H.SIGRIST & PARTNER AG

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preeflow by ViscoTec

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Summary

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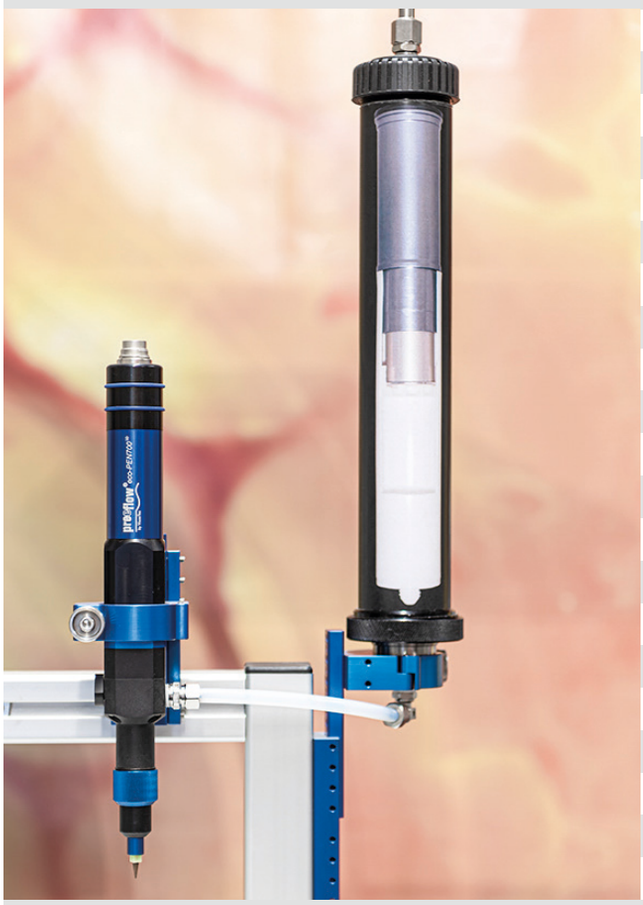
eco-PEN

Functionality



The eco-PEN is a purely volumetric dispensing system designed for applying the smallest quantities of single-component fluids. Thanks to the proven endless piston principle, it delivers fluids from watery to pasty with precision. Regardless of viscosity fluctuations, the result is a clean and process-reliable dispense.

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 use as desktop units at manual workstations as well as for semi- and fully automated operations

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eco-DUO

Functionality

The 2K mixing and dispensing systems from preeflow® are purely volumetric solutions for two-component materials. They precisely mix and dispense the smallest quantities of two-component fluids and pastes. By accurately controlling each component, the mixing ratio can be set to the second decimal place. Regardless of viscosity fluctuations, a clean and process-reliable dispense is achieved.

Controlled bead break-off is ensured by the retraction effect, and process reliability is supported by pressure monitoring, along with other features that characterize the preeflow® eco-DUO series. Thanks to simple and safe operation, the 2K dispensers can be used flexibly. Experience precise mechanics combined with state-of-the-art digital control technology.

eco-PEN

Technical data

Designation	eco-PEN XS 180	eco-PEN300	eco-PEN330
Article number:	PF176836	PF20505	PF21525
Dimensions:	length 178 mm	length 216 mm, Ø 33 mm	length 225 mm, Ø 33 mm
Weight:	175 g	280 g	300 g
Max. dispensing pressure(1)**:**	20 bar	20 bar	20 bar
Volume flow:	0,0044 – 0,35 ml/min	0,12 – 1,48 ml/min	0,2 – 3,3 ml/min
Min. dispensing quantity:	0,25 µl	0,001 ml	0,002 ml
Stator materia:	vidur-C1	VisChem	VisChem (optional VisLas)
Material inlet:	Luer-Lock adapter for cartridge (cartridge can be rotated 360°) / Adapter for hose connection (Ø - 3mm)	G 1/8“ DIN/ISO 228	G 1/8“ DIN/ISO 228
Wetted parts:	POM / vidur-C1 / stainless steel / HD-PE	POM / stainless steel / VisChem / HD-PE	POM / stainless steel / VisChem / HD-PE (optional VisLas)

All eco-PEN

Repeatability:	**> 99 %**
Operating conditions:	**10 – 40 °C**
Material outlet:	**Luer-Lock (patented)**
Dosing accuracy(2)**:**	**± 1 %**
Viscosity:	**watery to pasty**
Operating pressure(3)**:**	**0 – 6 bar**

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Designation	eco-PEN450	eco-PEN600	eco-PEN700^{3D}
Article number:	PF20092	PF20048	PF20723
Dimensions:	length 228 mm, Ø 33 mm	length 274 mm, Ø 40 mm	length 274 mm, Ø 40 mm
Weight:	300 g	650 g	650 g
Max. dispensing pressure(1)**:**	20 bar	20 bar	10 bar
Volume flow:	0,5 – 6,0 ml/min	1,4 – 16,0 ml/min	5,3 – 60,0 ml/min
Min. dispensing quantity:	0,004 ml	0,015 ml	0,060 ml
Stator materia:	VisChem (optional VisLas)	VisChem (optional VisLas)	VisChem
Material inlet:	G 1/8“ DIN/ISO 228	G 1/4“ DIN/ISO 228	G 1/4“ DIN/ISO 228
Wetted parts:	POM / stainless steel / VisChem / HD-PE (optional VisLas)	POM / stainless steel / VisChem / HD-PE (optional VisLas)	POM / stainless steel / VisChem / HD-PE

(1) Max. dispensing pressure and selfsealing decrease with decreasing viscosity, increase with increasing viscosity. Consult with the manufacturer.

(2) Volumetric dispensing as absolute variation relative to one dispenser rotation. Depends on the viscosity of the dispensing material.

(3) For non-self-leveling fluids

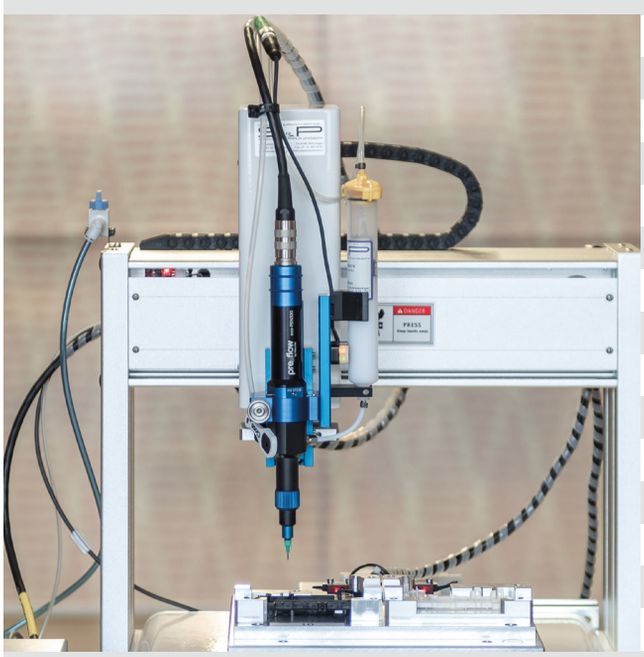
eco-PEN

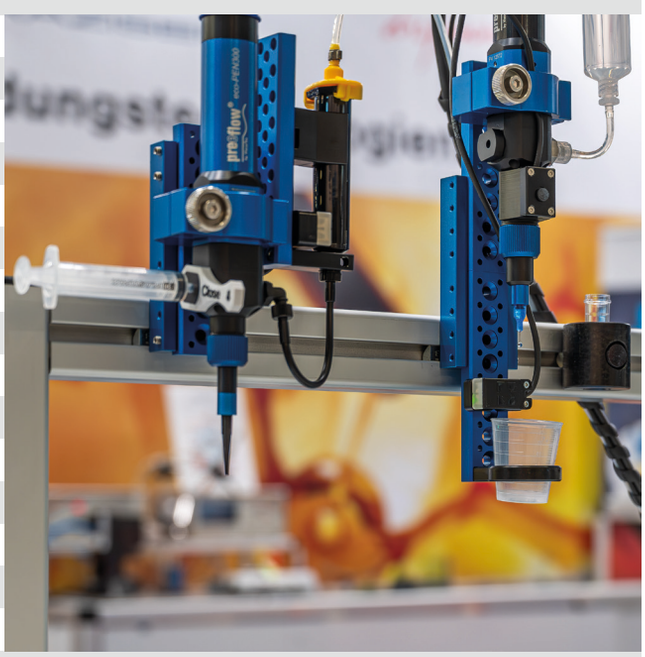
Application examples

Especially in the electronics sector, more and more devices and housings are being bonded instead of screwed or plugged. With the eco-PEN series, preeflow® meets the market's demand for miniaturization. The micro-dispensers achieve dispensing results as small as 0.001 ml, enabling them to handle almost any required dispensing application.

Advantages gained by integrating eco-PENs into a system include precision with repeatability of ≥ 99%, a stable process, and a clean dispensing application. In line with the "plug'n'dose" principle, both the 1K eco-PEN and the 2K eco-DUO dispensers can be connected to the control unit immediately after installing the stator. Dispensing is then possible right away. Both the dispenser and the control unit are intuitively easy to operate.

In addition to simple commissioning and the capability to process a wide range of materials, other benefits include viscosity-independent, purely volumetric dispensing in small and micro quantities.





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Spezial versions

eco-PEN300/330/450/600/700^{3D}

Article number-Description
PF22353-Precision-volume-dispenser **eco-PEN300** VA kpl., rotor hvc., stator VisChem
PF22113-Stainless steel kit **eco-PEN300**
PF21624-Sealing set with housing **eco-PEN300/330/450** PTFE
PF22095-Precision-volume-dispenser **eco-PEN330** cpl., Stator VisLas
PF22248-Precision-volume-dispenser **eco-PEN330** DC cpl., diamond coated rotor, stator VisLas
PF22334-Precision-volume-dispenser **eco-PEN330** VA kpl., rotor hvc., stator VisChem
PF22336-Precision-volume-dispenser **eco-PEN330** VA & DC cpl., diamond coated rotor, stator VisLas
PF21860-Stator for **eco-PEN330** (Mat: VisLas)
PF22203-Bearing housing with rotor set **eco-PEN330** DC cpl.
PF22114-Stainless steel kit **eco-PEN330** + **450**
PF21577-End piece **eco-PEN330/450** VA stainless steel with Luer Lock
PF22097-Precision-volume-dispenser **eco-PEN450** cpl., Stator VisLas
PF22250-Precision-volume-dispenser **eco-PEN450** DC cpl., diamond coated rotor, stator VisLas
PF22339-Precision-volume-dispenser **eco-PEN450** VA kpl., rotor hvc., stator VisChem
PF22338-Precision-volume-dispenser **eco-PEN450** VA & DC cpl., diamond coated rotor, stator VisLas
PF21384-Stator for **eco-PEN450** (Mat: VisLas)
PF22204-Bearing housing with rotor set **eco-PEN450** DC cpl.
PF22102-Precision-volume-dispenser **eco-PEN600** cpl., Stator VisLas
PF22212-Precision-volume-dispenser **eco-PEN600** DC cpl., diamond coated rotor, stator VisLas
PF22343-Precision-volume-dispenser **eco-PEN600** VA & DC cpl., diamond coated rotor, stator VisLas
PF21438-Stator for **eco-PEN330** (Mat: VisLas)
PF22205-Bearing housing with rotor set **eco-PEN600** DC cpl.
PF22115-Stainless steel kit **eco-PEN600** + **700**
PF21625-Sealing set with housing **eco-PEN600/700** PTFE
PF22344-Precision-volume-dispenser **eco-PEN700** VA kpl., rotor hvc., stator VisChem

Article number:	Description
ME3000132	Form wrench for eco-PEN bleed screw Variant 2

eco-DUO

Technical data

Designation	eco-DUO330	eco-DUO450	eco-DUO600
Article number:	PF21529	PF20639	PF21175
Measurements:	228 mm × 163 mm	228 mm × 163 mm	301 mm × 163 mm
Weight:	1230 g	1230 g	1880 g
Volume flow:(4)**:**	0,1 – 6,6 ml/min (at 1:1)	0,2 – 12 ml/min (at 1:1)	0,6 – 32 ml/min (at 1:1)
Min. dispensing quantity:	0,005 ml	0,010 ml	0,030 ml
Material inlet:	G 1/8“ DIN/ISO 228	G 1/8“ DIN/ISO 228	G 1/4“ DIN/ISO 228

All eco-DUO

Operating pressure(1)**:**	**0 – 20 bar**
Max. dispensing pressure(2)(3)**:**	**40 bar**
Viscosity:	**watery to pasty**
Dispensing accuracy(5)**:**	**± 1 %**
Mixing ratio:	**1:1 – 10:1**
Stator material(6)**:**	**VisChem**
Material outlet:	**static mixer, bayonet lock**
Wetted parts(6)**:**	**aluminum, anodized / POM / stainless steel / VisChem / HD-PE**
Operating conditions:	**10 – 40 °C**
Repeatability:	**> 99 %**

(1) Non-self-levelling-fluid

(2) Max. dispensing pressure and self-sealing decrease with decreasing viscosity, increase with increasing viscosity. Consult the manufacturer.

(3) Depending on the mixer

(4) Max. flow rate depends on viscosity, inlet pressure and mixing ratio.

(5) Volumetric dispensing as absolute deviation related to one revolution of the dispenser. Depends on the viscosity of the material dispensed.

(6) The listed materials are standard. Other variants are available on request, e.g. stator VisLas / drive train with diamond-coated rotor / PTFE seals.

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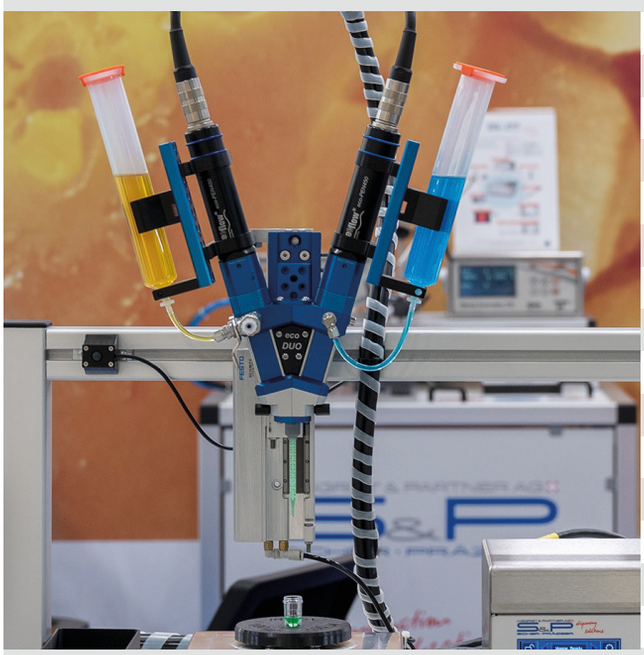
eco-DUO

Description

Precise application, repeat accuracy, exact dispensing volume, viscosity independence and the right mixing ratio: the ecoDUO450 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.

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.



eco-DUOMIX

Technical data

Designation	eco-DUOMIX
Article number:	PF22108
Measurements:	228 mm × 163 mm
Weight:	1800 g
Operating pressure(5)**:**	20 bar
Max. dispensing pressure(1)**:**	20 bar
Viscosity:	watery to pasty
Volume flow(3)**:**	0,2 – 12 ml/min (at 1:1)
Min. dispensing quantity(3)**:**	0,008 ml
Dispensing accuracy(2)**:**	± 1 %
Mix ratio:	1:1 – 10:1
Stator material:	VisChem (optional VisLas)
Material inlet:	G 1/8“, DIN/ISO 228
Material outlet:	LuerLock
Wetted parts:	Anodized aluminium / Stainless steel / VisChem / FFKM / POM / PE-HD
Operating conditions:	10 – 40 °C
Repeat accuracy:	> 99 %
Speed mixer(3)**:**	10 bis 1000 U/min

(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.

(5) Non-self-levelling-fluid

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eco-DUOMIX

Functionality and scope of delivery

Functionality

Instead of a mixing helix, the eco-DUOMIX is equipped with a mixing capsule optimized for dead space, which can be used for dynamic mixing for the first time. Materials with the same and/or different viscosities were developed and evaluated.

The dead space optimized mixing capsule used, instead of a mixing spiral, is available as a consumable and is installed directly at the outlet of the dispenser. Inside the capsule, the motordriven mixer ensures optimum mixing, even of components that are difficult to process, despite the small volume.

An exact application of even the smallest sealing beads is achieved by means of a replaceable metal dispensing needle, which is mechanically connected to the mixing capsule.

Scope of delivery

Complete package eco-DUOMIX450

consiting of:

Dispenser eco-DUOMIX450

Controler eco-Control EC-200 2.0 DUOMIX, power supply incl.

2 x sensor dosing pressure monitoring

Please note operating manual and installation guide, if not followed, the equipment will be damaged!

eco-SPRAY

Technical data

Designation	eco-SPRAY
Article number:	PF21448
Measurements	length 228 mm, Ø 35 mm
Weight	650 g
Volume flow (2)	0,5 – 6,0 ml/min
Min. spray quantity	50 µl
Atomized air	0,1 – 6,0 bar
Spray accuracy (3)	± 1 %
Nozzle diameter	Ø 0,2 mm / Ø 0,3 mm / Ø 0,5 mm
Stator material	VisChem (optional VisLas)
Material inlet	G 1/8“ DIN/ISO 228
Wetted parts	HD-PE / VisChem / stainless steel
Operating conditions	+ 10 °C to + 40 °C
Repeat accuracy	> 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

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eco-SPRAY

Functionality and Application Examples

Functionality

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.

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.

Application Examples

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.

Even materials that change their aggregate condition when the temperature rises can be sprayed automatically with the ecoSPRAY 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.

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eco-CONTROL

Technical data

Designation	EC200 2.0	plug'n'dose 2.0
Article number:	PF21793	PF177047
Measurements	230 × 175 × 85 mm	112 × 42 × 28 mm
Weight	2900 g	ca. 110 g
Power supply voltage	110 – 230 V AC, 50/60 Hz	24 V DC
Electricity consumption	max. 100 VA	65 VA/2,7 A
Entry	0 – 7 bar	
Operating modes	Start-Stop / quantity	
Display	7“ TFT with capacitive touch	-
Motor control	via programs, external via analog signal 0-10 V or 4-20 mA	
Connector for level sensor	yes	
External start	24 V via terminal block	
Program	internal memory for max. 100 dispensing programs	
Interface	Digital I/O, analog inputs, RS232, USB, (Ethernet)	

Subject to technical modifications.

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eco-CONTROL EC200 2.0

Functionality

The preeflow® controllers simplify every dispensing process. They are perfectly matched for all dispensers within the eco-PEN, eco-DUO and eco-SPRAY series.

The eco-CONTROL EC200 2.0 serves primarily to control and parameterize the preeflow® dispensers. In addition, pressure monitoring is carried out by the controller for a reliable process with precise dispensing results.

The control unit can be easilyv integrated into fully automatic systems and meets all requirements of modern dispensing processes.

The eco-CONTROL EC200 2.0 offers a compact solution with an integrated power supply unit. The control unit also offers options for pressure and temperature monitoring, 100 program memory locations and enables fast and clean storage of programs. The control unit can also be integrated with PLC systems.

The plug‘n‘dose (eco-PEN) and plug‘n‘mix (ecoDUO) are used for integration into larger production lines and enable reliable and volumetric dispensing.

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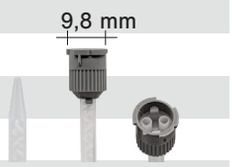
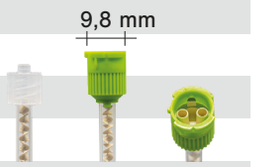
Mixing tube

Bayonet connection, static



Conical tip, material PP

Article number	l-mm	i-Ø mm	o-Ø mm	elements
MR5000100	50	2,5	3,9	12
MR5000101	61	3,2	4,8	12
MR5000102	74	3,2	4,8	16



Tip Luer Lock, material PP

Article number	l-mm	i-Ø mm	o-Ø mm	elements
MR5000103	68	3,2	5,0	16

Mixing tube extension, Luer-Lock connection

Article number	l-mm	i-Ø mm	o-Ø mm	elements
MR5000104	50	2,5	3,5	16
MR5000114	100	2,5	3,5	16

Mixing tube extension, tip Luer-Lock, Luer-Lock connection

Article number	l-mm	i-Ø mm	o-Ø mm	elements
MR5000106	60	2,5	3,5	16

Conical tip, material PP

Article number	l-mm	i-Ø mm	o-Ø mm	elements
MR5000107	77	3,0	4,8	16

Stepped tip, material PP

Article number	l-mm	i-Ø mm	o-Ø mm	elements	accessories
MR5000108	112	5,4	7,1	16	BG3000232
MR5000123	133	6,5	7,1	20	BG3000232

QUADRO™, tip Luer-Slip, material PP

Article number	l-mm	i-Ø mm	o-Ø mm	elements
MR5000117	122	5,5	6,9	24

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dispensing solutions

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