

# Systemec<sup>®</sup> Debubbler Series

## For Instrument Manufacturers

### Remove bubbles, dissolved gas, or both!

Dissolved gases and bubbles in system liquids cause dispense volume anomalies in many instruments, negatively affecting both dispense precision and analytical accuracy. Now you have a choice of components for actively removing bubbles with or without also removing dissolved system gases. Online vacuum degassing offers operating convenience, high efficiency, and low operating costs compared to other common degassing technologies.

#### Active Debubbler

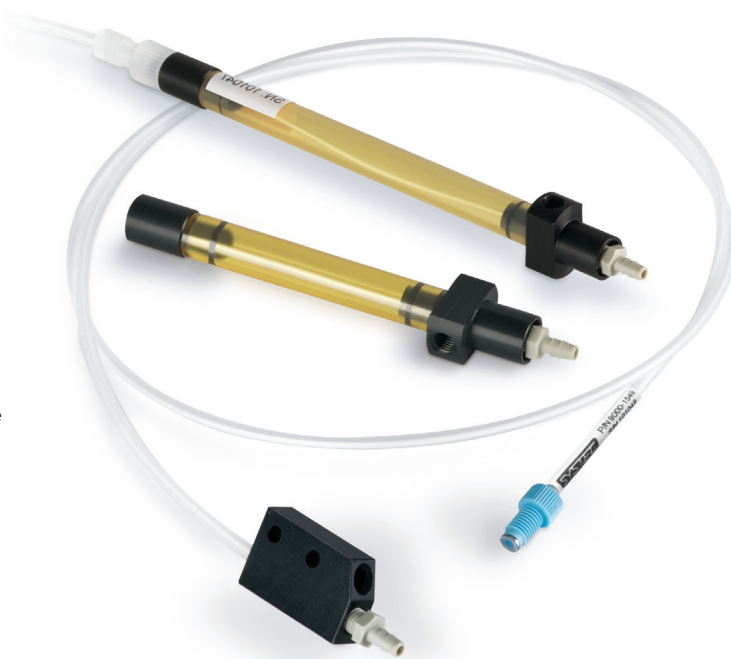
Combines a bubble trap with membrane vacuum degassing for point of use bubble removal.

#### Degasser/Debubbler

Active bubble removal and fluidic degassing to eliminate and prevent downstream bubble interference.

#### Transfer-Line Degasser

Removes dissolved gases during fluid transfer to prevent bubble formation and interference effects.



#### Benefits

	Active Debubbler	Debubbler/Degasser	Transfer-Line Degasser
Perfect for applications that require dissolved gas like oxygen for reaction kinetics	✓		
Improves dispense precision by capturing and removing bubbles	✓	✓	
Eliminates false positives and reduces reagent waste by improving instrument performance	✓	✓	
Easily integrates into fluidic path	✓	✓	✓
Creates stable instrument performance across system and environmental fluctuations	✓	✓	✓
Prevents the formation of bubbles downstream of the degasser		✓	✓
Eliminates fluctuations for improved detector sensitivity and accuracy by preventing bubble formation		✓	✓
Improves fluidic system reliability because coaxial design reduces the number of connections			✓
Flexible design can be implemented as transfer line in new instruments or existing instruments that don't have space available			✓
Minimizes fluidic system internal volumes to reduce reagent cost			✓

Specifications (all platforms)

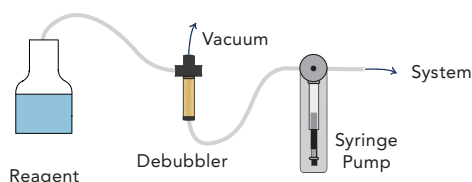
	Active Debubblers	Degasser/Debubblers	Transfer-Line Degasser
<b>Bubble Removal (volume of air removed/min @ 10 mL/min H<sub>2</sub>O)</b>	Up to 20 cc	Up to 30 cc	N/A
<b>Degassing Efficiency† @ 1 mL/min H<sub>2</sub>O</b>	N/A	2.5 mL size: 36% O <sub>2</sub> removal 5.0 mL size: 55% O <sub>2</sub> removal	< 4 ppm dissolved O <sub>2</sub> at 5 mL/min
<b>Membrane Material</b>	PORIDEX™	PORIDEX	PORIDEX
<b>Wetted Materials</b>	Poridex, Polyolefin, FEP, ETFE, Ultem®	Poridex, Polyolefin, FEP, ETFE, Ultem	Poridex, Polyolefin, FEP, ETFE
<b>Solvent Compatibility</b>	Solutions > 50% aqueous. Not compatible with detergent concentrations > 0.05%.		
<b>Standard Bubble Trap Volume</b>	2.5 / 5.0 mL	2.5 / 5.0 mL	N/A
<b>Transfer-Line Volume</b>	N/A	2.5 / 5.0 mL	< 4 mL
<b>Maximum Operating Pressure</b>	200 kPa (30 psi) @ 25 °C		
<b>Maximum Operating Temperature</b>	40 °C		
<b>Recommended Vacuum Level</b>	Minimum 16 kPa absolute		
<b>Liquid Connection:</b>	1/4-28 fitting system		
<b>Vacuum Connection:</b>	Tubing vacuum port(s) for 1/8" (3 mm) ID elastomeric tubing		
<b>Pressure Drop:</b>	0.8 mm Hg / mL / min (assumes laminar flow and viscosity of 1 cP)		

† Debubbling / degassing efficiency can be optimized based on flow rate, fluid to be degassed, and gas to be removed

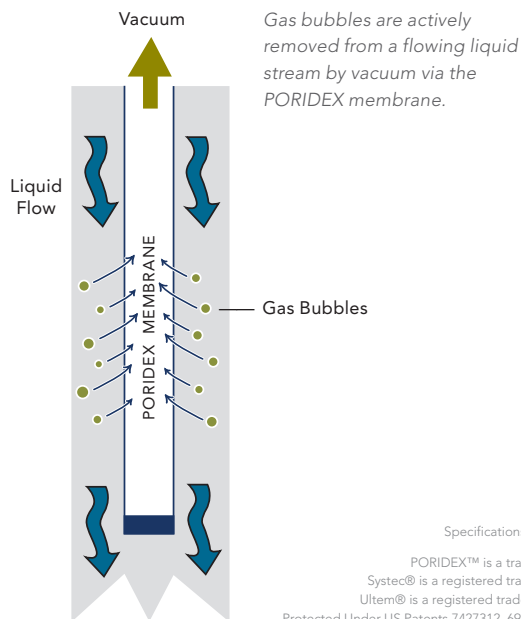
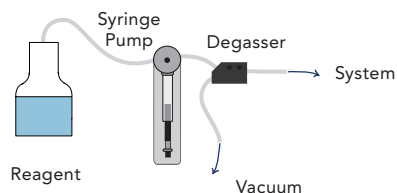
Available Standard Configurations

Systec Part Number	Description	Standard Bubble Trap Size	Transfer-Line Length	Internal Volume	Max Bubble Capacity
9000-1540	2.5 mL Active Debubbler	2.5 mL	-	2.5 mL	2.5 mL
9000-1541	5 mL Active Debubbler	5 mL	-	5 mL	5 mL
9000-1544	2.5 mL Debubbler/Degasser	2.5 mL	17.5" (444.5 mm)	2.5 mL in transfer line + 2.5 mL in bubble trap	2.5 mL
9000-1545	5 mL Debubbler/Degasser	5 mL	34" (863.6 mm)	5 mL in transfer line + 5 mL in bubble trap	5 mL
9000-1549	1.1 m Transfer-Line Degasser	-	43" (1.1 m)	4 mL	N/A

Typical Debubbler Implementation



Transfer-Line Degasser Implementation



Gas bubbles are actively removed from a flowing liquid stream by vacuum via the PORIDEX membrane.

Specifications are subject to change without notice.

PORIDEX™ is a trademark of IDEX Health & Science LLC.  
Systec® is a registered trademark of IDEX Health & Science LLC.  
Ultem® is a registered trademark of General Electric Corporation.  
Protected Under US Patents 7427312, 6949312, 7144443, and patents pending.  
©2012 IDEX Health & Science LLC