FLUIDIC PRODUCTS AND INFORMATION

BIOTECH is a Premium Distributor for IDEX Health & Science

Degassers

IDEX HEALTH & SCIENCE | BIOTECH

Intelligent Solutions for Life™

Fluidics | Optics | Consumables | Assemblies

GLOBAL PREMIUM DISTRIBUTOR FOR IDEX

GLOBAL PREMIUM DISTRIBUTOR
Biotech AB in Sweden/Europe (Headquarter), Biotech USA LLC and Bionik Inc Japan are Global Premium Distributors of IDEX Health & Science.

LOCAL DISTRIBUTORS
In almost every European country we work in close co-operation with local distributors that supports you with excellent daily service, long experience and highest level of technical assistance.

FAST DELIVERY
With several weekly shipments from IDEX manufacturing sites in US, together with our extensive Swedish warehouse, we support the European & Global market with short delivery times as well as fast answers on technical questions and a high level of flexibility.

FULL IDEX ASSORTMENT
With the full IDEX assortment of components for fluidic systems along with our long experience and know-how in the field we can assure you to always do our very best in supplying you with excellent solutions and products. Customized OEM solutions, especially in the field of degassing, is something we offer to instrument manufacturers globally.

BIOTECH + IDEX =
EVERYTHING FOR THE LAB

KNOW-HOW AND A WIDE ASSORTMENT

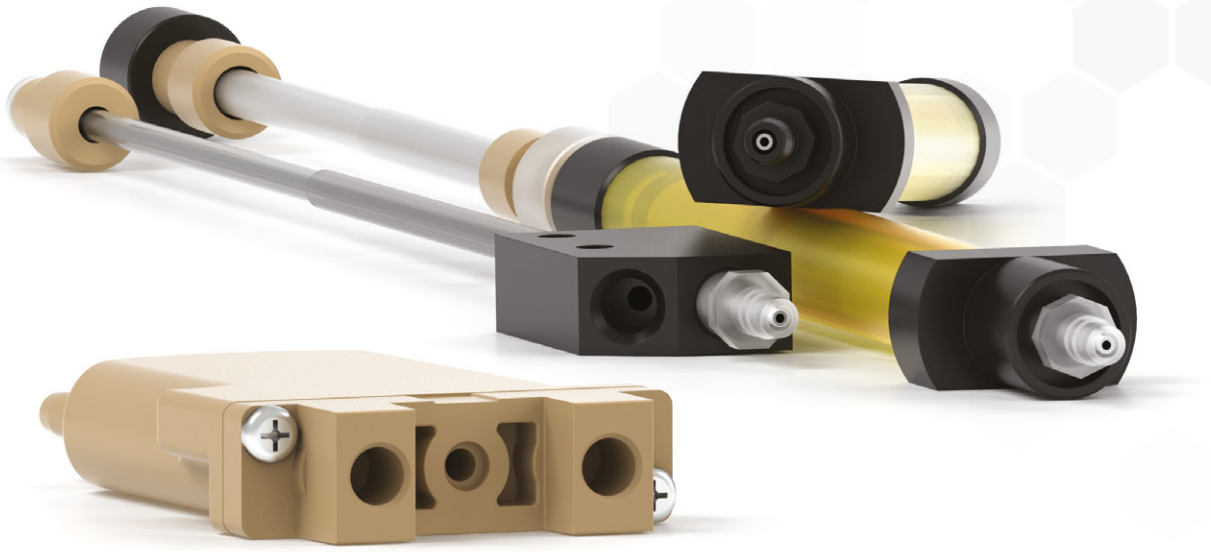
As Global Premium Distributor for IDEX we have special know-how about their assortment and can provide you with the right mix of products for a successful lab.

We have cutting edge knowledge to tailor the system for laboratories' specific needs for fluidic handling. You will find a wide range of products to suit every possible flow rate and type of fluid. In this field, we offer a number of well-known brands, such as Systec, Upchurch, Rheodyne and Isolation Technologies - all to give you the best solutions.

INNOVATIVE PRODUCTS FOR FLUIDIC SYSTEMS

www.biotech.se

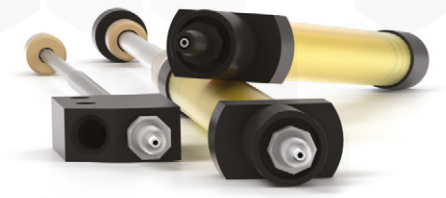
BIOTECH



Degassers

Degassers improve fluidic instrument precision and reliability by removing dissolved gases from fluids before they outgas and form problem causing bubbles. Three main types of bubble removing products are available. AF based degassers offer the widest range of chemical compatibility and are used to eliminate retention shifts and baseline fluctuations. Silicone based degassers offer the highest flow rate capabilities for water based systems such as diagnostic and life science instrumentation to improve dispense accuracy and reliability. Poridex based products provide rapid bubble remove for locations where bubble introduction cannot be avoided.

FLUIDICS



Debubblers

APPLICATION NOTE

- Liquid handling
- IVD
- HPLC/UHPLC
- O_2 and CO_2 removal

In medical analyzers, bubbles interfere with critical volumetric reagent dispenses and cause sample failures, wasting time and money. Because bubbles adhere to nearly every part of a dispensing system, high velocity or induced turbulent flow is often used to displace and discharge bubbles from the flow stream and into a waste area. These alternative processes waste reagents and are time consuming, unpredictable, and may additionally require designing the system to recognize bubbles are present. Regardless of how the systems are designed, aqueous systems will always be subject to the laws of physics that cause out-gassing during changes in fluid temperature, pressure, or chemicals mixture. In fluid applications like these, debubblers are the optimal solution to capture and remove formed bubbles to prevent sample dispense inaccuracies, and degassing is ideal to prevent downstream bubble formation from recurring.

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.

Debubbler/Degasser

Combines Vacuum Degassing with Active Bubble Removal

- Improves instrument performance — reduces downtime due to bubble formation.
- Fewer false positives due to reduction of partial reagent dispenses.
- Easily integrates into any pump, degassing tray, or stand-alone degassing application.
- Designed for use with water based solutions with no surfactants. Active degassers are recommended for other solutions.

Active Debubbler

Remove Bubbles in Fluid Stream Before or After the Pump

- Improves instrument performance — reduces downtime due to bubble formation.
- Fewer false positives due to reduction of partial reagent dispenses.
- Easily integrates into any pump, degassing tray, or stand-alone degassing application.

Transfer-Line Degasser

Removes Dissolved Gases During Fluid Transfer

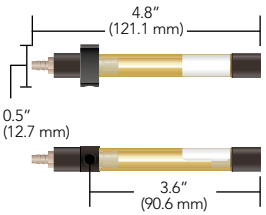
- Eliminates baseline fluctuations for improved detector sensitivity.
- Coaxial design reduces number of connections, improves reliability.
- Single lumen design increases degassing reliability.

BENEFITS

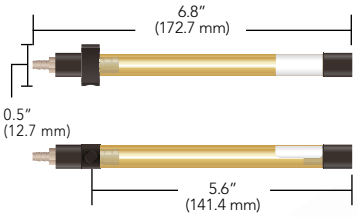
	ACTIVE DEBUBBLER	DEBUBBLER/ DEGASSER	TRANSFER-LINE DEGASSER
Perfect for applications that require dissolved gas like oxygen for reaction kinetics	✓		
Improves dispense precision by capturing and removing bubbles	✓	✓	
Eliminates false positives and reduces reagent waste by improving instrument performance	✓	✓	
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			✓

Debubblers (Cont.)

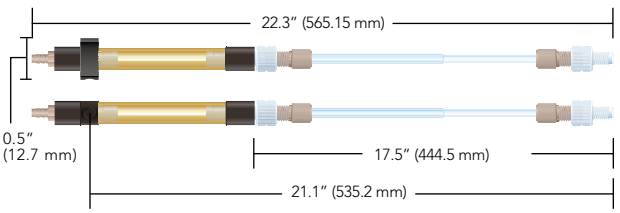
Overall Dimensions *Please note: These drawings are not actual size.*



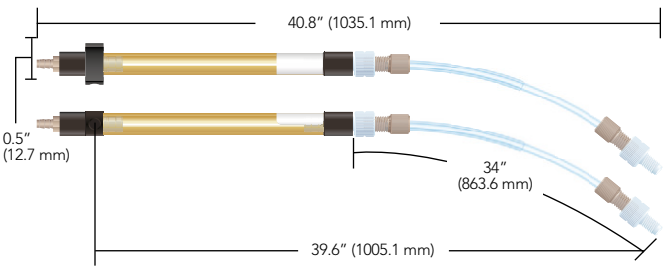
9000-1540
Active Debubbler, 2.5 mL



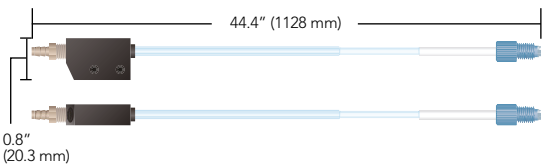
9000-1541
Active Debubbler, 5 mL



9000-1544
Debubbler / Degasser, 2.5 mL



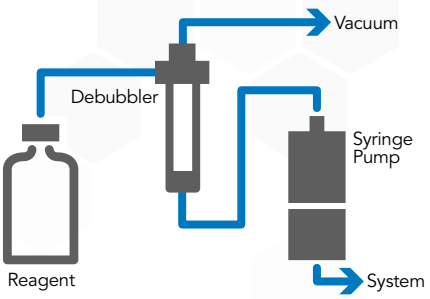
9000-1545
Debubbler/Degasser, 5 mL



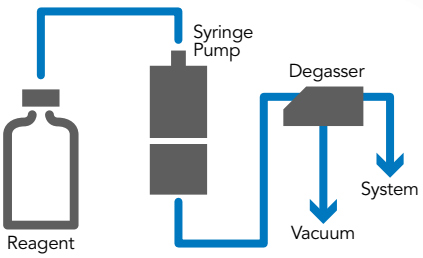
9000-1549
Transfer-Line Debubbler, 1.1 meter

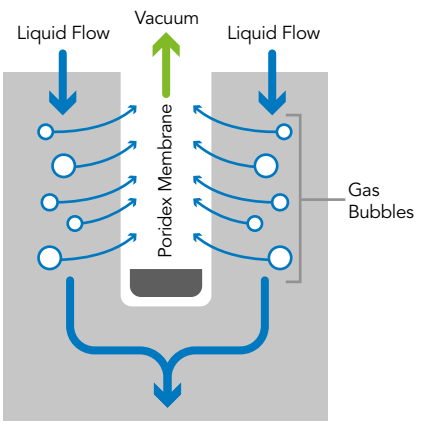
IMPLEMENTATIONS

Typical Debubbler Implementation



Transfer-Line Degasser Implementation





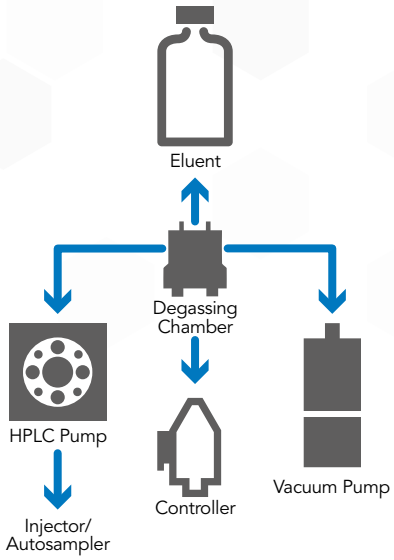
Gas bubbles are actively removed from a flowing liquid stream by vacuum via the PORIDEX membrane.

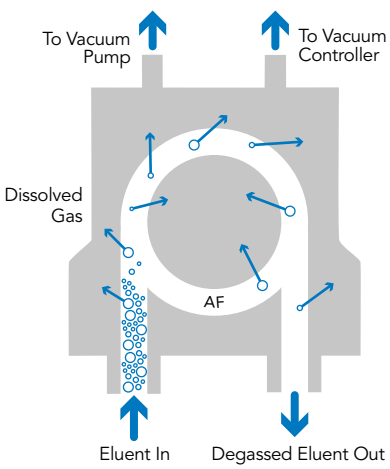
SPECIFICATIONS (ALL PLATFORMS)

	ACTIVE DEBUBBLERS	DEGASSER/DEBUBBLERS	200 KPA (30 PSI) @ 25 °C
Bubble Removal (volume of air removed/min @ 10 mL/min H_2O)	Up to 30 cc	Up to 30 cc	N/A
Degassing Efficiency† @ 1 mL/min H_2O	N/A	2.5 mL size: 36% O_2 removal, 5.0 mL size: 55% O_2 removal	< 4 ppm dissolved O_2 at 5 mL/min
Membrane Material	PORIDEX®	PORIDEX	PORIDEX
Wetted Materials	PORIDEX, Polyolefin, FEP, ETFE, Ultem®	PORIDEX, Polyolefin, FEP, ETFE, Ultem	PORIDEX, Polyolefin, FEP, ETFE
Solvent Compatibility	Solutions > 50% aqueous. Not compatible with detergent concentrations > 0.05%.	Solutions > 50% aqueous. Not compatible with detergent concentrations > 0.05%.	Solutions > 50% aqueous. Not compatible with detergent concentrations > 0.05%.
Standard Bubble Trap Volume	2.5 / 5.0 mL	2.5 / 5.0 mL	N/A
Transfer-Line Volume	N/A	2.5 / 5.0 mL	< 4 mL
Max. Operating Pressure	200 kPa (30 psi) @ 25 °C	200 kPa (30 psi) @ 25 °C	200 kPa (30 psi) @ 25 °C
Max. Operating Temperature	40 °C	40 °C	40 °C
Recommended Vacuum Level	Minimum 16 kPa absolute	Minimum 16 kPa absolute	Minimum 16 kPa absolute
Liquid Connection	1/4-28 fitting system	1/4-28 fitting system	1/4-28 fitting system
Vacuum Connection	Tubing vacuum port(s) for 1/8" (3 mm) ID elastomeric tubing	Tubing vacuum port(s) for 1/8" (3 mm) ID elastomeric tubing	Tubing vacuum port(s) for 1/8" (3 mm) ID elastomeric tubing
Pressure Drop	0.8 mm Hg / mL / min (assumes laminar flow and viscosity of 1 cP)	0.8 mm Hg / mL / min (assumes laminar flow and viscosity of 1 cP)	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.*

TYPICAL DEGASSER IMPLEMENTATION





Dissolved gases are actively removed from a flowing liquid stream by vacuum via the IDEX Health & Science AF® membrane.

APPLICATION NOTE

Why Degas Your Mobile Phase?

Dissolved air in HPLC mobile phases can result in flow rate instability and baseline disturbance.

Flow rate instability: Non-degassed mobile phase can outgas in the pump head, causing bubbles to be formed and trapped inside the head or check valves. These bubbles can cause flow disturbances and pressure fluctuations, resulting in flow rate instability.

Baseline disturbance: As the mobile phase passes through the column, it experiences a large pressure drop. Non-degassed mobile phase can outgas due to this pressure differential, causing air bubbles to form. Air bubbles passing through or lodging in the flow cell cause detection disturbances, exhibited as baseline noise.

Why Use a Degassing System?

Helium sparging is a common means of degassing HPLC solvents. This method has its drawbacks, however. Helium tanks are expensive and bulky, and solvent backup and contamination are concerns. In addition, helium sparging can change the composition of a premixed mobile phase over time, due to the difference in the evaporation rates of mobile phase components.

In contrast, the IDEX Health & Science Degassing System has none of these drawbacks, and it is extremely fast and efficient at removing dissolved gases — more efficient than helium sparging or PTFE-based degassing systems.

Tubing Connections

We recommend ETFE tubing (page 27) be used to limit regassing of mobile phase between the degasser and your pump. ETFE is recommended because of its superior impermeability to gases (compared to PTFE, FEP, and PFA tubing). Applicable flangeless fittings for 1/8" OD tubing are found on page 45.

GPC and HFIP Applications

Standard degassing chambers, with PEEK bulkhead unions, are not recommended for GPC applications or for use with HFIP (hexafluoroisopropanol). Special GPC "hardened" versions are available. Please contact us for more information.

NOTE

Degassing tubing is flexible and therefore can be coiled to shorten the overall length or used to transfer the fluid within an instrument to the next desired location.

Debubblers

Part No.	Description	Standard Bubble Trap Size	Transfer Line Length	Internal Volume	Max Bubble Capacity	Qty.
DEBUBBLER SERIES – AVAILABLE STANDARD CONFIGURATION						
9000-1540	2.5 mL Active Debubbler	2.5 mL	—	2.5 mL	2.5 mL	ea.
9000-1541	5 mL Active Debubbler	5 mL	—	5 mL	5 mL	ea.
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	ea.
9000-1545	5 mL Debubbler/Degasser	5 mL	34" (863.6 mm)	5 mL in transfer line + 5 mL in bubble trap	5 mL	ea.
9000-1549	1.1 m Transfer-Line Degasser	—	1.1 m (43")	4 mL	N/A	ea.

BUY NOW

Full Stand Alone Degassing Systems

BIOTECH DEGASi
ELIMINATES TROUBLES WITH BUBBLES

- Analytical and Prep scale models
- Ultra-high degassing efficiency
- Low volume, easy to prime
- Patented control eliminates baseline fluctuations
- Inert flow path
- 5+ year lifetime

No Troubles with Bubbles Anymore!

– prevent bubble formation in your Fluidic System with BIOTECH DEGASi line of Degassers.

Dissolved gasses in a fluidic system can often cause troubles. When the pressure or the temperature changes, the dissolved gasses can form bubbles which affect the accuracy, precision and performance of your equipment. On-line degassing is a very efficient way of removing dissolved gasses from the liquid and preventing bubble formation.

	BIOTECH DEGASi CLASSIC GENERAL PURPOSE	BIOTECH DEGASi GPC GPC ELUENT	BIOTECH DEGASi MICRO LIMITED VOLUME	BIOTECH DEGASi SEMI-PREP SEMI PREP
Systec AF™ Internal Volume	480 µl	480 µl	100 µl	925 µl
No of Channels	2-5	2-5	2-5	2-5
Biocompatible Flow Path	Y	N	Y	Y
Approximate Max Flow Per Channel (ml/min)	3	3	0.5	6
Inner Dimension Flow Path (mm)	1.14	1.14	1.14	1.14

SPECIFICATIONS

Part Number	Number of Channels	Internal Volume
BIOTECH DEGASI CLASSIC		
0001-6352-A	2	480 µl
0001-6353-A	3	480 µl
0001-6354-A	4	480 µl
0001-6355-A	5	480 µl
BIOTECH DEGASI GPC		
0001-6622	2	480 µl
0001-6623	3	480 µl
0001-6624	4	480 µl
0001-6625	5	480 µl
BIOTECH DEGASI MICRO		
0001-6352-S	2	100 µl
0001-6353-S	3	100 µl
0001-6354-S	4	100 µl
0001-6355-S	5	100 µl

Part Number	Number of Channels	Internal Volume
BIOTECH DEGASI SEMI-PREP		
0001-6352-L	2	925 µl
0001-6353-L	3	925 µl
0001-6354-L	4	925 µl
0001-6355-L	5	925 µl
BIOTECH DEGASI PREP		
0001-2053	2	5.3 ml
0001-6482	2	8.4 ml
0001-6484	2	13.8 ml
BIOTECH DEGASI PREP+		
0001-0120	1	23 ml
0001-0220	2	23 ml
0001-0420	4	23 ml
BIOTECH DEGASI COMPACT		
0004-2285	2	285 µl
0004-4285	4	285 µl
0004-6285	6	285 µl
BIOTECH DEGASI HIGH FLOW		
HF.500-S Stand Alone	1	60 ml
HF.500-A OEM version	1	60 ml

Degasi Prep+ make it possible to degass ***organic solutions*** *with higher flows!*
More info at www.biotech.se

HIGH FLOW RATE
75 ml/min
Per channel

BIOTECH DEGASi PREP — **PREP**

NEW! BIOTECH DEGASi PREP+ — **ORGANIC SOLVENTS**

BIOTECH DEGASi COMPACT — **COMPACT APPLICATION**

NEW! BIOTECH DEGASi HIGH FLOW — **HIGH FLOW**

Systec AF™ Internal Volume	5.3 / 8.4 / 13.8 ml	23 ml	285 µl	60 ml (silicone)
No of Channels	2	1-4	2, 4, 6	1
Biocompatible Flow Path	N / Y / Y	Y	Y	Y
Approximate Max Flow Per Channel (ml/min)	15 / 25 / 50	75-100	2	500
Inner Dimension Flow Path (mm)	1.91	N/A	0.89	N/A