



CLOSED SYSTEMS FOR SOLVENT CONTAINMENT

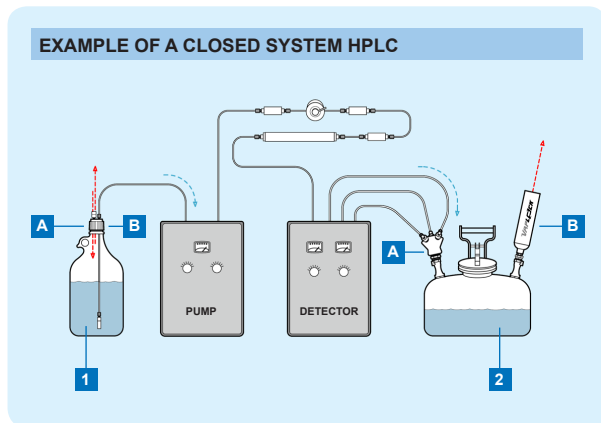
VAPOR AND SPILL CONTROL FOR LABORATORY SOLVENTS



CLOSED SYSTEMS INTRODUCTION

Through leaks, spills, and ventilation, an "open" solvent-using system will release solvent vapors directly into the laboratory environment. This introduction may be reduced by adding several key components to the typical system. These items are:

- A properly sealed solvent reservoir with ventilation control
- A solvent waste container with secure fluid connections
- A carbon filter to reduce vapors escaping the waste container



1: Solvent Reservoir
2: Waste Container
A: Fluid Connections
B: Air inlet (1) or vent (2)

1A SOLVENT RESERVOIR FLUID CONNECTIONS

For a closed system on a bottle, each container first requires a bottle cap with ports to fit the specific tubing sizes. When using caps with threaded ports for fittings, the fittings may be selected and replaced to accommodate different diameters of tubes. Caps with "slip-through" ports (non-threaded holes drilled or molded into a cap) are acceptable, provided the holes fit the tubing sizes securely. Most slip-through caps are made to accommodate 1/8" or 1/16" OD.

1B SOLVENT RESERVOIR AIR INLET

In systems where sparging is not employed, to complete the closed system on a bottle each container requires a device to control the bottle cap vent. A closed bottle must function exactly like a coffee travel mug -- liquid goes out through one hole, and air comes in through a pinhole to displace the liquid removed. To manage the air flow, the simplest answer is a check valve assembly made to occupy a bottle cap port. The check valve allows air to enter a bottle as the pump moves the liquid phase out to the system. It also minimizes escape of vapors contained in the bottle. Should the bottle ever be exposed to pressure -- a result of a rise in lab temperature (over a warm weekend, for example) or a sparging line accidentally connected -- to reduce the threat of explosion a check-and-relief valve assembly is also available. The relief function allows pressure to escape while still preserving a "pressure blanket" of 0.5-1psi in the bottle. Although VapCheck™ units resist many standard solvents, care should be taken to consider the chemical compatibility of a solvent with VapCheck™ materials.

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2A WASTE CONTAINER FLUID CONNECTIONS

Many labs are standardizing on Justrite® 2- and 5- gallon HPLC Centura™ waste containers. These safety cans have enough capacity for days or weeks of typical flow, vent automatically at 5 psig if pressurized, and allow users to disengage waste lines and vapor filters quickly during waste collection. Containers are available with either Polypropylene or Stainless Steel quick disconnects. Care should be taken when choosing the disconnect type. For example, at high concentrations the solvent Hexane swells Polypropylene as much as 30%, causing the disconnect to "stick" and restrict fluid flow. Containers and manifolds with stainless steel quick disconnects are advised wherever such chemical compatibility issues may arise; consult a chemical compatibility guide before selecting a container. One should also note that Justrite containers must be grounded while in use and especially while emptying the container, as static electricity has been known to ignite solvent fumes.

For labs which choose not to use Justrite® containers, Vaplock™ products are also available to adapt to standard drum and pail closures, as well as Nalgene® 83B, 53B, and 100-415 carboys. PLEASE NOTE THAT IT IS NOT POSSIBLE TO GROUND DRUM, PAIL, GLASS BOTTLE AND CARBOY (NON-JUSTRITE®) CONTAINERS; THIS MAY RESULT IN A SAFETY HAZARD WITH FLAMMABLE SOLVENTS.

The type and dimension of waste tubing found on an HPLC varies widely, depending on both system and user requirements. Outer and inner diameters range from microns to inches, and tubing material may be hard- or soft-wall plastic, metal, smooth-walled or corrugated. All these lines must be connected to a waste container. Adapting securely, without leaks and vapor release, poses a problem when attempting a closed system. VapLock™ manifolds adapt to tubing sizes up to 1/2" ID or OD (and larger if necessary) and can be stacked to accept additional lines. Most manifold ports permit direct connection of 1/4" or 1/2" threaded NPT fittings.

2B WASTE CONTAINER VAPOR VENT

The most significant vapor generator in an HPLC system is the waste can, where solvents draining to the container may volatilize rapidly as solvent entering the container forces vapor into the laboratory. Activated carbon has excellent adsorptive properties for organic solvents. With a Gas Chromatograph, a number of carbon types were tested for vapor breakthrough under a flow of Acetonitrile vapor, one of the more common solvents used in HPLC. After determining the appropriate type, the carbon was similarly tested on other common solvents. The breakthrough data published in this brochure is based on use of 100% concentration of each solvent, at a flow rate of 1 mL per minute at S.T.P. (most analytical HPLCs run at 1-2 mL per minute). Disposal of spent cartridges should be conducted in accordance with local safety codes.

For information regarding your local distributor, please contact:



WESTERN FLUIDS

1.800.241.5145 [tel]

www.vaplock.com



CLOSED SOLVENT SYSTEMS

- Minimize solvent odors entering the lab
- Reduce leaks and spills of reagents and waste
- Ideal for HPLC and other solvent systems

VAPLOCK™ Closed Systems for solvent containment minimizes leaks, spills, and odor escape from solvent waste and supply containers. Use supply kit VK-205 to provide an effective means of sealed solvent delivery, and select from the waste containment kits to collect solvent wastes with minimal release of solvent odors. All Vaplock™ products are designed for ease of use and adaptability, and will conform to a broad array of standard laboratory solvent containers. Choose from the complete kits pictured here, or make your own selection of components from the pages that follow for a more customized closed system solution.



2-GALLON
Polyethylene waste can with
Polypropylene / EPDM disconnects

5-GALLON
Polyethylene waste can
with Stainless / PTFE
disconnects

SECURE SOLVENT DELIVERY

Use a Vaplock™ Solvent Delivery Kit to minimize release of solvent odors while supplying solvents to your system. A threaded connection for 1/8" OD tubing adapts to an inert PTFE bottle cap on a 2 Liter safety-coated borosilicate bottle, while a 1-way emission control valve allows air to enter the reservoir as solvent is removed. The valve opens at a low 0.07 psi to minimize backpressure. A 10um UHMW Polyethylene solvent filter, five replacement filter elements, Teflon® 1/4-28 plug and five feet of 1/8" OD PTFE tubing are also included. For Reversed Phase solvents only. Please inquire for Normal Phase solutions.



VK-205 Solvent Delivery Kit

SOLVENT WASTE CONTAINMENT

Plumb multiple solvent lines securely to a waste container and reduce solvent odor emissions by using a Vaplock™ Waste Containment Kit. The heart of the system is a Justrite® Polyethylene waste can, which includes 2 quick disconnects for ease of use (choose either Polypropylene with EPDM o-rings, or Stainless Steel and Teflon® for more aggressive fluids). A 6-port waste manifold and fittings kit adapt to common HPLC tubing requirements, while a 5-pack of activated carbon and silica filters reduce vapors from the container vent. Antistatic wire grounds the system during use. 1, 2, and 5 gallon container sizes available.



VK-003 Waste Containment Kit

CLOSED SYSTEM KITS

SOLVENT DELIVERY KIT

VK-205 Solvent delivery kit, 2L bottle with accessories

WASTE CONTAINMENT KITS

VK-001 Waste kit, 1-gallon, PP / EPDM quick disconnect

VK-002 Waste kit, 2-gallon, PP / EPDM quick disconnect

VK-004 Waste kit, 5-gallon, PP / EPDM quick disconnect

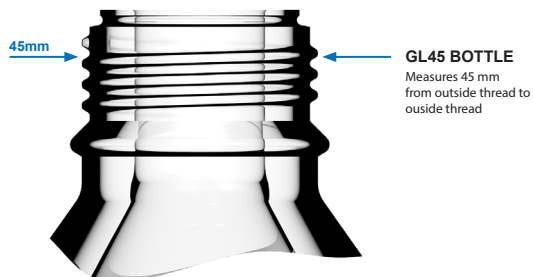
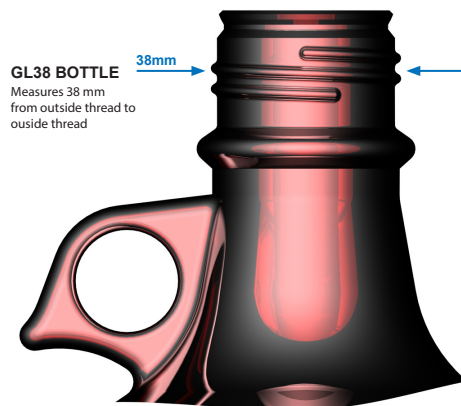
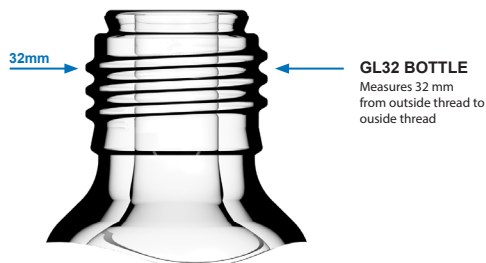
VK-003 Waste kit, 2-gallon, SS / Teflon® quick disconnect

VK-005 Waste kit, 5-gallon, SS / Teflon® quick disconnect

SOLVENT RESERVOIRS

- How to identify common laboratory solvent storage vessels

Although many container types and sizes are available, some of the more commonly used varieties in the laboratory are GL45, GL38 and GL32 glass bottles. VapLock caps are made to fit these standard sizes. Perhaps the most common reservoir of all, the GL45 lab bottle, is available for purchase. This glassware is manufactured by Schott Duran® and Kontes®, and is available in clear, plastic coated, and pressure-tested versions.



1 BAR PRESSURE-TESTED BOTTLES, GL45

BT45-025B	CLEAR, 250ml, pressure-tested
BT45-05B	CLEAR, 500ml, pressure-tested
BT45-1B	CLEAR, 1 Liter, pressure-tested
BT45-1BP	CLEAR 1 Liter, pressure-tested, plastic coated

GL45 STANDARD LAB BOTTLES

100 ML

BT45-01	CLEAR 100mL
BT45-01P	CLEAR 100mL, plastic safety coated
BT45-01A	AMBER 100mL, non-coated

250 ML

BT45-025	CLEAR 250mL
BT45-025P	CLEAR 250mL, plastic safety coated
BT45-025A	AMBER 250mL, non-coated

500 ML

BT45-05	CLEAR 500mL
BT45-05P	CLEAR 500mL, plastic safety coated
BT45-05A	AMBER 500mL, non-coated

1 LITER

BT45-1	CLEAR 1 Liter
BT45-1P	CLEAR 1 Liter, plastic safety coated
BT45-1A	AMBER 1 Liter, non-coated

2 LITER

BT45-2	CLEAR 2 Liter
BT45-2P	CLEAR 2 Liter, plastic safety coated
BT45-2A	AMBER 2 Liter, non-coated

5 LITER

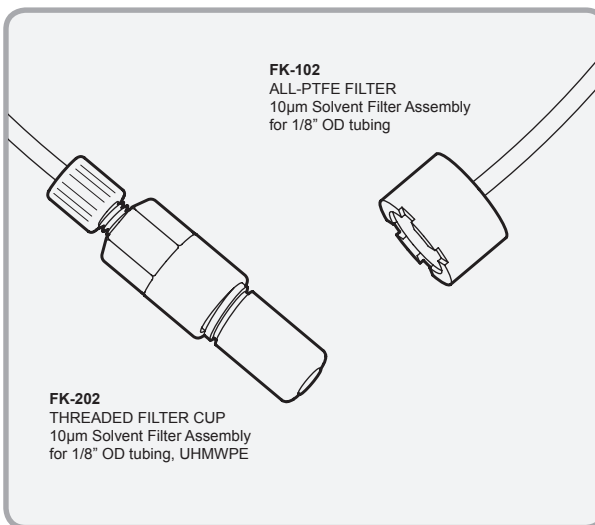
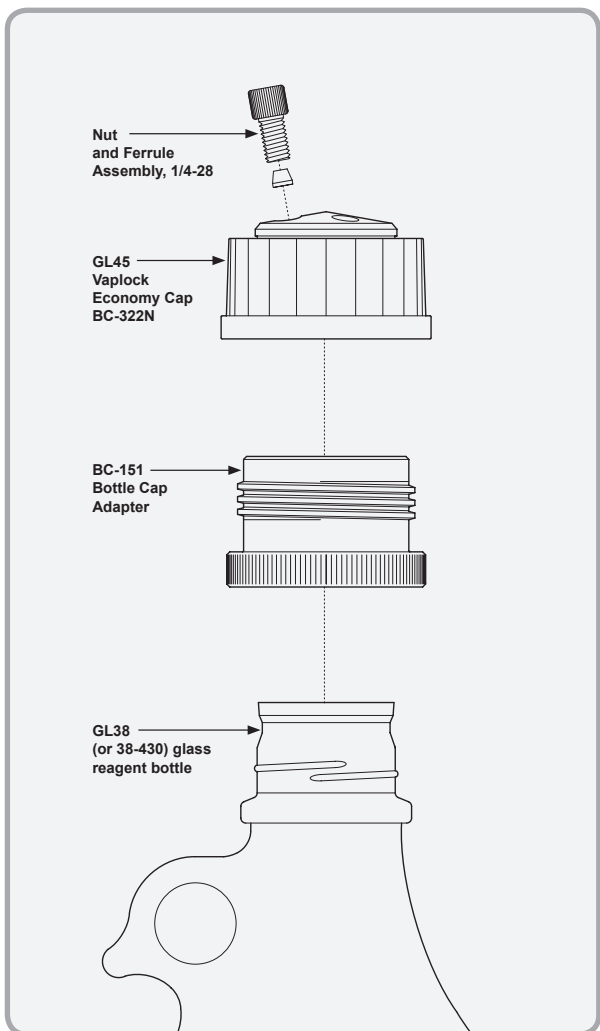
BT45-5	CLEAR 5 Liter
BT45-5P	CLEAR 5 Liter, plastic safety coated
BT45-5A	AMBER 5 Liter, non-coated



BOTTLE THREAD ADAPTER

- Adapt GL45 caps to fit GL38 solvent bottles
- Polypropylene construction

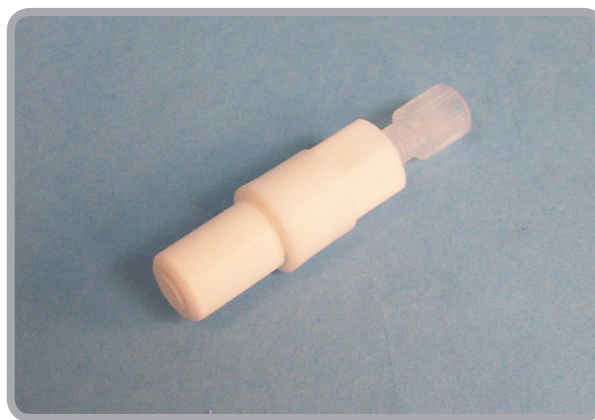
In lab applications where various bottle types are used, there may be occasions when the use of separate bottle caps is inconvenient. Save time and hassle by using the new BC-151 solvent bottle adapter, which will convert Vaplock 'Economy' GL45 bottle caps to standard 38-430 threaded solvent bottles.



SOLVENT INLET FILTERS

- Filter particulates from the mobile phase
- Various porosities and styles
- Biocompatible polymers

Use these biocompatible filters to remove particulates from a solvent solution before they reach your system. Available in Polyethylene and PTFE, in a variety of porosities.



FK-202 10 micron Threaded UHMWPE filter assembly

BOTTLE THREAD ADAPTER

BC-151 ADAPTER, GL45 to GL38, Polypropylene

SOLVENT INLET FILTERS

ALL - PTFE FILTERS

FK-101 5 µm all-PTFE filter for 1/8" OD tubing

FK-102 10 µm all-PTFE filter for 1/8" OD tubing

THREADED UHMWPE FILTERS

FK-201 10µm UHMWPE filter, for 1/16" OD tubing

FK-202 10µm UHMWPE filter, for 1/8" OD tubing

FK-200V Replacement threaded filters, 5-pack

FK-200C Replacement threaded filters, 100-pack

'Q' SERIES CAPS

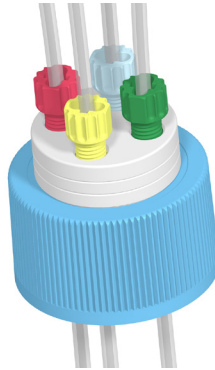
- With 1/4-28 threaded ports
- Optional valved ports
- Anti-twist design - no twisted tubing!
- Solid PTFE body

'Q' series caps offer the simplest way to connect via 1/4-28 ports and fittings. Each port has a robust Stainless Steel thread insert to enable repeated connect and disconnect. 1/8" OD supply tubing may be press-fit into the underside of each cap. Easy operation on/off valves on each fluid line are an optional extra.

'Q' SERIES STANDARD CAP

- With 1/4-28 threaded ports

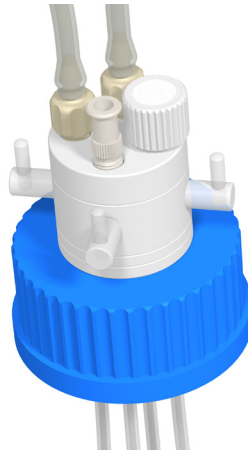
This compact design can be used where head space is limited. 1.8mm holes through the PTFE cap body allow 1/16" OD tubing to pass straight through into the bottle.



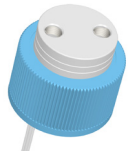
'Q' SERIES VALVED CAPS

- 1/4-28 ports include on/off valves
- PTFE body with PCTFE valve rotors

Easily control the flow of liquid into and out of the bottle with the integrated valves. Each fluid line can be switched on or off independantly.



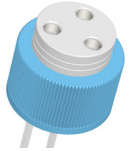
BC-109
GL45, (2) 1/4-28



BC-106
GL38, (2) 1/4-28



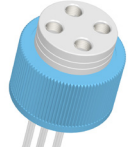
BC-110
GL45, (3) 1/4-28



BC-107
GL38, (3) 1/4-28



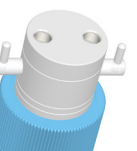
BC-111
GL45, (4) 1/4-28



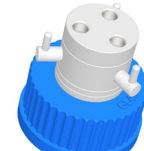
BC-108
GL38, (4) 1/4-28



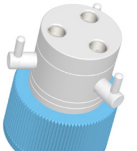
BC-116
GL45, 2-valved
1/4-28



BC-113
GL38, 2-valved
1/4-28



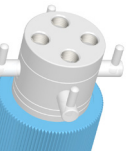
BC-117
GL45, 3-valved
1/4-28



BC-114
GL38, 3-valved
1/4-28



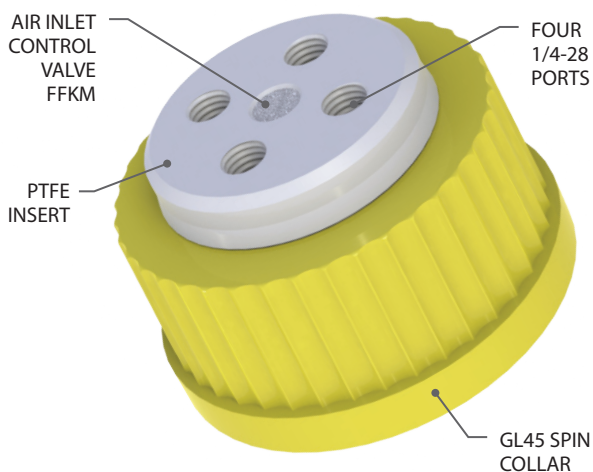
BC-118
GL45, 4-valved
1/4-28



BC-115
GL38, 4-valved
1/4-28

'Q' SERIES BOTTLE CAPS

BC-106	Q-series cap, 38-430; 2 lines
BC-107	Q-series cap, 38-430; 3 lines
BC-108	Q-series cap, 38-430; 4 lines
BC-109	Q-series cap, GL45; 2 lines
BC-110	Q-series cap, GL45; 3 lines
BC-111	Q-series cap, GL45; 4 lines
BC-112	Q-series cap, GL32; 3 lines w /valves
BC-113	Q-series cap, 38-430; 2 lines w /valves
BC-114	Q-series cap, 38-430; 3 lines w /valves
BC-115	Q-series cap, 38-430; 4 lines w /valves
BC-116	Q-series cap, GL45; 2 lines w /valves
BC-117	Q-series cap, GL45; 3 lines w /valves
BC-118	Q-series cap, GL45; 4 lines w /valves



CLOSED SYSTEM SOLVENT DELIVERY CAPS

- PTFE body with PP cap collar
- Options for glass or plastic bottles
- Closed system designs with air inlet valves

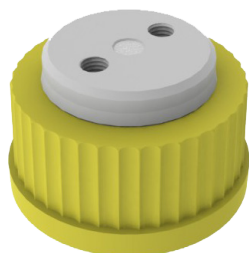
Priced conservatively, these caps for GL38 and GL45 glass bottles, and for 38-430 plastic bottles, include threaded ports in a PTFE insert. Push tubing through the cap to supply your system and attach securely with threaded compression fittings. To preserve a closed system while allowing air into the bottle to displace vacuum, select a cap with built-in perfluoroelastomer air inlet valve.



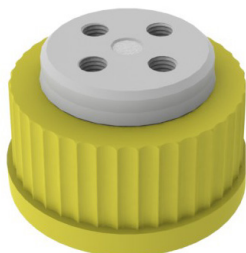
SV-302
GL38 Closed-System Cap, 2-port



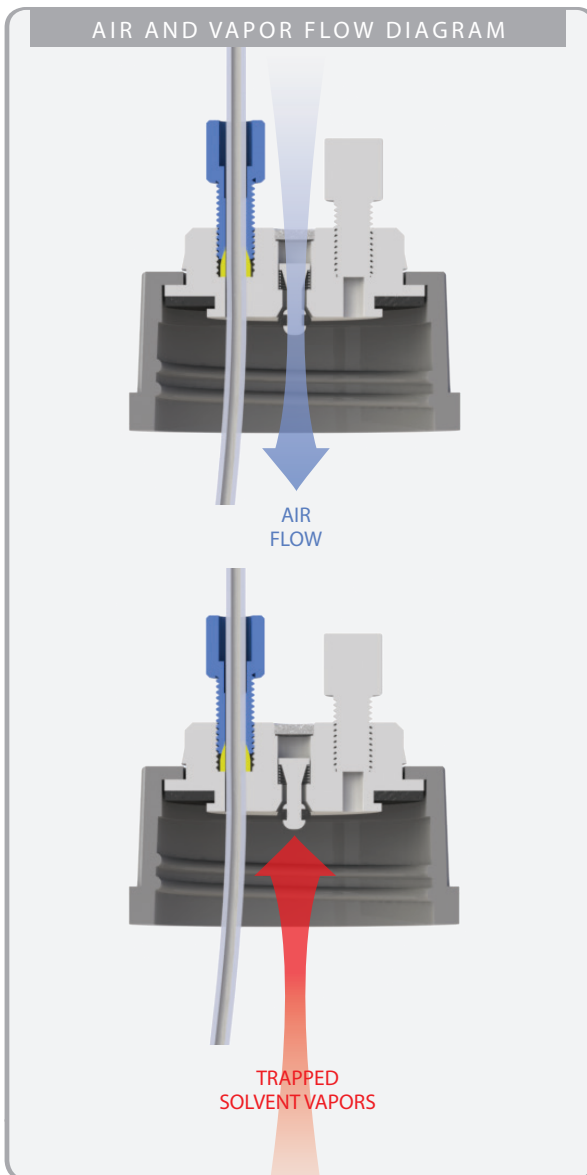
SV-303
GL38 Closed-System Cap, 4-port



SV-305
GL45 Closed-System Cap, 2-port



SV-306
GL45 Closed-System Cap, 4-port



CLOSED SYSTEM CAPS WITH AIR INLET VALVE

SV-302	GL38, 2-port 1/4-28, perfluoroelastomer air inlet valve
SV-303	GL38, 4-port 1/4-28, perfluoroelastomer air inlet valve
SV-305	GL45, 2-port 1/4-28, perfluoroelastomer air inlet valve
SV-306	GL45, 4-port 1/4-28, perfluoroelastomer air inlet valve
SV-490	GL38, (1) 1/4-28, (1) 5/16-24, perfluoroelastomer air inlet
SV-411	GL45, 2-port 5/16-24, perfluoroelastomer air inlet valve

ECONOMY CAPS FOR NALGENE 38-430 BOTTLES

BC-240	Nalgene 38-430, 2-port 1/4-28
BC-340	Nalgene 38-430, 3-port 1/4-28
BC-440	Nalgene 38-430, 4-port 1/4-28

ECONOMY CAPS FOR GLASS BOTTLES

BC-220N	Economy cap, GL38, 2-port 1/4-28
BC-222N	Economy cap, GL45, 2-port 1/4-28
BC-320N	Economy cap, GL38, 3-port 1/4-28
BC-322N	Economy cap, GL45, 3-port 1/4-28
BC-420N	Economy cap, GL38, 4-port 1/4-28
BC-422N	Economy cap, GL45, 4-port 1/4-28

EVAPORATION CONTROL

- Minimize vapor loss from supply bottles
- Air inlet and pressure relief options
- Choose from Viton or perfluoroelastomer seals

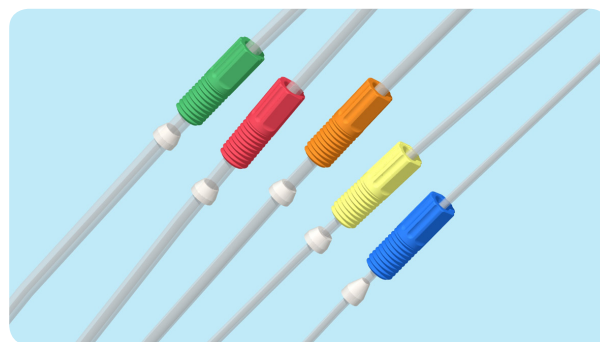
Evaporation control units contain check valves that reduce the flow of vapor in and out of a solvent supply bottle. During a system run, as liquid solvent travels out of the supply bottle to the system, air must enter the bottle to displace the solvent removed. DV-115 and DV-215 allow air to enter the bottle, but not to escape. Part numbers DV-116 and DV-216 operate in the reverse, allowing pressure relief.



DV-115
Air Inlet Evaporation Control Valve, PTFE with Viton seal, half psi cracking pressure

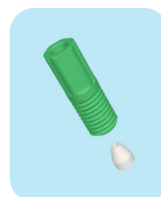


DV-116
Air Outlet Pressure Relief Valve, PTFE with Viton seal, half psi cracking pressure

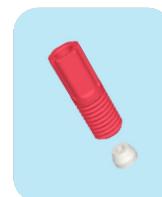


1/4-28 TUBING CONNECTIONS

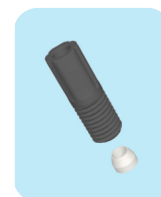
- Spare tubing connections for 1/4-28 ports
- For tubing OD sizes 1/16" - 1/8"
- Tefzel® and Polypropylene



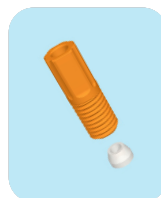
AQ-150
For 1/16" OD tubing



AQ-151
For 1.8-2.0mm OD



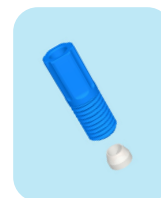
AQ-152
For 2.2mm OD



AQ-153
For 2.5mm OD tubing



AQ-154
For 3.0mm OD tubing



AQ-155
For 1/8" OD tubing



UC-004
1/4-28 PEEK Union, 0.05" bore

EVAPORATION CONTROL AND RELIEF VALVES

1-WAY INLET AIR CONTROL VALVES

DV-115	Air Inlet Valve, 1/4-28, half psi, Viton seal
DV-215	Air Inlet Valve, 1/4-28, half psi, Perfluoroelastomer seal

1-WAY OUTLET AIR CONTROL (RELIEF) VALVES

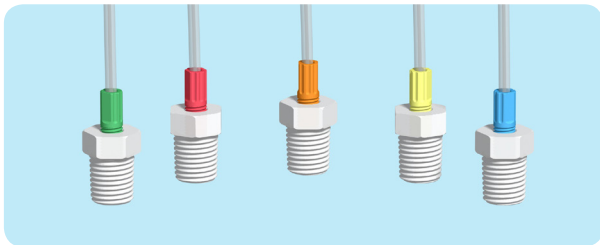
DV-116	Air Outlet Relief Valve, 1/4-28, half psi, Viton seal
DV-216	Air Outlet Valve, 1/4-28, half psi, Perfluoroelastomer seal

WARNING:

Viton seals in DV-115 and DV-116 are not suitable for use with some solvents, such as THF. Consult a chemical compatibility guide for further information.

1/4-28 TUBING CONNECTIONS AND PLUGS

AQ-101X	For 360µm OD tubing, Red / Green, 10 pack
AQ-102X	For 1mm OD tubing, Blue / Purple, 10 pack
AQ-150X	For 1/16" OD tubing, 10pk, Green, 10 pack
AQ-151X	For 1.8-2.0mm OD tubing, 10pk, Red, 10 pack
AQ-152X	For 2.2mm OD tubing, 10pk, Black, 10 pack
AQ-153X	For 2.5mm OD tubing, 10pk, Orange, 10 pack
AQ-154X	For 3.0mm OD tubing, 10pk, Yellow, 10 pack
AQ-155X	For 1/8" OD tubing, 10pk, Blue, 10 pack
PL-103X	Delrin® Plug, 1/4-28, 10 pack
PL-104X	PTFE Plug, 1/4-28, 10 pack
SAMPLER KIT AND UNION	
SK-011	1/4-28 Sampler kit, includes 1 connection of each size
UC-004	1/4-28 PEEK Union, 0.05" ID bore



NPT ADAPTERS FOR HARD WALL TUBING

- Adapt tubing outer diameter (OD) to manifold NPT ports with compression fittings
- 1/4" and 1/2" NPT connections
- Chemically resistant Polypropylene and Tefzel®

For secure fluid connections to a manifold, select a fitting based on your tubing outer diameter (OD). Wrap NPT threads 3-4 times and wrench tighten for leak-resistant connections.



AC-150
For 1/16" OD tubing



AC-151
For 1.8-2.0mm OD



AC-152
For 2.2mm OD tubing



AC-153
For 2.5mm OD tubing



AC-154
For 3.0mm OD tubing



AC-155
For 1/8" OD tubing

HARDWALL TUBING ADAPTERS FOR NPT PORTS

ADAPTERS FOR 1/4" NPT PORTS

AC-150	1/16" OD tube x 1/4" NPT, PP, Tefzel, Green
AC-151	1.8-2.0 mm OD tube x 1/4" NPT, PP, Tefzel, Red
AC-152	2.2 mm OD tube x 1/4" NPT, PP, Tefzel, Black
AC-153	2.5 mm OD tube x 1/4" NPT, PP, Tefzel, Orange
AC-154	3.0 mm OD tube x 1/4" NPT, PP, Tefzel, Yellow
AC-155	1/8" OD tube x 1/4" NPT, PP, Tefzel, Blue
AC-108	4.0 mm OD tube x 1/4" NPT, PP, Tefzel, PEEK, Brown
AC-109	3/16" OD tube x 1/4" NPT, PP, Tefzel, Delrin, White
AC-113V	1/4" OD tube x 1/4" NPT, Natural PP, 5 pack
AC-114V	5/16" OD tube x 1/4" NPT, Natural PP, 5 pack
AC-115V	3/8" OD tube x 1/4" NPT, Natural PP, 5 pack
AC-116V	1/2" OD tube x 1/4" NPT, Natural PP, 5 pack

ADAPTERS FOR 1/2" NPT PORTS

AC-204V	3/8" OD tube x 1/2" NPT, Natural PP, 5 pack
AC-205V	1/2" OD tube x 1/2" NPT, Natural PP, 5 pack
AC-206V	5/8" OD tube x 1/2" NPT, Natural PP, 5 pack
AC-207V	3/4" OD tube x 1/2" NPT, Natural PP, 5 pack



NPT ADAPTERS FOR SOFT WALL TUBING

- Adapt tubing inner diameter (ID) to manifold NPT ports with barbed fittings
- 1/4" and 1/2" NPT connections
- Chemically resistant Polypropylene

A semi-permanent connection for soft-walled tubing only, barbed fittings are an economical means of connecting tubing to Vaplock manifolds. As with NPT adapters for hard wall tubing, wrap NPT threads 3-4 times and wrench tighten for leak-resistant connections.

TUBING GAUGE

- Measure the inner and outer diameters of waste tubing accurately



INSTALLATION TOOLKIT

- For quick installation of tubing connections in Vaplock™ manifolds



Easily install fittings in Vaplock manifolds with the TK-100 installation toolkit. Includes deep socket set for 9/16" and 7/8" hex fittings, adjustable wrench, guillotine tubing cutter, sealing tape and zip tie adhesive mounts.

BARBED TUBING ADAPTERS FOR NPT PORTS

AB-111X	1/16" ID tube x 1/4" NPT, PP, 10 pack
AB-112X	1/8" ID tube x 1/4" NPT, PP, 10 pack
AB-118X	5/32" ID tube x 1/4" NPT, PP, 10 pack
AB-113X	3/16" ID tube x 1/4" NPT, PP, 10 pack
AB-114X	1/4" ID tube x 1/4" NPT, PP, 10 pack
AB-115X	5/16" ID tube x 1/4" NPT, PP, 10 pack
AB-116X	3/8" ID tube x 1/4" NPT, PP, 10 pack
AB-117X	1/2" ID tube x 1/4" NPT, PP, 10 pack
AB-204X	1/4" ID tube x 1/2" NPT, PP, 10 pack
AB-205X	3/8" ID tube x 1/2" NPT, PP, 10 pack
AB-206X	1/2" ID tube x 1/2" NPT, PP, 10 pack
AB-207X	5/8" ID tube x 1/2" NPT, PP, 10 pack
AB-208X	3/4" ID tube x 1/2" NPT, PP, 10 pack

PLUGS FOR 1/4" AND 1/2" NPT PORTS

PL-101X	Plug for 1/4" NPT, PP, 10 pack
PL-105	Plug for 1/4" NPT, PTFE
PL-102X	Plug for 1/2" NPT, PP, 10 pack

SAMPLER KIT, TUBING GAUGE, AND TOOLKIT

SK-003	Barbed fittings sampler kit, includes 1 of each size
TG-001	Vaplock Tubing Gauge
TK-100	VapLock Installation Toolkit

JUSTRITE® WASTE CANS

- Two Polypropylene or Stainless Steel quick disconnects permit simple attachment of one inlet and one vent

Ideal for HPLC use, Justrite® Centura™ containers streamline the waste containment and disposal process by providing a simple means of connecting waste and vent lines. FM approved, the containers are designed with a spring-loaded closure that opens when contents are subjected to pressure, for explosion safety. Containers are molded of translucent Polyethylene to show fluid level. When ordering, note that quick disconnects will only mate with like materials, i.e., stainless disconnects with stainless. Note that the disconnects mounted on all containers have a 3/8" drain orifice. Also note that Justrite® containers should be grounded with Antistatic Wires while in use, and especially while emptying the container.



JT-PP12752
2-gallon waste can with Polypropylene / EPDM disconnects

JT-TF12755
5-gallon waste can with Stainless / PTFE disconnects



SAFETY FUNNELS FOR JUSTRITE® CANS

- Quick-connect to Justrite Centura™ waste cans
- HDPE and Polypropylene construction
- Locking lid with Polypropylene sealing gasket

SF- series funnels adapt to safety funnels to allow quick disposal of pourable solvent waste. Locking, hinged lid minimizes leaks and spills when the funnel is closed. Standard Justrite Centura™ containers include two quick disconnects, one for filling and one for venting; removal of the insert from the venting quick disconnect will prevent vapor release while not in use. If used in tandem with other Vaplock products, such as manifolds and vapor filters, a closed system may also be maintained for passive wastes while the funnel is sealed.

As with all solvent-based applications, chemical compatibility of the solvent and product should be noted prior to purchase. SF-series funnels are constructed of high density Polyethylene (HDPE) and Polypropylene, with a closed-cell Polypropylene sealing gasket. As Justrite Centura containers are available with two quick disconnect materials, Polypropylene (with EPDM o-ring) and Stainless Steel (with Teflon o-ring), select a safety funnel according to the type of disconnect material.

ANTISTATIC WIRES

REDUCE FIRE RISKS FROM STATIC ELECTRICITY

Antistatic wires reduce spark danger from static electricity generated by movement and flow of flammable liquids. Bonding between containers during liquid transfer, and connecting drums to an earth ground are required under Federal and local codes.



JT-08500
Antistatic wires with 3' cable

WASTE CANS, ANTISTATIC WIRES, AND CONTAINMENT

WASTE CONTAINERS

JT-12160	Justrite® 1-gallon PE can, PP / EPDM disconnect
JT-PP12752	Justrite® 2-gallon PE can, PP / EPDM disconnect
JT-TF12752	Justrite® 2-gallon PE can, SS / Teflon® disconnect
JT-PP12755	Justrite® 5-gallon PE can, PP / EPDM disconnect
JT-TF12755	Justrite® 5-gallon PE can, SS / Teflon® disconnect

ANTISTATIC WIRES

JT-08500	Justrite® antistatic wire, dual alligator clips, 3'
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SECONDARY CONTAINMENT

SC-002	Secondary containment for Justrite 2 or 5-gal can
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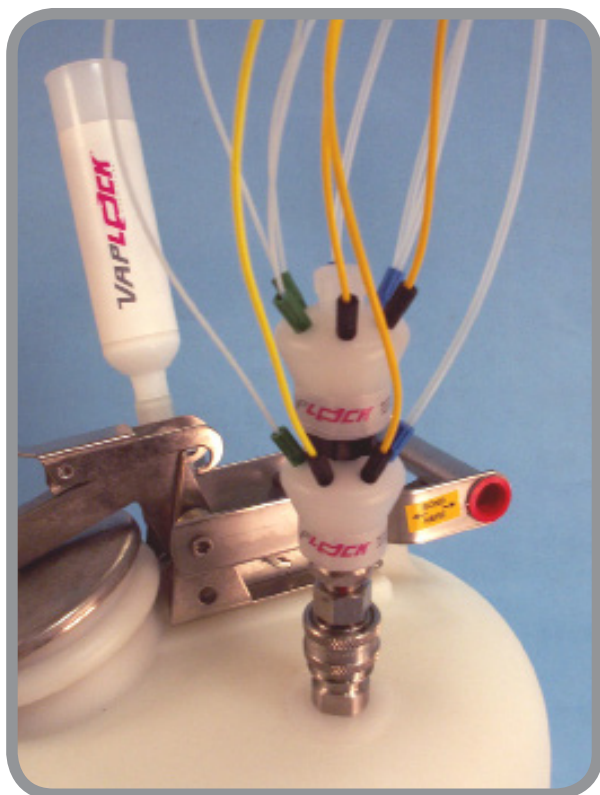
SAFETY WASTE FUNNELS

SF-003	Funnel with PP / EPDM disconnect
SF-004	Funnel with SS / Viton® disconnect
SF-005	Funnel with SS / Teflon® disconnect

WASTE MANIFOLDS FOR JUSTRITE® CANS

- Collect solvent waste easily from various sources into Justrite® Centura™ quick-disconnect containers
- Manifolds fit almost any tubing size with use of the appropriate fitting
- Wide-bore Polypropylene (PP) or PTFE manifold design allows multiple tubing connections with high fluid flow

Select a manifold for a Justrite can based on the type of disconnects on the container. For a Justrite can with Polypropylene and EPDM disconnects, for example, choose part number MA-301 (3-port) or MA-601 (6-port). If a system has more waste lines than a single manifold can accommodate, use stacking manifolds to handle almost any requirement. 1-port Polyethylene adapter MA-101 has one 1/4" NPT port. 3-ported Polypropylene manifolds have three 1/4" NPT ports. 6-ported Polypropylene manifolds have five 1/4" NPT ports radially, and one 1/2" NPT top port. 9-ported PTFE manifolds have eight 1/4-28 ports radially, and one 1/4" NPT top port. To connect tubing to waste manifolds, see tubing connections on pages 7-8.



MA-701
7-ported waste manifold
for PP/EPDM disconnects



MA-703
7-ported waste manifold
for Stainless / PTFE disconnects



MA-601
6-ported waste manifold
for PP/EPDM disconnects



MA-902
9-ported waste manifold
for Stainless/PTFE disconnects

MANIFOLD STACK UNITS

- Increase the number of manifold ports by adding a manifold stack unit



MA-300
3-ported stacking unit, Polypropylene,
With 1/4" NPT male adapter



MA-600
6-ported stacking unit, Polypropylene,
With 1/2" NPT male adapter



MA-301
3-ported waste manifold
for PP/EPDM disconnects



MA-303
3-ported waste manifold
for Stainless/PTFE disconnects

WASTE MANIFOLDS AND STACKING UNITS

MANIFOLDS FOR JUSTRITE® CANS WITH PP DISCONNECTS

MA-101	1-port Polypropylene (PP) adapter, (1) 1/4" FNPT
MA-301	3-Port PP manifold, (3) 1/4" FNPT
MA-601	6-port PP manifold, (5) 1/4" and (1) 1/2" FNPT
MA-701	7-port PP manifold, (1) 1/4" FNPT, (6) 1/4-28
MA-903	9-port manifold, (1) 1/4" FNPT, (8) 1/4-28
MA-1001	10-port PP, (1) 1/2" and (3) 1/4" FNPT, (6) 1/4-28

MANIFOLDS FOR JUSTRITE® CANS WITH SS DISCONNECTS

MA-105	1-port adapter, SS/Teflon® o-ring, (1) 1/4" FNPT
MA-303	3-port PP manifold, SS/Teflon®, (3) 1/4" FNPT
MA-603	6-port PP, SS/Teflon®, (5) 1/4" and (1) 1/2" FNPT
MA-703	7-port PP, SS/Teflon®, (1) 1/4" FNPT, (6) 1/4-28
MA-705	7-port PTFE, SS/Teflon®, (1) 1/4" FNPT, (6) 1/4-28
MA-902	9-port PTFE, SS/Teflon®, (1) 1/4" FNPT, (8) 1/4-28
MA-1003	10-port PP, SS/Teflon®, (1) 1/2" and (3) 1/4" FNPT, (6) 1/4-28

WASTE MANIFOLD STACKING UNITS

MA-300	3-Port PP with 1/4" MNPT (male thread)
MA-304	3-Port PP with 1/2" MNPT, (3) 1/4" FNPT
MA-600	6-Port PP with 1/2" MNPT, (5) 1/4", (1) 1/2" FNPT
MA-700	7-Port PP with 1/4" MNPT, (1) 1/4" FNPT, (6) 1/4-28
MA-704	7-Port PP with 1/2" MNPT, (1) 1/4" FNPT, (6) 1/4-28
MA-706	7-Port PTFE, 1/4" MNPT, (1) 1/4" FNPT, (6) 1/4-28
MA-900	9-Port PTFE, 1/4" MNPT, (1) 1/4" FNPT, (6) 1/4-28
MA-904	9-Port, 1/2" MNPT, (1) 1/4" FNPT, (6) 1/4-28
MA-1004	10-port PP, 1/2" MNPT, (1) 1/2" and (3) 1/4" FNPT, (6) 1/4-28



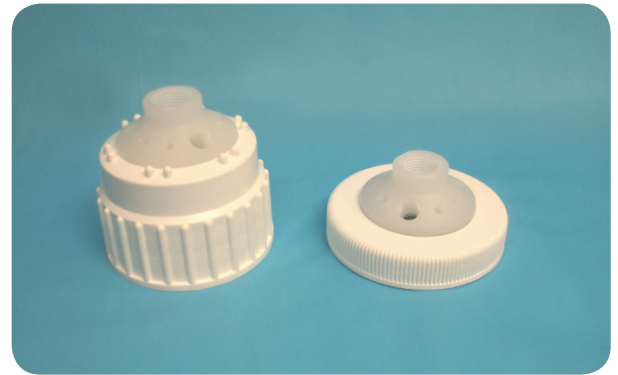
CARBOY MANIFOLDS

- Various manifold options for large and small bore tubing
- Adapt to 83B and 53B, 70mm, 63mm, 61mm and 100-415 carboys and pails

Carboy and drum manifolds permit multiple waste lines of varying size and type to be connected to the container of your choice. If more tubing lines need connecting than a manifold will permit, use of the appropriate stacking unit will increase the number of ports to suit your needs. Panel mount manifolds may also be used if a nonstandard cap is present; either drill a 1.125" diameter hole (max 1/2" depth) in the cap and thread in place for a secure seal, or remove the lock ring to install in the 3/4" NPT knockout threads found on some carboy caps.



SV-127
53B 6-ported manifold, with free-spinning cap collar; with (5) 1/4" NPT ports, (1) 1/2" NPT port



SV-215 and SV-225
83B Nalgene (left, SV-215) and 100-415 Nalgene (right, SV-225), with free-spinning cap collar and 10 ports: (1) 1/2" NPT, (3) 1/4" NPT, and (6) 1/4-28



CM-1013
70mm (Hedwin) 10-ported manifold with (6) 1/4-28 ports, (3) 1/4" NPT ports

CARBOY AND PANEL-MOUNT WASTE MANIFOLDS

CARBOY MANIFOLDS

SV-1047	DIN 50, 10-ported, PP
CM-1007	51mm, 10-ported, PP
SV-127	53B, 6-ported, PP
SV-262	53B, 10-ported, PP
SV-479	DIN 60, 10-ported, PP
CM-1004N	61mm, 10-ported, PP
CM-1011	63mm, 10-ported, PP
CM-1013	70mm Hedwin, 10-ported, PP
SV-215	83B, 10-ported, PP, free-spinning collar
SV-225	100-415, 10-ported, PP, free-spinning collar

PANEL MOUNT MANIFOLDS

PM-305	Panel-Mount, 3-ported, PP/EPDM, cam lock
PM-605	Panel-Mount, 6-ported, PP/EPDM, cam lock



MANIFOLD BOTTLE CAPS

- 3-, 6-, 7-, and 9-ported manifolds
- Polypropylene or PTFE construction
- For GL45, GL38, and Nalgene 38-430 bottles

When using a carboy or Justrite container is not economical or practical, it may be useful to dispose of solvent wastes into a standard laboratory bottle. For vapor control, attach an EF-100 vapor filter with filter adapter to one port when connecting solvent wastes. Most manifolds may also be used to supply solvent to a system; use evaporation control valves to handle the air inlet or pressure relief when used for solvent delivery.



BC-722
7-port manifold for GL45 bottle, with (6) 1/4-28 radial ports, (1) 1/4" NPT top port



BC-723
7-port all-PTFE manifold for GL45 bottle, with (6) 1/4-28 radial ports, (1) 1/4" NPT top port



BC-324-PTFE and BC-326-PTFE
3-port manifold for GL45 bottle, with (3) 1/4" NPT ports, PTFE



BC-622
6-port manifold for GL45 bottle, with (5) 1/4" NPT ports radially, (1) 1/2" NPT top port
Shown with BC-151 thread adapter for GL38 bottle

MANIFOLD BOTTLE CAPS

GL38 MANIFOLD CAPS

BC-326 3-port manifold, PP

BC-620 6-port manifold, PP

BC-720 7-port manifold, PP

BC-724 7-port manifold, all PTFE fluid paths

BC-920 9-port manifold, all PTFE fluid paths

GL45 MANIFOLD CAPS

BC-324 3-port manifold, PP

BC-622 6-port manifold, PP

BC-722 7-port manifold, PP

BC-723 7-port manifold, all PTFE fluid paths

BC-922 9-port manifold, all PTFE fluid paths

MANIFOLD CAPS FOR NALGENE 38-430

BC-350 3-port manifold, PP

BC-640 6-port manifold, PP (solvent waste only), PP

BC-940 9-port manifold, all PTFE fluid paths

CARBON FILTERS

- Minimize odors by adsorption before they enter the lab environment
- Constructed of activated coconut shell carbon and silica dessicant, with Polypropylene housing
- Economically priced

Reduce odors from solvent waste containers by installing a Vaplock carbon filter, which may be adapted to a number of low pressure emission sources. Dispose of spent cartridges in accordance with local safety codes.



EF-100V

EF-200
With drum thread adapter

CARBON FILTER ADAPTERS

- Adapt carbon filters to point source emissions
- Custom adapter solutions available
- All adapters are reuseable

VAPLOCK EF-100 carbon filters require an adapter for connection to various emission sources. Each filter contains a tapered 1/4" female NPT port; select from the list to adapt filters to a typical system, or contact your distributor for assistance with any special requirements. Note that filter adapters for Justrite containers are made to fit either stainless steel or Polypropylene quick disconnects, but may not be interchangeable. Stainless must connect to stainless, Polypropylene to Polypropylene.

FA-017
Adapts filter to a female Polypropylene quick disconnect on a Justrite waste can, with elbow adapterFA-005
Adapter with 1/2" NPT male threadFA-004
Adapter with 1/4" NPT male threadFA-010
Adapts filter to a female Polypropylene quick disconnect on a Justrite waste canFA-018
Adapts filter to a female stainless steel quick disconnect on a Justrite waste can, with elbow adapterFA-015
Adapts filter to a female stainless steel quick disconnect on a Justrite waste can

ACTIVATED CARBON VAPOR FILTERS

EF-100	Vaplock 75 gram cartridge
EF-100V	Vaplock 75 gram cartridge, pack of 5
EF-200	Vaplock 300 gram cartridge
EF-400	Vaplock 475 gram cartridge
EF-102	Color indicator for HPLC Reverse and Normal phase
EF-111	Type 2 color indicator for Hexane

VAPOR FILTER ADAPTERS

FA-004	1/4" NPT adapter, Polypropylene
FA-005	1/2" NPT adapter, Polypropylene
FA-010	Justrite® can adapter, PP / EPDM
FA-015	Justrite® can adapter, SS / Teflon®
FA-017	Justrite® can adapter, elbow, PP / EPDM
FA-019	Justrite® can adapter, elbow, SS / Teflon®