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preeflow®

## MADE BY VISCOTEC VISCOTEC 制造

ViscoTec

The brand preeflow® was created in 2008 by ViscoTec. Since then, the microdispensing products of the eco-PEN and eco-DUO series have been successfully used in dispensing applications worldwide.

preeflow® systems stand for volumetric, repeatable and economical dispensing of low to high viscosity liquids. They can be used individually as well as easily integrated into semi or fully automated systems. The fluids can range from watery to pasty, from self-lubricating to abrasive, from thixotropic to dilatant. There are almost no limits to the types of materials which can be dispensed.

Customer satisfaction is our top priority. We work as a team to provide the perfect solutions to meet your expectations worldwide.

Sales are carried out via an international distributor network. In addition, the preeflow® team is available to answer any questions you may have. A high quality standard and punctual delivery are very important to us. All standard components are available from stock. Our customers can rely on perfect service and support. And that's a promise!

preeflow® 品牌由 ViscoTec 维世科于 2008 年创建。自此之后，eco-PEN 和 eco-DUO 系列微量点胶产品已经成功应用于世界各地的点胶应用中。

preeflow® 系统代表容积式、可重复和经济地低粘度和高粘度液体点胶方案。它们可以单独使用，也可以很容易地集成到半自动化或全自动化系统中。可输送的液体范围从水状到糊状，从自润滑材料到研磨材料，从触变剂到膨胀剂。因此，preeflow® 对于要输送的物料类型几乎没有限制。

客户满意是我们的首要任务。我们作为一个团队为客户提供完美的解决方案，以满足全球客户的期望。

我们通过国际经销商网络进行销售。此外，preeflow® 团队可以回答您可能遇到的任何问题。高质量标准和准时交货对我们至关重要。所有标准组件都备有现货。客户可以依靠于我们完善的服务和支持。这是我们对客户的一项承诺！





## TECHNOLOGY & USP 技术 & 卖点

# HOW IT WORKS EVEN WITH THE MOST SOPHISTICATED MATERIALS 它是如何工作的？即使是在处理最复杂物料的情况下？

### THE ENDLESS PISTON PRINCIPLE 无限循环活塞原理

The functional principle of the preeflow® dispenser is similar to that of an endless piston dispenser.

The special conveying geometry enables continuous, pulsation-free dispensing flow. Reversing the direction of rotation (suck-back function) prevents dripping and leads to a controlled thread break of the material. preeflow® delivers high-precision and clean dispensing results.

Particularly sensitive material with high viscosities and fillers are treated gently due to the low shear stress and low pressures.

#### MANY TASKS – ONE PRINCIPLE!

- Volumetric
- Viscosity-independent
- Pulsation-free

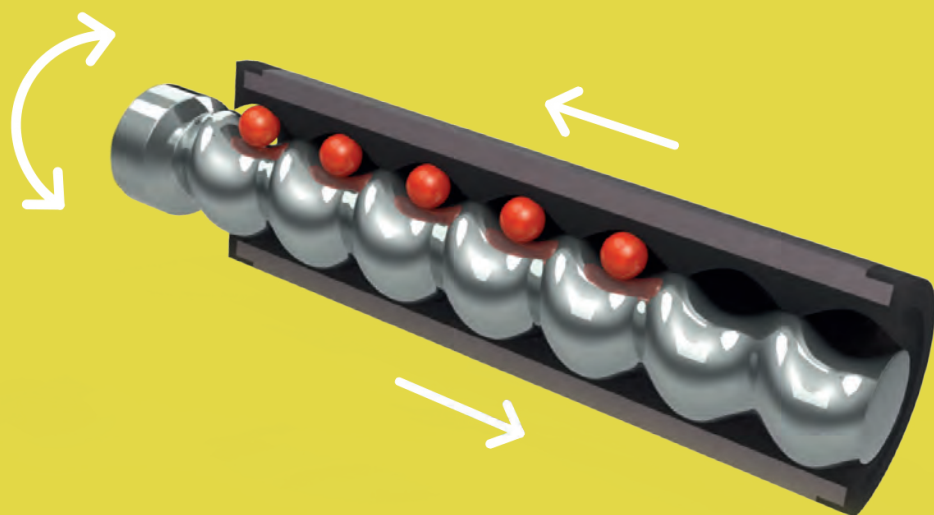
preeflow®点胶泵的功能原理与无限循环活塞分配器相似。

特殊的输送几何结构可以连续、无脉动地输送流体物料。反转旋转方向（回吸功能）可以防止物料滴落，同时实现物料的受控螺纹剪切。preeflow®能够实现清洁的高精度点胶结果。

对于特别敏感的高粘度物料和填料，也能通过preeflow®实现的低剪应力和低压力而得到温和处理。

#### 多种任务，一个原则！

- 容积式
- 与粘度无关
- 无脉动



### MADE IN GERMANY 德国制造

From the initial idea to the quality control of the outgoing goods: All steps in the process are developed and implemented at the headquarters in Töging. In addition to the quality feature “Made in Germany” and the “Think global, act local” approach, we at preeflow® not only ensure the quality of the systems, but also offer optimum coordination and process reliability in all projects.

从最初的想法到出货的质量控制：过程中的所有步骤都是在德国总部开发和实施的。除了“德国制造”的质量特征和“全球思考，本地行动”的方法外，我们的preeflow®不仅能确保系统的质量，而且还能在所有项目中提供最佳的协调和过程可靠性。



### EXPERIENCE 经验

We have more than 20 years' experience in the dispensing of fluids. This comprehensive know-how in dispensing technology distinguishes ViscoTec. In 2008, this wealth of experience was expanded with the introduction of the preeflow® brand. With success: For 10 years preeflow® has stood for precise and pure volumetric dispensing of liquids in small and very small quantities. A variety of industries worldwide rely on preeflow® products.

我们在流体输送方面拥有着20多年的丰富经验，独特的技术诀窍使得ViscoTec在行业中脱颖而出。2008年，ViscoTec进一步拓展其在流体输送方面的丰富经验，推出了preeflow®品牌。10年来，preeflow®一直代表着小剂量液体的精准容积式输送。世界各地的诸多行业都依赖于preeflow®产品。



### INNOVATION 创新

We are convinced: Standstill means regression – only those who move forward progress. Creativity and ingenuity create innovations. In our Customer and Innovation Center (CIC) we have the opportunity to test your application together with you and adapt it optimally to your process.

我们深信：停滞就意味着倒退——只有前进的人才能进步。创意和理念实现创新。在我们的客户与创新中心（CIC），我们有机会与您一起测试您的应用，使其最适合您的流程。

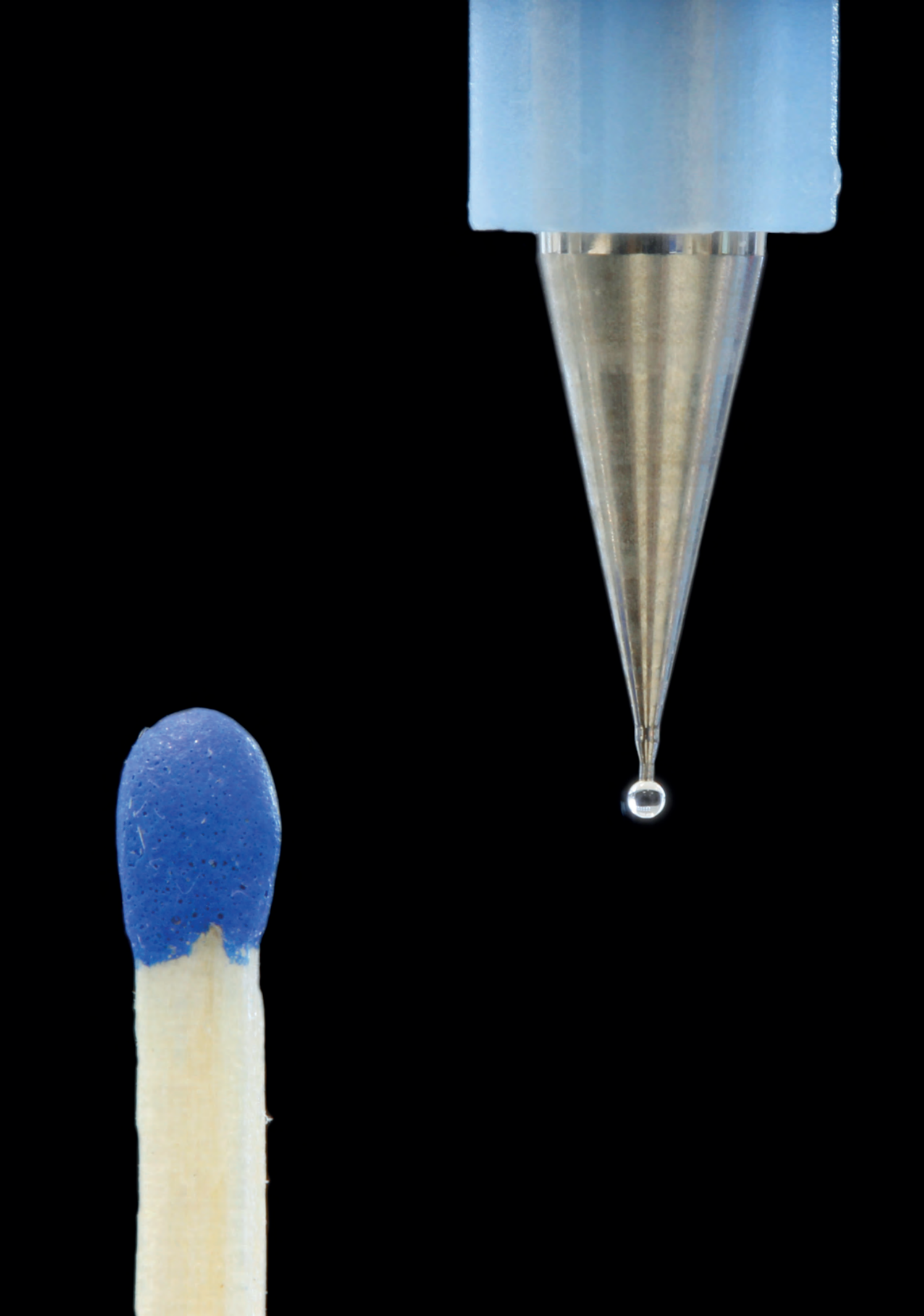


### SERVICE 服务

Our team consists of specialists in all aspects of microdispensing technology. Always technically up to date, we assure you the best service and quick response times. Our ultimate goal is the solution to your technical questions and the optimization of your processes.

我们的团队由微量点胶技术的各个方面的专家组成。我们始终保持着技术上的创新，确保为客户提供最好的服务和快速响应时间。我们的最终目标是解决您的技术问题，优化您的流程。





# DOT & BEAD DISPENSING 打点 & 划线点胶

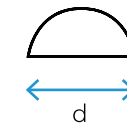
## – INTERESTING FACTS

## – 有趣的实验

### DROPLET SIZES 点胶剂量

One microliter (0.001 ml) is the smallest dose quantity possible with a preflow® dispenser. For illustration: This volume corresponds to a cube of only one millimeter edge length. As droplets on a substrate with a contact angle of 90°, this has a diameter of only 1.56 mm. Larger droplets are possible at any time during the process thanks to the technology used.

一微升 (0.001ml) 是 preflow®点胶泵可以实现的最小点胶剂量。举例来说：这个体积对应一个边长只有 1mm 的立方体。与基底接触角为 90°的液滴，其直径仅为 1.56mm。当然，这项技术也能在加工过程中的任何时候，输送更大的液滴。



v: ml (volume 体积)  
d: mm (diameter 直径)

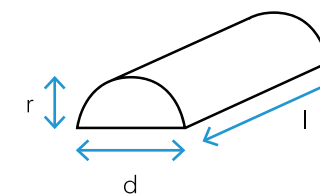
v: 0,0001 d: 0,73	v: 0,0003 d: 1,05	v: 0,0005 d: 1,24	v: 0,001 d: 1,56	v: 0,003 d: 2,25	v: 0,005 d: 2,67	v: 0,01 d: 3,37	v: 0,03 d: 4,86	v: 0,05 d: 5,78	v: 0,1 d: 7,26

### BEAD STRENGTH 胶珠的强度

Due to pulsation-free dispensing technology, high-quality beads can be produced with preflow® dispensers. Beads with a diameter of less than one millimeter can also be produced. With flow rate linked to speed of movement, consistent and stable beads can be dispensed along multi-dimensional paths.

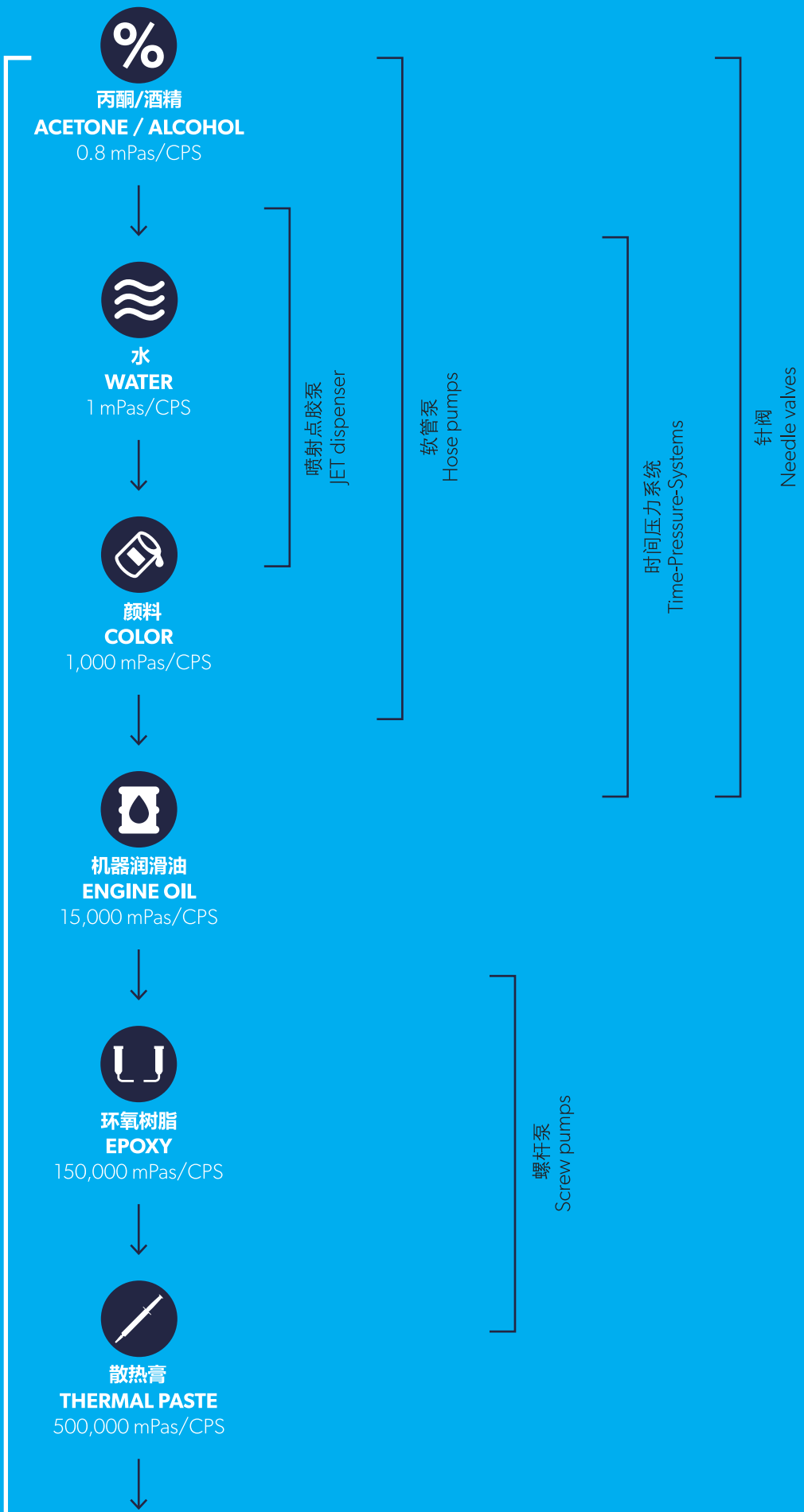
基于无脉动点胶技术，使用preflow®点胶泵可以产生高质量的胶珠。也可以实现直径小于1mm的胶珠。由于物料的输送速度与preflow®点胶泵转子的运动速度有关，因此可以沿着多维路径输送一致且稳定的胶珠。

0,25 mm	
0,5 mm	
1,0 mm	
1,5 mm	
2,0 mm	
2,5 mm	
3,0 mm	



r: mm (radius 半径)  
l: mm (length 长度)  
d: mm (diameter 直径)

ViscoTec的preeflow® 无限循环活塞原理  
preeflow® Endless Piston Principle by ViscoTec



# ECO-PEN





HOW IT WORKS 工作原理

Our eco-PEN is a true volumetric dispensing system that applies the smallest amounts of single-component fluids – for high-precision dispensing technology. Thanks to the proven endless piston principle, watery to pasty liquids are perfectly dispensed. A clean, process-reliable dosage is achieved regardless of fluctuations in viscosity.

我们的 eco-PEN是一个真正的容积式点胶系统，其采用高精度点胶技术，能够实现最小量的单组份流体输送。基于久经考验的无限循环活塞原理，eco-PEN能够实现从水状到糊状液体的完美点胶。无论物料的粘稠度如何，都能通过 eco-PEN实现清洁、过程可靠的精确剂量点胶。



preeflow® stands for high-quality products, from control units to dispensers. Always true to the motto: “smaller, more precise, more economical”. They are suitable for manual workstations, such as workbench applications, or for semi and fully automated operation.

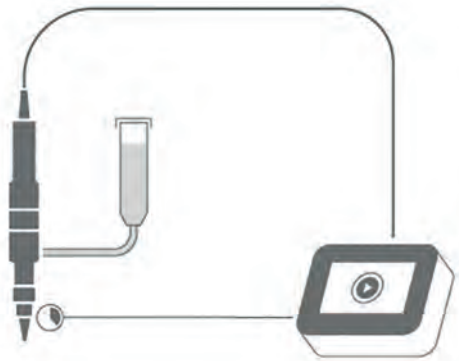
preeflow®从控制单元到点胶泵，都代表着高质量。它始终遵循着 “更小巧、更精确、更经济 ” 的座右铭，适用于手动工作站（如工作台应用）或半自动和全自动操作。

Description 说明	eco-PEN300	eco-PEN330	eco-PEN450	eco-PEN600	eco-PEN700 <sup>3D</sup>
Art. No. 产品编号	20505	21525	20092	20048	20723
Measurements 外观尺寸	length长度 216 mm, Ø 33 mm	length长度 225 mm, Ø 33 mm	length长度 228 mm, Ø 33 mm	length长度 274 mm, Ø 40 mm	length 长度274 mm, Ø 40 mm
Weight 重量	280 g	300 g	300 g	650 g	650 g
Operating pressure 工作压力	0 – 6 bar	0 – 6 bar	0 – 6 bar	0 – 6 bar	0 – 6 bar
Max. dispensing pressure <sup>(1)</sup> 最大输送压力 <sup>(1)</sup>	20 bar	20 bar	20 bar	20 bar	10 bar
Viscosity 粘稠度	watery to pasty 水状到糊状	watery to pasty 水状到糊状	watery to pasty 水状到糊状	watery to pasty 水状到糊状	watery to pasty 水状到糊状
Volume flow 容积流量	0.12 – 1.48 ml/min	0.2 – 3.3 ml/min	0.5 – 6.0 ml/min	1.4 – 16.0 ml/min	5.3 – 60.0 ml/min
Min. dispensing quantity 最小投配量	0.001 ml	0.002 ml	0.004 ml	0.015 ml	0.060 ml
Dispensing accuracy <sup>(2)</sup> 精度 <sup>(2)</sup>	± 1 %	± 1 %	± 1 %	± 1 %	± 1 %
Stator material 定子材料	VisChem	VisChem (optional VisLas)	VisChem (optional VisLas)	VisChem (optional VisLas)	VisChem
Material inlet 物料入口	G 1/8“ DIN/ISO 228	G 1/8“ DIN/ISO 228	G 1/8“ DIN/ISO 228	G 1/4“ DIN/ISO 228	G 1/4“ DIN/ISO 228
Material outlet 物料出口	Luer-Lock (专利技术) (patented)	Luer-Lock (专利技术) (patented)	Luer-Lock (专利技术) (patented)	Luer-Lock (专利技术) (patented)	Luer-Lock (专利技术) (patented)
Wetted parts 接触物料的部件	POM / stainless steel / VisChem / HD-PE	POM / stainless steel / VisChem / HD-PE (optional VisLas)	POM / stainless steel / VisChem / HD-PE (optional VisLas)	POM / stainless steel / VisChem / HD-PE (optional VisLas)	POM / stainless steel / VisChem / HD-PE
Operating conditions 工作温度	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C
Repeat accuracy 重复精确度	> 99 %	> 99 %	> 99 %	> 99 %	> 99 %

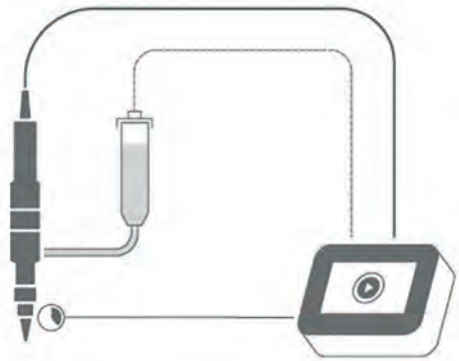
(1) Max. dispensing pressure and self-sealing decrease with decreasing viscosity, increase with increasing viscosity. Consult the manufacturer. 最大输送压力和自密封性，随粘度的降低而降低，随粘度的增加而增加。详情请咨询制造商。

(2) Volumetric dispensing as absolute deviation related to one revolution of the dispenser. Depends on the viscosity of the dispensing material. 点胶精准度与点胶泵旋转一圈所输送的物料的绝对偏差有关。具体取决于所输送物料的粘稠度。

SYSTEM PRESENTATION 系统演示



Self-levelling liquid, low viscosity material  
自流平液体，低粘度物料

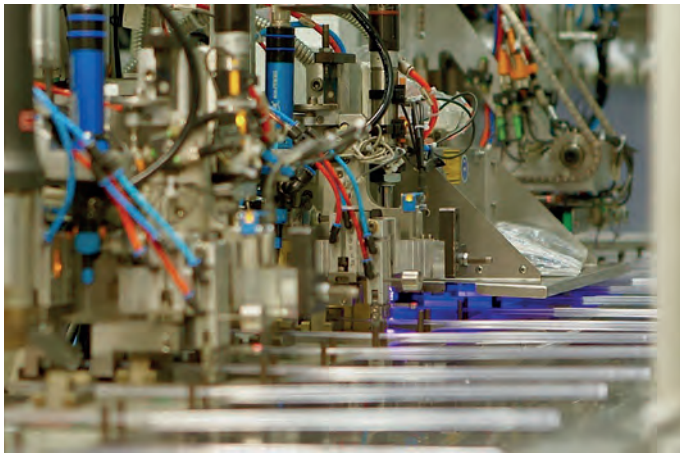


Non-self-levelling liquid, medium to high viscosity material, incl. pressure feed  
非自流平液体，中到高粘度物料，包括压力进料

APPLICATION EXAMPLE 应用案例

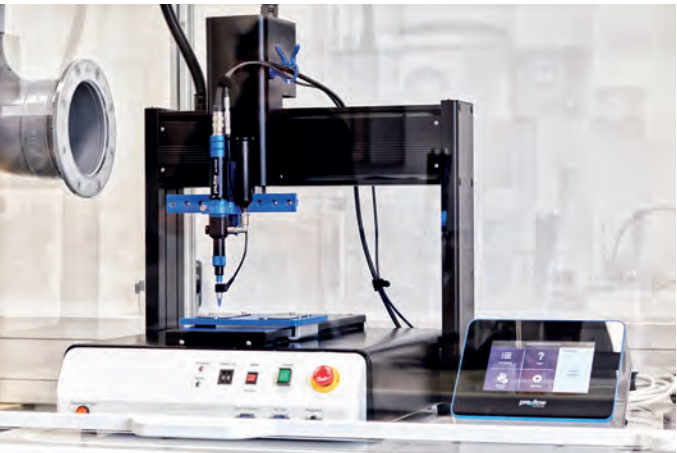
In the field of electronics, more and more devices and enclosures are being bonded instead of screwed or fastened. The eco-PEN series from preeflow® meets the demands of the market for miniaturization. The micro-dispensing units achieve the smallest dispensing results of up to 0.001 ml and can therefore be implemented into almost any dispensing application. Among the advantages that the customer benefits from, through the integration of the eco-PEN into their system, are precision, a repeat accuracy of ≥ 99 %, a stable process and a clean dispensing application.

在电子领域，越来越多的器件和外壳是粘合在一起的，而不是用螺丝固定的。preeflow® 的 eco-PEN系列点胶泵满足了市场对小型化的需求。这种微量点胶泵可以实现0.001ml的最小点胶量，因此几乎可用于任何点胶应用中。通过将 eco-PEN集成到系统中，客户可以受益于高度精确、≥99%的重复精度、过程稳定和清洁的点胶应用。



True to the motto “plug’n’dose”, both the 1 component dispenser eco-PEN and the 2 component dispenser eco-DUO are ready to use after a simple stator installation and connection to the controller. The operation of the dispenser and the controller is intuitive. In addition to the ease of commissioning and the capability of applying a large number of different materials, there are other advantages: the viscosity-independent, purely volumetric dispensing in small and very small quantities.

遵循着“即插即用”的座右铭，单组份点胶泵eco-PEN和双组份点胶泵eco-DUO，在简单地安装上定子并连接到控制器后，即可使用。点胶泵和控制器的操作简单直观。除了易于调试和适用于大量不同物料外，它们还能实现少量甚至是微量纯容积式物料点胶，并且与物料的粘度无关。



# TECHNICAL FEATURES 技术特色

-  Genuine volumetric dispensing  
真正的容积式点胶
-  Viscosity-independent dispensing  
与粘度无关的点胶
-  Dosage independent of input pressure  
点胶剂量与输入压力无关
-  Pressure-tight without valve  
无阀密封
-  Suck-back effect  
吸回功能
-  Easy cleaning  
易于清洗
-  Adjustable dispensing flow  
点胶流量可调
-  Dispensing pressures from 0 to 20 bar  
点胶压力0~20 bar

MORE INFORMATION  
CAN BE FOUND AT



[www.preeflow.com/en/  
products/1k-dispenser/](http://www.preeflow.com/en/products/1k-dispenser/)

# flowplus<sup>16</sup>

## OUR TIP 我们的诀窍

By continuously monitoring of the dosing process with the flowplus<sup>16</sup>, errors can be detected, and a reliable process established.

通过flowplus<sup>16</sup>对物料点胶过程进行连续监测，可以检测到错误，从而建立更加可靠的过程。





# ONE SENSOR, MANY APPLICATIONS

## 一个传感器，多种应用

### – flowplus<sup>16</sup>



Description 说明	flowplus <sup>16</sup>
Operating principle 工作原理	Gauge pressure sensor 表压传感器
Measuring range 测量范围	0 – 16 bar
Measuring tolerance 测量公差	± 2 % of measured value (FS) 测量值的± 2 % (FS)
Sample rate 采样率	3 kHz
Supply 电源	24 VDC ± 10 %
Output signal 输出信号	0.1 – 10 VDC
Operating temperature 工作温度	+15 °C to +45 °C
Mechanical connection 机械连接	Luer-Lock DIN EN 1707

#### DESCRIPTION 说明

Incorrect dispensing affects the quality of the entire process and leads to waste of the material. This can be due to a constriction or blockage within the dispensing needle, an incorrect distance to the substrate or air trapped in the material interrupting the material application.

不正确的物料点胶会影响整个过程的质量，并导致物料浪费。这可能是由于点胶针内的收缩或堵塞、与基板的不正确距离或物料中的空气阻碍了物料的输送。

By continuously monitoring the dispensing process with the flowplus<sup>16</sup>, errors can be detected, and a stable process established. Thanks to the standardized Luer-Lock connection, the high sampling rate of 3 kHz as well as the integrated pressure






sensing and compact size, the fields of application of the flowplus<sup>16</sup> are almost unlimited.

通过使用 flowplus<sup>16</sup> 持续监控点胶过程，可以检测到错误，从而建立更加稳定可靠的过程。由于标准化的 Luer-Lock 连接、3kHz 的高采样率以及集成的压力传感和紧凑的尺寸，flowplus<sup>16</sup> 的应用领域几乎是无限的。

flowplus<sup>16</sup> – the Plug and Play solution for: process monitoring – process optimization – process documentation – process automation.

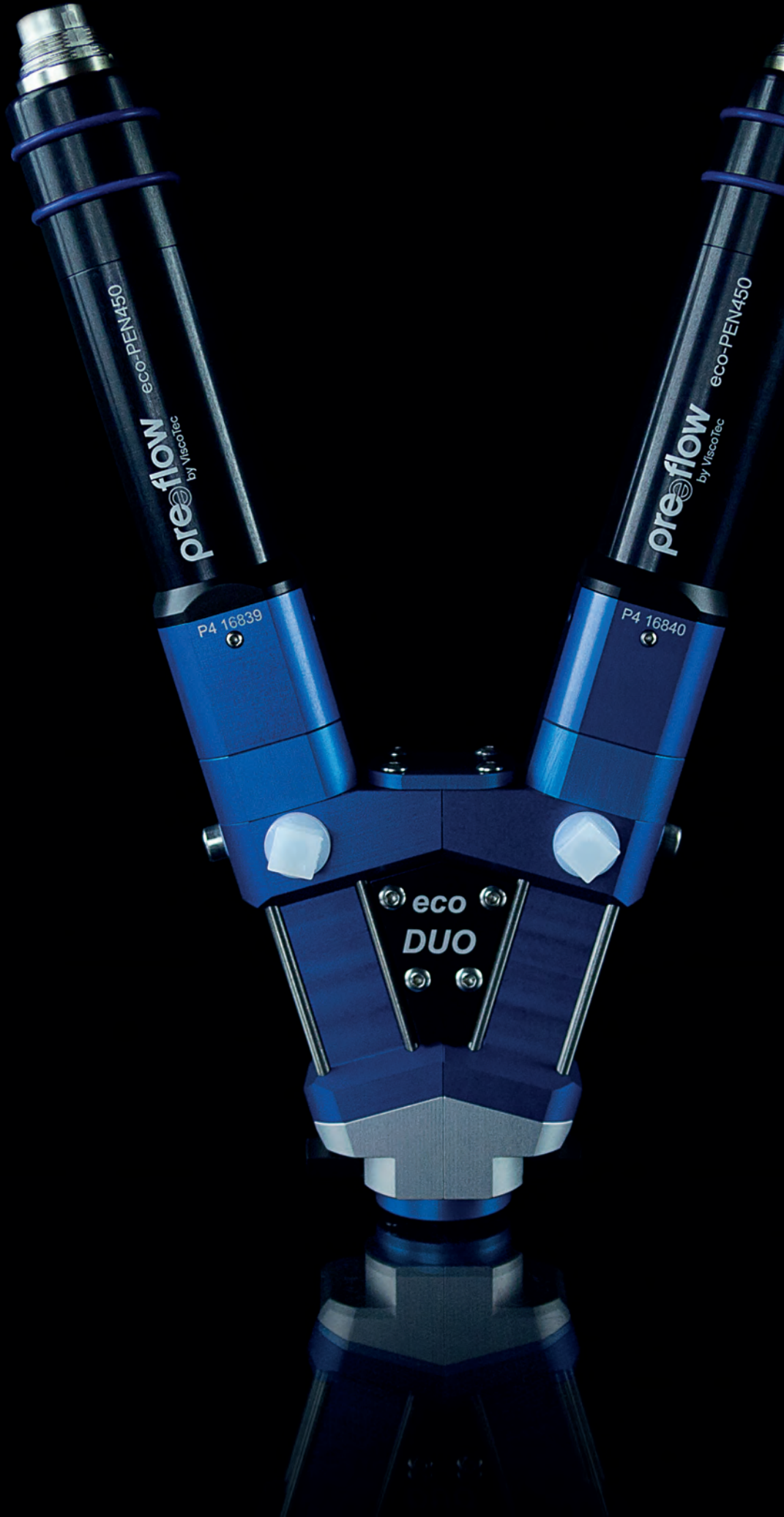
flowplus<sup>16</sup> 即插即用解决方案，可用于实现“流程监控——流程优化——流程文件化——流程自动化”。

#### AREAS OF APPLICATION 应用领域

-  Electronics  
电子产品
-  Analytics  
分析
-  Industrial  
工业
-  Life Science  
生命科学
-  Photonics  
光子学



# eco-DO



HOW IT WORKS 工作原理

The 2 component mixing and dispensing systems from preeflow®: true volumetric output for 2 component materials. The smallest quantities of 2 component fluids and pastes are precisely mixed and dispensed. The mixing ratio is set to the second decimal place by targeted control of the individual components. A clean, process-reliable dose is achieved regardless of fluctuations in viscosity.

preeflow® 的双组份混合和点胶系统：真正实现了双组分物料的容积式输出。双组份液体和糊状物的最小投配量是精确混合和投配的。通过对单组份物料的目标控制，将混合比设置为小数点后两位。无论物料的粘度如何，都能通过eco-DUO实现清洁、可靠的物料输送。



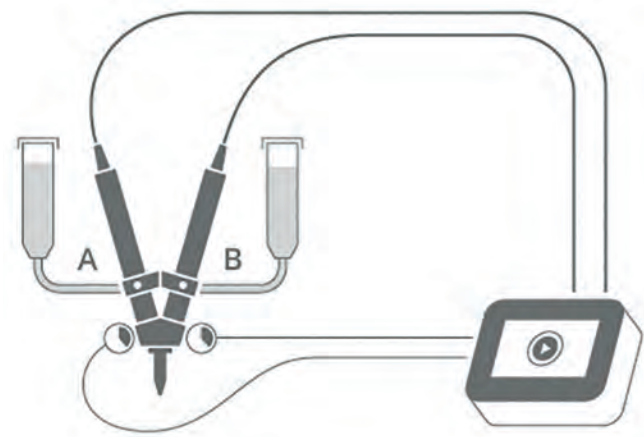
The preeflow® devices of the eco-DUO series are characterised by controlled thread break-off thanks to the suck-back effect, process reliability due to pressure monitoring and further functions. With simple and safe operation, the 2 component dispensers can be used widely. Experience for yourself precise mechanics combined with state-of-the-art digital control technology.

preeflow® 的 eco- DUO 系列点胶泵由于具备回吸功能，能实现可控制的螺纹剪断；其压力监测可以实现过程的可靠性，此外还具备一些其他功能。eco-DUO 系列双组份点胶泵操作简单、安全，应用范围广。欢迎您亲自体验这种精密机械和先进的数字控制技术。

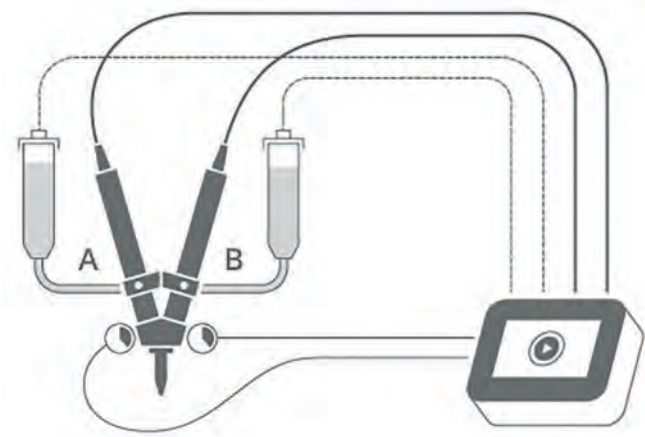
Description 说明	eco-DUO330	eco-DUO450	eco-DUO600
Art. No. 产品编号	21529	20639	21175
Measurements 外观尺寸	228 mm x 163 mm	228 mm x 163 mm	301 mm x 163 mm
Weight 重量	1230 g	1230 g	1880 g
Operating pressure 工作压力	0 – 20 bar	0 – 20 bar	0 – 20 bar
Max. dispensing pressure <small>(1) (4)</small> 最大输送压力 <small>(1) (4)</small>	40 bar	40 bar	40 bar
Viscosity 粘稠度	watery to pasty 水状到糊状	watery to pasty 水状到糊状	watery to pasty 水状到糊状
Volume flow <small>(3)</small> 容积流量 <small>(3)</small>	0.1 – 6.6 ml/min (at 1:1)	0.2 – 12 ml/min (at 1:1)	0.6 – 32.0 ml/min (at 1:1)
Min. dispensing quantity 最小投配量	0.005 ml	0.010 ml	0.030 ml
Dispensing accuracy <small>(2)</small> 输送精准度 <small>(2)</small>	± 1 %	± 1 %	± 1 %
Mix ratio 混合比例	1:1 – 10:1	1:1 – 10:1	1:1 – 10:1
Stator material 定子材料	VisChem (optional VisLas)	VisChem (optional VisLas)	VisChem (optional VisLas)
Material inlet 物料入口	G 1/8“ DIN/ISO 228	G 1/8“ DIN/ISO 228	G 1/4“ DIN/ISO 228
Material outlet 物料出口	static mixer, bayonet lock 静态混合器, 卡扣锁	static mixer, bayonet lock 静态混合器, 卡扣锁	static mixer, bayonet lock 静态混合器, 卡扣锁
Wetted parts 接触物料的部件	Aluminium, anodized / POM / stainless steel / VisChem / HD-PE (optional VisLas)	Aluminium, anodized / POM / stainless steel / VisChem / HD-PE (optional VisLas)	Aluminium, anodized / POM / stainless steel / VisChem / HD-PE (optional VisLas)
Operating conditions 工作温度	10 – 40 °C	10 – 40 °C	10 – 40 °C
Repeat accuracy 重复精确度	> 99 %	> 99 %	> 99 %

(1) Max. dispensing pressure and self-sealing decrease with decreasing viscosity, increase with increasing viscosity. Consult the manufacturer.  
(2) Volumetric dispensing as absolute deviation related to one revolution of the dispenser. Depends on the viscosity of the material dispensed.  
(3) Max. flow rate depends on viscosity, inlet pressure and mixing ratio.  
(4) Depending on the mixer.  
(1) 最大输送压力和自密封性，随粘度的降低而降低，随粘度的增加而增加。详情请咨询制造商。  
(2) 点胶精准度与点胶泵旋转一圈所输送的物料的绝对偏差有关。具体取决于所输送物料的粘稠度。  
(3) 最大流量取决于粘稠度、入口压力和混合比例。  
(4) 取决于混合器类型。

SYSTEM PRESENTATION 系统演示



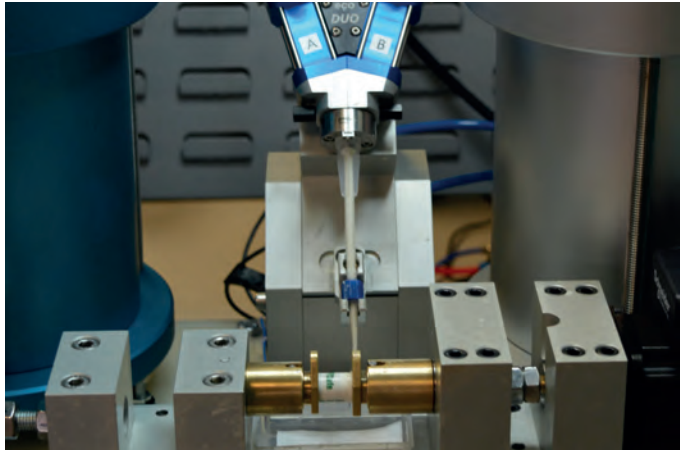
Self-levelling liquid, low-viscosity material, incl. sensor technology  
自调平液体, 低粘度物料, 包括传感器技术



Non-self-levelling liquids, medium to high viscosity material, incl. sensor technology and pressure feed  
非自流平液体, 中到高粘度物料, 包括传感器技术和压力进料

APPLICATION EXAMPLE 应用案例

Precise application, repeat accuracy, exact dispensing volume, viscosity independence and the right mixing ratio: the eco-DUO450 performs to your expectations. The 2 component micro-dispenser from preeflow® is therefore perfectly suited for applications in medical technology, for example. By using an eco-DUO450, the customer can benefit from numerous advantages such as increased productivity, lower material consumption and reduced waste.  
凭借着精确输送、重复的准确性、精确的投配量、与粘度无关和正确的混合比例等特性，eco-DUO450 能很好地满足客户的预期。因此，preeflow® eco-DUO 系列双组份微量点胶泵非常适合医疗技术应用。通过使用 eco-DUO450，客户可以从诸多优势中受益，例如提高生产力、降低材料消耗和减少浪费。



Ever smaller, ever thinner and ever more powerful - in the electronics industry, innovative and space-saving joining technologies are in demand that neither stand in the way of miniaturization nor mass production. The micro-dispenser, in particular the 2 component dispenser eco-DUO330, performs well with a minimum dose of 0.001 ml. In every adhesive application, no matter how fine it may be, such as when bonding miniature cameras into smartphones, the micro-dispenser proves itself with its clean adhesive application.  
越来越小、越来越薄、越来越强大——在电子工业中，创新和节省空间的连接技术既不妨碍小型化，也不妨碍大规模生产。微量点胶泵，特别是双组份点胶泵 eco-DUO330，有着良好的性能表现，其能实现 0.001ml 的最小投配量。在每种粘合剂应用中，无论它有多精细，例如将微型摄像头粘合到智能手机上时，该微量点胶泵都能凭借着清洁的粘合能力而成为此类应用的最佳选择。





# TECHNICAL FEATURES 技术特色

MORE INFORMATION  
CAN BE FOUND AT



[www.preeflow.com/en/  
products/2k-dispenser/](http://www.preeflow.com/en/products/2k-dispenser/)

-  Genuine volumetric dispensing  
真正的容积式点胶
-  Viscosity-independent dispensing  
与粘度无关的点胶
-  Dosage independent of input pressure  
点胶剂量与输入压力无关
-  Pressure-tight without valve  
无阀密封
-  Suck-back effect  
回吸功能
-  Easy cleaning  
易于清洗
-  Adjustable mixing ratio  
混合比例可调
-  Dispensing pressures from 0 to 40 bar  
点胶压力 0~40 bar

# eco- SPRAY



HOW IT WORKS 工作原理

ViscoTec’s precision volume dispenser enables applications in a wide variety of spray operations. The spray system consists of a revolutionary combination of the proven endless piston principle and a low-flow spray chamber. This guarantees perfect spraying of low to high viscosity material with high edge sharpness. ViscoTec的精密容积式点胶泵，能在应用中实现各种各样的喷雾操作。喷雾系统革命性地将“久经验证的无限循环活塞原理”和“低流量喷雾室”结合在一起。这保证了从低粘度到高粘度物料的完美喷雾，并且具有较高的边缘清晰度。The eco-SPRAY is particularly impressive when processing highly viscous materials. The system can apply and precisely position exact quantities independent of viscosity and input

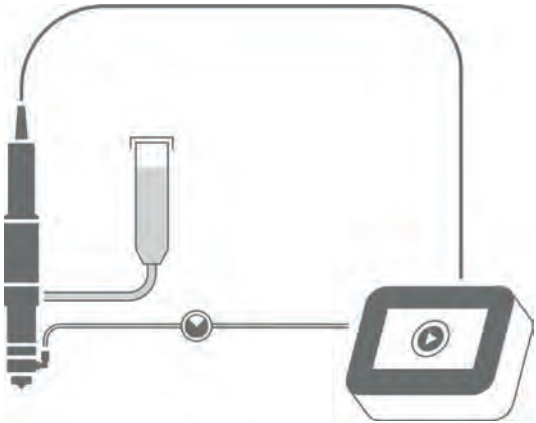
pressure. Depending on the desired layer thickness, the dose can be adjusted by simply changing either the air pressure, adhesive volume, distance to the substrate or the speed of the application. The utilization of the eco-SPRAY is intuitive. In addition, the combination of different needle diameters and supplied air caps allows individual adaptation to materials as well as to dispensing processes. 在处理高粘性物料时，eco-SPRAY 尤其令人印象深刻。该系统可以实现精确定位和精密投配量，完全与物料的粘度和输入压力无关。根据所需要的物料层厚度，该系统可以通过简单地改变气压、粘合剂体积、到基板的距离或投配速度来调整投配剂量。eco-SPRAY的使用简单直观。此外，不同的针直径和空气帽组合，允许单独调整物料和点胶过程。



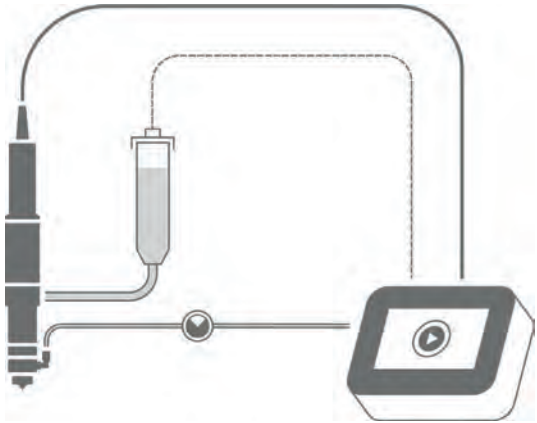
Description 说明	eco-SPRAY
Art. No. 产品编号	21448
Measurements 外观尺寸	length 228 mm, Ø 35 mm 长度 228 mm, Ø 35 mm
Weight 重量	650 g
Spray pattern 喷雾模式	Round jet (adjustable) 圆形喷射（可调）
Spray angle 喷雾角度	15 – 30 °
Viscosity 粘稠度	watery to pasty 水状到糊状
Volume flow <sup>(2)</sup> 容积流量 <sup>(2)</sup>	0.5 – 6.0 ml/min
Min. spray quantity 最小喷雾量	50 µl
Atomized air 雾化空气	0.1 – 6.0 bar
Spray accuracy <sup>(3)</sup> 喷雾精度 <sup>(3)</sup>	± 1 %
Nozzle diameter 喷嘴直径	Ø 0.2 mm / Ø 0.3 mm / Ø 0.5 mm
Stator material 定子材料	VisChem (optional VisLas)
Material inlet 物料入口	G 1/8“ DIN/ISO 228
Wetted parts 接触物料的部件	HD-PE / VisChem / stainless steel (optional VisLas)
Operating conditions 工作温度	+ 10 °C to + 40 °C
Repeat accuracy 重复精确度	> 99 %

(1) Max. dispensing pressure and self-sealing decrease with decreasing viscosity, increase with increasing viscosity. Consult the manufacturer.  
(2) Max. flow rate depends on viscosity and inlet pressure.  
(3) Volumetric dispensing as absolute deviation related to one revolution of the dispenser. Depends on the viscosity of the dispensing material.  
(1) 最大输送压力和自密封性，随粘度的降低而降低，随粘度的增加而增加。详情请咨询制造商。  
(2) 最大流量取决于粘稠度和入口压力。  
(3) 点胶精准度与点胶泵旋转一圈所输送的物料的绝对偏差有关。具体取决于所输送物料的粘稠度。

SYSTEM PRESENTATION 系统演示



Self-levelling liquid, low-viscosity material  
自流平液体，低粘度物料



Non-self-levelling liquids, medium to high viscosity material, incl. pressure feed  
非自流平液体，中到高粘度物料，包括压力进料

APPLICATION EXAMPLE 应用案例

The preeflow® eco-SPRAY has become an important element in the production of loudspeakers and headphones. The spray dispenser fulfils the most important aspects when applying a special coating, which acts as a damping layer on membranes of the loudspeakers. The damping material is applied homogeneously over the entire surface using the eco-SPRAY. Thanks to a low spray pressure of less than one bar, the spray pattern is perfectly uniform. For outstanding sound quality of the finished product. preeflow® eco-SPRAY点胶泵已经成为扬声器和耳机生产中的重要元素。当使用特殊涂层时，eco-SPRAY满足了最为重要的一个方面——在扬声器膜上喷涂阻尼层。eco-SPRAY将阻尼材料均匀地喷涂在整个表面上。由于喷雾压力低于1bar，喷雾模式非常均匀，完美地保证了扬声器成品的卓越音质。

Even materials that change their aggregate condition when the temperature rises can be sprayed automatically with the eco-SPRAY thanks to the optional integrated heating assembly. The temperature in the microspray dispenser, e.g. for wax or ethylene carbonate or other materials that change when the temperature rises, can be maintained above the melting temperature. Also perfect for high viscosity materials to enhance flowability. The supplied heating assembly cable is compatible with any standard heating controller. 即使是在温度升高时改变了物料的聚集条件，eco-SPRAY也可以通过可选的集成加热组件，实现物料的自动喷涂。eco-SPRAY中的温度可以保持在熔化温度以上(例如，对于蜡或碳酸乙烯酯或其他随着温度升高而变化的材料)。eco-SPRAY也非常适合喷涂高粘度物料，以提高流动性。配套的加热组件电缆与任何标准加热控制器兼容。





# TECHNICAL FEATURES

## 技术特色

MORE INFORMATION  
CAN BE FOUND AT



[www.preeflow.com/en/products/spraydispenser/](http://www.preeflow.com/en/products/spraydispenser/)

-  Spraying of defined quantities  
定量喷涂
-  Spraying independent of viscosity  
喷涂与粘度无关
-  Dosage independent of input pressure  
喷涂剂量与输入压力无关
-  Pressure-tight without valve  
无阀密封
-  Optional heating  
可选加热组件
-  Easy cleaning  
易于清洗
-  Adjustable omnidirectional jet  
全向喷涂可调
-  Uniform spray pattern  
均匀喷雾模式



# eco-control

# TECHNICAL FEATURES 技术特色

-  Fast Boot  
快速启动
-  Universal interfaces  
通用接口
-  Industry 4.0 ready  
工业4.0 Ready
-  Intuitive operability  
直观的可操作性
-  Plug 'n' Play  
即插即用
-  One for all  
一个控制器适合所有点胶泵
-  Simple machine integration  
简单的机器集成
-  Details on request  
牢固可靠的设计

WE WILL BE HAPPY TO  
ADVISE YOU



[www.preeflow.com/en/contact](http://www.preeflow.com/en/contact)

## ORIGINAL preeflow® ACCESSORIES 原装preeflow® 配件与耗材 & CONSUMER MATERIALS

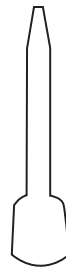
### HIGH PRECISION NEEDLES 高精度针

- Higher precision than standard dispensing needles
- Tapered tips for easy material flow
- Industrial Luer-Lock thread
- 比标准的点胶针精度更高
- 锥形尖端便于物料流动
- 工业级Luer-Lock螺纹



### STATIC MIXERS 静态混合器

- Suitable for a wide range of cartridge sizes and material ratios
- Reduces material waste
- Suitable for low, medium and high viscosity materials
- 适用于各种料盒尺寸和配料比例
- 减少物料浪费
- 适用于低、中、高粘度物料



### DISPENSING NEEDLES 点胶针

- Standard dispensing needles for the eco-PEN
- Ideal for highly viscous or filled materials (silicones, solder pastes, greases etc.)
- Luer-Lock thread made of polypropylene
- 用于eco-PEN的标准点胶针
- 适用于高粘性或填充材料（硅酮、焊膏、润滑脂等）
- 由聚丙烯制成的Luer-Lock螺纹



### FURTHER ACCESSORIES 其他配件

The original preeflow® mounting, process and electronic accessories for the eco-PEN, eco-DUO and eco-SPRAY are always in stock.

用于eco-PEN、eco-DUO和eco-SPRAY的安装、工艺的所有原装配件，都有现货库存。



ACCESSORIES



DISPOSABLES



# 1 & 2 COMPONENT APPLICATIONS

## 单组份和双组份点胶泵应用聚焦

### IN FOCUS

#### BONDING 粘合

##### ADHESIVE DISPENSING FOR INDUSTRIAL ASSEMBLY

##### 工业装配中的粘合剂点胶

Bonding is also referred to as structural gluing with a dispenser. Almost all material combinations are bonded with volumetric adhesive dispensing. The adhesive dispensers from preeflow® guarantee a reliable and stable process. Absolute precision makes the dispensing systems for adhesives the ideal application partner.

粘合，也被称为用点胶泵进行结构性胶合。几乎所有的材料结合都是通过容积式粘合剂点胶来实现的。preeflow® 的粘合剂点胶泵，保证了粘合过程的可靠性和稳定性。点胶泵实现的绝对精度，使其成为粘合应用的理想选择。



#### OPTICAL BONDING 光学粘合

##### ADHESIVE DISPENSING FOR BETTER IMAGE QUALITY

##### 粘合剂点胶，以获得更好的图像质量

Optical bonding is the joining of two layers of material with a clear adhesive. The adhesive is applied with a dispenser. Compared to other methods, this method enables a significantly improved display performance. The optical bonding process eliminates the air gap between the glass and the display. This results in increased robustness and excellent image quality.

光学粘合是用透明粘合剂将两层材料结合到一起。用点胶泵涂抹粘合剂。与其他方法相比，该方法可以显著改善显示性能。光学粘合过程消除了玻璃和显示器之间的空隙，这不但能增强结合效果，同时还能实现更加卓越的图像质量。



#### CONFORMAL COATING 保形涂层

##### COMPREHENSIVE APPLICATION OF A PROTECTIVE VARNISH

##### 一种防护漆的综合应用

Conformal coating is the application of a protective coating. Opaque or transparent lacquers are applied partially or completely to printed circuit boards. The materials are usually highly viscous, thermal or UV-curing. They are dispensed onto a microscope slide in a thin or thick film process.

保形涂层是一种保护层。将不透明或透明漆部分或全部地涂在印刷电路板上。这些材料通常是高粘性、热固化或紫外固化材料。它们以薄膜或厚膜的方式涂敷到显微镜载玻片上。



#### DAM & FILL 筑坝&填充

##### PROTECTION OF HIGHLY COMPLEX AREAS

##### 高度复杂区域的保护

Dam and fill methodology is used to protect highly critical areas on electronic assemblies, such as wire bonds. The first step is to apply a highly viscous barrier – the dam. In the next step, the dammed area is filled with a lower viscosity, self levelling material. Accurate amounts of dispensed dam and fill resins are essential for this process.

筑坝和填充方法用于保护电子组件上的重要区域，如电线连接。第一步是采用高粘性屏障——筑坝。接下来，在筑坝区域填充较低粘度的自流平材料。准确地投配筑坝和填充树脂的用量，是非常关键的一个环节。



## GLOBAL TOP 顶部密封

### PRECISE DISPENSING FOR RELIABLE PROTECTION 精确点胶，提供可靠保护

The glob top encapsulation protects highly sensitive electronic components safely and reliably. External environmental influences or mechanical stress no longer have a negative effect on the components. Epoxy or fast curing UV resins are used for this application. If this encapsulation is underneath the component, it is called an underfill – providing structural strength and stress relief as well as environmental protection.

顶部密封（Global Top）可以安全可靠地保护高度敏感的电子元件，使得外部环境或机械应力不再对部件产生负面影响。在这类应用中，常用的物料有环氧树脂或快速固化的紫外树脂。如果该封装位于组件下方，则称为底部填充——提供结构强度和应力消除以及环境保护。



## UNDERFILL 底部填充

### ADHESIVE DISPENSING FOR CONDUCTIVE ADHESIVES 导电粘合剂的点胶

Electrically conductive adhesives can be used for interconnects between components and/or circuitry. They are usually thermally cured epoxies. Precision application is needed to prevent short circuits.

导电粘合剂可用于部件和/或电路之间的互连。它们通常是热固化的环氧树脂。为了防止短路，需要精确使用。



## MICRODISPENSING 微量点胶

### HIGH PRECISION DISPENSING OF LIQUID MATERIALS 液体物料的高精度点胶

Microdispensing means the dispensing of flowable material within a volume range of one microliter. The dosing is carried out by means of a dispenser. The dispensed form can be either dots or beads – as 1 component or 2 component dispensing. Exact precision and a high level of repeat accuracy are of particular importance here. At the same time, the dispensers must be absolutely reliable.

微量点胶是指在1微升的体积范围内，点胶可流动的材料。通过点胶泵进行定量物料输送。点胶形式可以是点状或珠状，可以采用单组份或双组份方式。在这种应用中，精确度和高重复精度尤为重要。同时，要求点胶泵必须绝对可靠。



## ENCAPSULATING 封装

### DISPENSING OF POTTING COMPOUND FOR THE ELECTRONICS INDUSTRY 电子工业中封装化合物的点胶

Electronic potting compound applied to a specific component or surface: this is how the encapsulating process can be described. Adhesive dispensing protects the component during transport or from environmental influences. This includes vibrations, shock, moisture, dust and extreme temperatures. However, the electronic potting compound not only protects, it also improves electrical insulation, chemical resistance and protection against damage.

用于特定部件或表面的电子封装化合物：这就是如何实现封装过程。电子密封胶能在运输过程中或是外部环境中，保护电子部件。这些可能影响电子器件的因素包括振动、冲击、潮湿、灰尘和极端温度。电子密封胶不仅能对电子器件起到保护作用，它还能提高电气绝缘性、耐化学性，防止器件受损。





## 德国总部

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微信公众号



ViscoTec 企业码

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