heat Preservation Spraying

产品特点：

- 作用：缓冲减振、保温隔热，降低能量消耗
- 无溶剂，环保性好
 - 绝与金属材料粘接良好，无需刷胶
 - 阻燃性好(UL-94 V0级)

产品应用：

- 电池包底护板、电池上盖外层

Features:

- Function: Buffering and vibration reduction, heat insulation, and reducing energy consumption
- Solvent-free, environmental friendly
 - Good adhesion to metal materials without the need for brushing glue
 - Good flame retardancy (UL-94 V0 level)

Application:

- Bottom protective plate of the battery pack, outer layer of the battery cover

项目 / Item	单位 / Unit	技术参数 / Technical Parameters
外观 / Appearance	/	黑灰色 / Black-Gray
密度 / Density	Kg/m³	≤120
阻燃 / Flame Retardancy	/	UL 94 V0
导热系数 / Thermal Conductivity	W/(m·K)	0.04
起发时间 / Foaming Time	s	3
表干时间 / Surface Drying Time	s	20



储能防凝露保温喷涂
hermal Insulation and Anti-Condensation Spraying for Energy Storage.

产品特点：

- 作用：保温隔热防凝露，降低能量消耗
- 无溶剂，环保性好
 - 绝与金属材料粘接良好，无需刷胶

产品应用：

- 储能电池箱体内部、液冷板喷涂

Features:

- Function: Providing thermal insulation and preventing condensation, reducing energy consumption
- Solvent-free, environmental friendly
 - Good adhesion to metal materials with no need for brushing

Application:

- Energy storage battery box interior, liquid cooling plate spraying

项目 / Item	单位 / Unit	技术参数 / Technical Parameters
外观 / Appearance	/	黑灰色 / Black-Gray
密度 / Density	Kg/m³	<100
导热系数 / Thermal Conductivity	W/(m·K)	≤0.025
起发时间 / Foaming Time	s	3
表干时间 / Surface Drying Time	s	20



抗石击保温喷涂产品
Anti-Stone Impact and Thermal Insulation Spraying Product

产品特点：

- 作用：抗冲击、耐腐蚀、保温
- 对各类基材均具有良好附着力
 - 低温回弹性好
 - 使用温度宽 (-45°C~150°C)
 - 快速固化，可在任意曲、立面、顶面连续喷涂成型

产品应用：

- 电池底板防石击、汽车底盘防护

Features:

- Function: Anti-impact, corrosion resistance, and thermal insulation
- Good adhesion to various substrates
 - Good low-temperature resilience
 - Wide operating temperature range (-45°C ~ 150°C)
 - Quick curing, can be continuously sprayed on any curved, vertical, or top surface

Application:

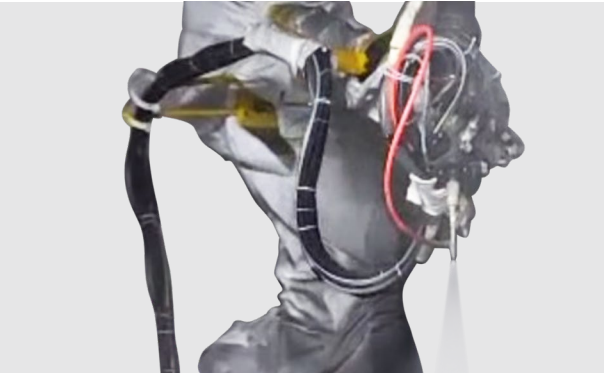
- Anti-stone impact for the battery bottom plate, protection for the automobile chassis

项目 / Item	单位 / Unit	技术参数 / Technical Parameters
外观 / Appearance	/	黑灰色 / Black-Gray
密度 / Density	Kg/m³	<500
硬度 / Hardness	(邵A)/(Shore A)	40~80
导热系数 / Thermal Conductivity	W/(m·K)	≤0.1
拉伸强度 / Tensile Strength	MPa	≥1.0
阻燃 / Flame Retardancy	/	V0
附着力 / Adhesion	/	内聚破坏 / Cohesive failure
抗冲击性 / Impact Resistance	/	50kg/cm2,不露底,无裂纹,剥落 / No exposing, no cracks, no flaking
抗石击性 / Anti-Stone Impact Resistance	/	≤1级



高低压喷涂机对比
Comparison of high and low pressure sprayers

高压喷涂机 High Pressure Sprayer	低压喷涂机 Low Pressure Sprayer.
原料输出压力:11MPa Feedstock output pressure:11MPa	原料输出压力: 0.5MPa Feedstock output pressure:0.5MPa.
料管需要耐高压加温料管 The material pipe must be resistant to high pressure heating	无需加温普通料管 No heating, ordinary material pipe.
喷头容易磨损损害 Sprinkler heads are prone to wear and damage	喷头基本没有损耗,可用几年 Sprinkler head is almost wearless and can sevice for several years.
高粘度、加粉原料易堵塞 High-viscosity or powdered spraying are prone to clog	高粘度、加粉原料可以喷,喷头不会堵塞 High-viscosity or powdered spraying works without clog.
相同密度同产品喷2-3mm厚度, 低压喷涂机每平方所需原料低于高压喷涂 For 2-3mm thickness coating of same density products, the spray used by low pressure sprayer is 1/2 of that used by high pressure sprayer	



Adhesive Solutions for Lightweight

轻量化用胶解决方案

结构发泡灌封胶 Structural Foaming Potting Adhesive

产品应用：

- 用于圆柱电池、方形电池灌封

产品特点：

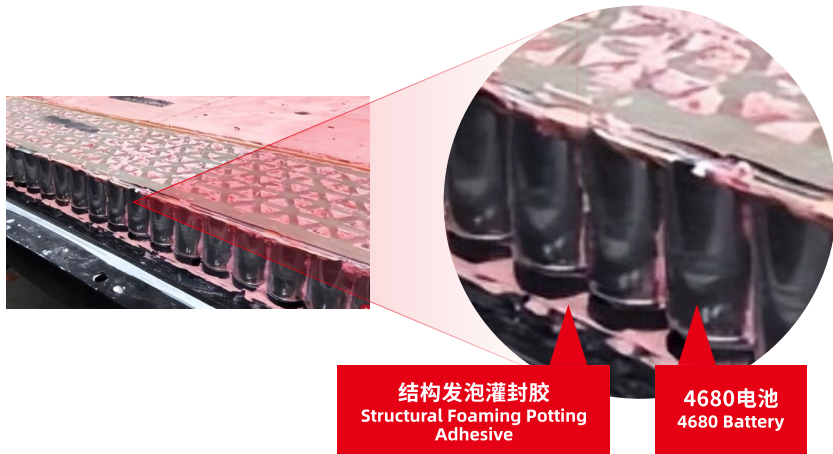
- 满足绝缘、耐压、结构强度功能
- 热失控起防护作用
- 助力电池包轻量化
- 可定制产品性能

Application:

- Cylindrical batteries and Square batteries

Features:

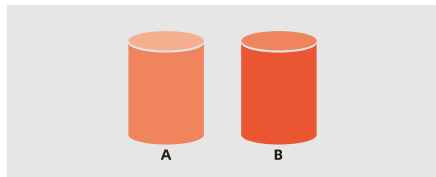
- Meet the functions of insulation, voltage resistance, and structural strength
- Protect against thermal runaway
- Facilitate the battery pack to be lightweight
- Customizable product performance



产品系列典型性能指标 Product Series Typical Performance Indicators

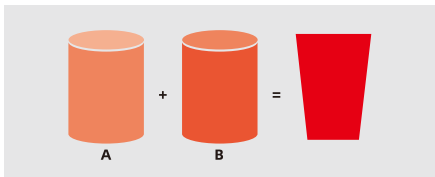
项目 / Item	单位 / Unit	WePU2803	WePU2802
密度 / Density	Kg/m ³	170	240
阻燃 / Flame Retardancy	/	UL94 V0 (6mm)	UL94 V0 (3mm)
导热系数 / Thermal Conductivity	W/(m·K)	≤0.05	≤0.05
剪切强度 / Shear Strength	MPa	≥2.5	≥2
硬度 / Hardness	MPa.s	邵A85	邵D35
起发时间 / Foaming Time	min	3-5	3-5

发泡灌封工艺示意图 Schematic Diagram of the Foaming Potting Process.



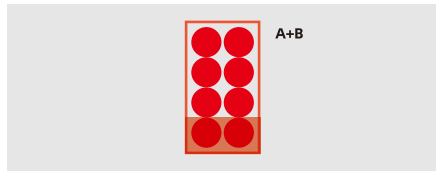
预处理 / Pretreatment

双组份材料A+B
Two-component material A+B



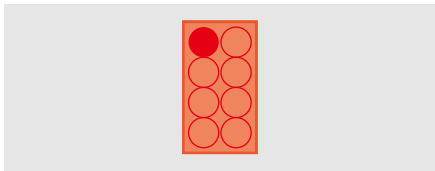
混合 / Mixing

混合：A/B胶在一定温度下，以一定的比例混合一段时间已达到均匀
Mixing: The A/B glue is mixed at a specific temperature and in a certain proportion for a period of time to achieve uniformity



组分灌注 / Component Pouring

混合后的液体组分被灌注到电池包中
The liquid component after mixing is injected into the battery pack



熟化下线 / ripening down the line

熟化后，即可下线
After curing, it can be taken offline

发泡灌封设备 Foaming Potting Equipment

该设备专为威固结构发泡灌封胶施胶设计制造；
配合六轴关节机器人，可实现发泡灌封胶多工艺方式灌注；

This equipment is specially designed and manufactured for the application of Wellgo structural foaming potting adhesive. With the help of a six-axis joint robot, it can realize the multi-process pouring of the foaming potting adhesive.

产品特点：

- 适用原料粘度范围宽广
- 精准恒温控制
- 高精度流量控制
- 宽泛比例输出范围，由极小到极高的浇注量调整

Features:

- Applicable to a wide range of raw material viscosity
- Precise constant temperature control
- High-precision flow control
- Wide proportional output range, minimal to extremely high pouring volume adjustment



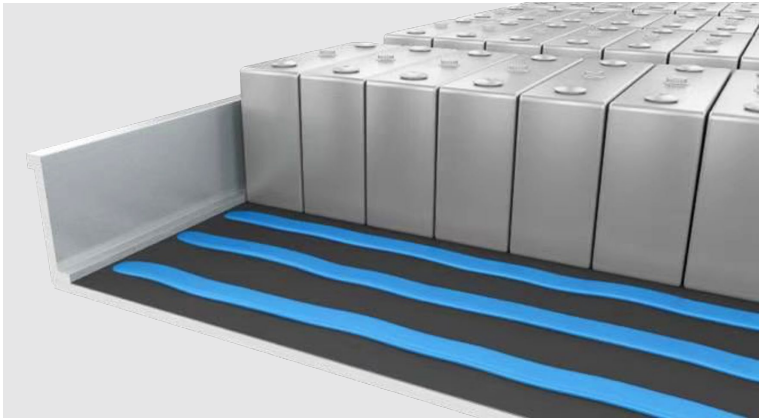


低密度结构胶
Low-Density Structural Adhesive

- 产品应用：
- 电芯的固定、模组的组装
 - 电池包整体粘接及CTP、CTC 的应用

- Applications:
- Fixing of the cells, assembly of the modules
 - Overall bonding of the battery pack and application of CTP, CTC

项目 / Item	单位 / Unit	测试标准 / Test Standard	参数 / Parameter
操作时间 / Operating Time	min	GB/T7123.1-2015	20
密度 / Density	g/cm³	GB/T 13354	0.8
剪切强度 / Shear Strength	MPa	GB/T 7124	≥9
拉伸强度 / Tensile Strength	MPa	GB/T 528	≥9
伸长率 / Elongation	%	GB/T 528	80
阻燃 / Flame Retardancy	/	UL94	V0

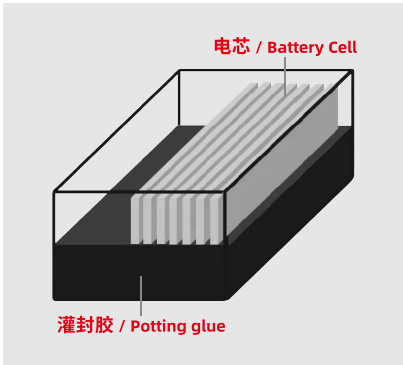


低密度灌封胶
Low-Density Potting Adhesive

- 产品应用：
- 动力电池模组电芯填充减震、缓冲、绝缘、隔热保护

- Applications:
- Filling, shock absorption, buffering, insulation, and heat insulation protection for the power battery module cells

项目 / Item	单位 / Unit	测试标准 / Test standard	参数 / Parameter
导热系数 / Thermal Conductivity	W/(m·K)	ASTM-D5470	1.2
密度 / Density	g/cm³	GB/T 13354	0.8
剪切强度 / Shear Strength	MPa	GB/T 7124	≥2
拉伸强度 / Tensile Strength	MPa	GB/T 528	≥2
伸长率 / Elongation	%	GB/T 528	50



Adhesive Solutions
for Sealing

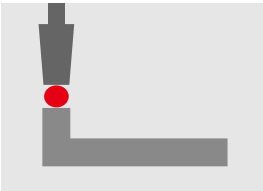
密封用胶解决方案

FIPG方案
FIPG Solution

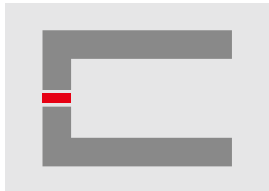
湿式装配法, 通过自动化设备点胶后, 胶水未固化之前就将上下零部件装配好, 该工艺是通过胶水粘接的方式来达到密封保护的作用。

Wet assembly method. After dispensing through automated equipment, the upper and lower components are assembled before the glue is cured. This process achieves the sealing and protection function through the bonding of the glue.

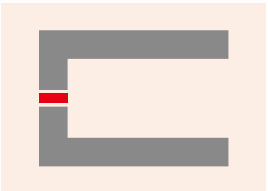
- 产品特点：
- 取代传统机械结合技术
- 降低产品重量, 提高经济效益
- 良好的粘接性
- Features:
- Replace traditional mechanical bonding techniques
- Reduce product weight and improve economic benefits
- Good adhesion



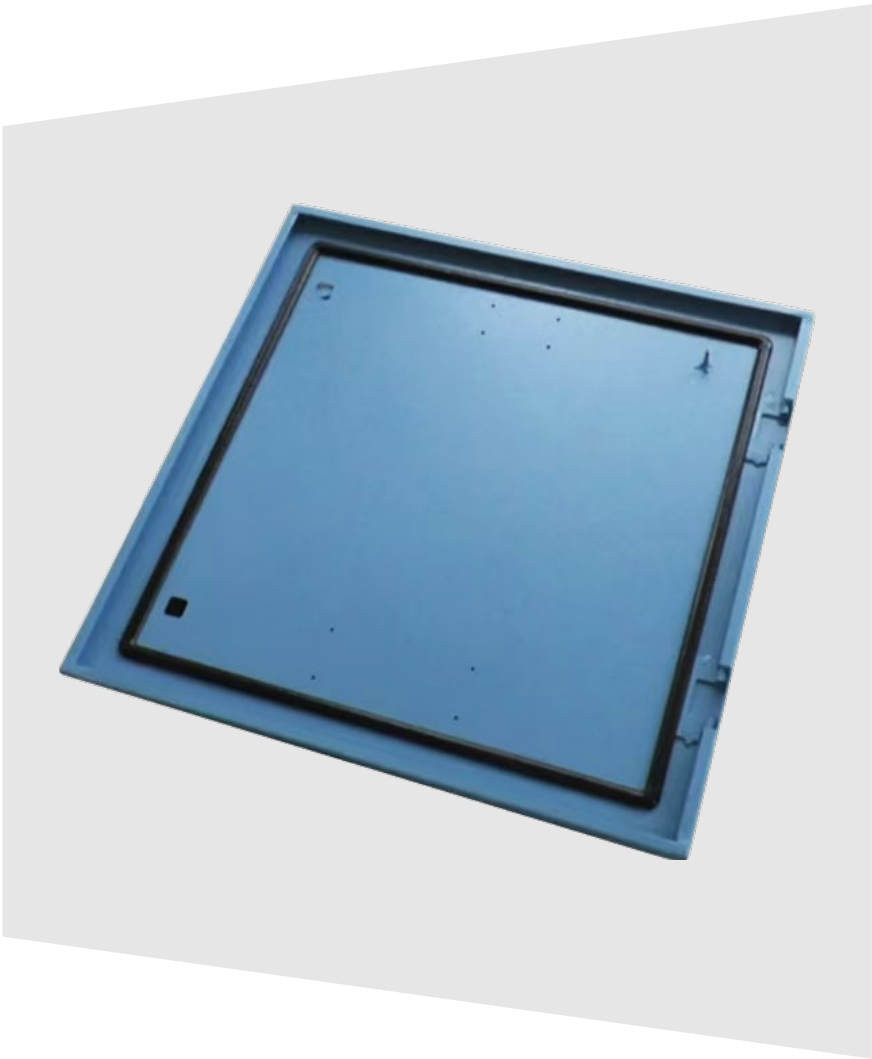
施胶
Dispensing



装配粘接
Assembly Bonding



室温固化
Room Temperature Curing



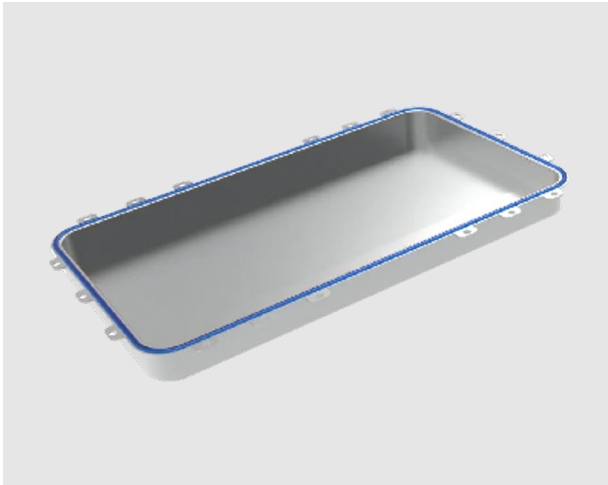
FIPG方案-硅烷改性密封胶
FIPG Solution - Silane-Modified Sealant

产品特点：

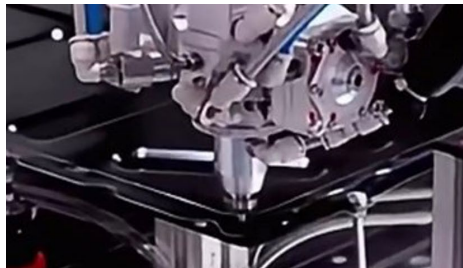
- 室温快速固化,对基材无腐蚀
- 绿色环保,低VOC
- 适合粘接各种不同的基材,粘接速度快、固化后粘接强度大(抗冲击、抗震动)

Features:

- Quick room temperature curing, non-corrosive to substrates
- Green and environmentally friendly, low VOC
- Suitable for bonding various different substrates, fast bonding speed, and strong bonding strength (impact resistance, vibration resistance) after curing



CIPG方案-施胶工艺
CIPG Solution - Dispensing Process



表面清洁 / Surface Cleaning



设备涂胶 / Equipment Dispensing



烘道固化 / Channel Curing



工件组装 / Workpiece Assembly



CIPG方案-双组份发泡硅胶
CIPG Solution - Two - ComponentFoaming Silicone

是一款室温固化、双组分加成型有机硅发泡材料。当A和B组分1:1比例完全混合后,产品即开始交联发泡反应。混合后的物料会发泡膨胀,形成有机硅泡沫弹性材料。

A room temperature curing, two-component addition-cured silicone foaming material. When components A and B are mixed in a 1:1 ratio, the product begins to crosslink and foam. The mixed material will foam and expand to form an elastic silicone foam material.

产品特点：

- 发泡倍率高 & 胶条密度低
- 闭孔发泡 & 吸水率低
- 优异的抗压缩永久变形
- 耐温达250°C
- V-0 阻燃等级
- 环境友好 (RoHS 和 Reach)

Features:

- High foaming ratio & low strip density
- Closed-cell foaming & low water absorption
- Excellent resistance to compression set
- Heat resistance up to 250°C
- V-0 flame retardant grade
- Environmentally friendly (RoHS and Reach)

双组份硅胶发泡原理
Two-Component Silicone Foaming Mechanism

- 发泡反应,通过产生氢气提供发泡所需的气体
- 交联反应,确保所得的双组份液体发泡硅胶材料具有一定的强度
- Foaming reaction, providing the gas required for foaming by generating hydrogen
- Cross-linking reaction, ensuring that the resulting two-component liquid foaming silicone material has a certain strength



性能参数
Performance Parameters.

项目 / Item	单位 / Unit	技术参数 / Technical parameter
粘度A / Viscosity A	MPa.s	20 000
粘度B / Viscosity B	MPa.s	38 000
适用期,23°C / Pot Life, 23°C	/	130~150s
表干时间,23°C / Surface Drying Time, 23°C	min	10-15
固化后密度 / Density after Curing	(g/cm³)	0.3
拉伸强度 / Tensile Strength	MPa	0.4
耐温 / Temperature Resistance	°C	250
压缩永久变形 / Compression Set	/	<5%
阻燃等级 / UL 94 / Flame Retardancy Grade / UL 94	/	V0
吸水率 / Water Absorption Rate	%	<1%
应用 / Application	/	GIPFG /在线成型发泡垫圈 / GIPFG / Inline Forming Foam Gasket

