

**FLUOR/Away**<sup>™</sup>  
Catalog # FA-S  
**Installation, Operation, &  
Service Manual**  
Version 1.1, April 2004

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## DESCRIPTION of FLUOR/Away™

FluorAway is a system for extracting ethidium bromide and other hazardous fluorescent dyes from aqueous waste. The FLUOR/Away system is comprised of the replaceable FluorAway II cartridge, an upper chamber which holds up to 500mls of aqueous waste, and a reservoir which collects up to 950 mls of clean, drain disposable liquid. The FLUOR/Away system operates with a vacuum at a flow rate of up to 500 mls/min. For optimal performance, the flow rate should not exceed 200 mls/min.

The FLUOR/Away II cartridge, containing the extracted waste molecules, can be disposed of as a dry solid waste at a greatly reduced cost. The processed liquid can be poured down the drain.

*The unused FLUOR/Away II cartridge contains no hazardous materials.*

## PERFORMANCE SPECIFICATIONS

FluorAway will bind:

- Ethidium bromide
- SYBR Green I
- Other fluorescent dyes

One FLUOR/Away II cartridge will process 20 liters of a typical working solution of ethidium bromide (EtBr) (0.5 ug EtBr/ml) with >99.95% binding. The processed liquid can be safely drain disposed up to the maximum volume of 20 liters per cartridge.

FluorAway may be useful for extracting fluorophores (toxic or non-toxic) from some organic solvents. ***However, the FLUOR/Away system is constructed from polysulfone and is incompatible with most hydrocarbons and esters.*** Please call Triangle Biomedical Sciences Customer Service at 919-384-9393 prior to using FluorAway for organic solvent purification.

## USING The FLUOR/Away SYSTEM

### **1. The FLUOR/Away System includes**

- One FLUOR/Away filter tower
- Two FLUOR/Away II cartridges
- Four disposal caps
- Four silicone caps
- One vacuum adapter
- FLUOR/Away Usage Log Label
- Hand pump & tubing

### **2. Assembling the FLUOR/Away System**

Please refer to the product diagram on page 4.

- Locate the FLUOR/Away filter unit (#4 and #11).
- Disassemble components by turning the locking ring (#5) counter-clockwise.
- Locate one of the FLUOR/Away II cartridges (#8).
- Verify that the red O-rings (#6) are in place beneath the lip at the top of the cartridge and at the bottom of the upper chamber.

**WARNING: The FLUOR/Away system will not operate safely without properly positioned o-rings.**

- Label the unit with the enclosed "Usage Log".
- Remove the shipping seals from the top and bottom of the cartridge.
- Insert the cartridge into the reservoir.
- Reassemble components (#4) and (#11).
- Attach the vacuum adapter (#10) to one of the ports on the reservoir (#11).
- Do not place all three silicone caps on top of unit when applying vacuum.

**Note:** When placing the upper chamber on the tower, spin the white locking ring counterclockwise to set the ring, then turn the ring clockwise to tighten. Visually check the ring to make sure it is properly seated. If seated improperly, the tower will leak.

**Always use good laboratory practices when handling hazardous materials.**

### 3. Filtering Liquid Containing Fluorophores

**Recommendation:** It is recommended that a vacuum trap be placed in-line between the FLUOR/Away system and the vacuum source.

- Remove the upper chamber cover (#2) from the upper chamber.
- To ensure that there are no leaks at the locking ring, pour 100 mls distilled water into the upper chamber and allow the fluid to flow through the cartridge under vacuum.
- Tighten the locking ring after the vacuum is applied to prevent leaking.

**WARNING: If leaking occurs, check to see that the locking ring is securely fastened. If leaking persists do not use unit. Call Triangle Biomedical Sciences at 919-384-9393.**

- Add up to 500 mls of the liquid to be processed.
- Replace the upper chamber cover.
- Connect the FLUOR/Away system to the vacuum and process the waste at up to 500 mls/min. For optimal performance, the flow rate should not exceed 200 mls/min.

**Note:** The maximum volume of 0.5 ug/ml EtBr waste that can be processed for each FluorAway II cartridge is 20 liters. Binding will decrease if you exceed the maximum volume.

**Caution:** Do not allow the system to become dehydrated. To prevent dehydration, pour 100 mls of water in the upper chamber and allow it to sit between uses. Also, place the silicone caps on the three open ports located on the upper chamber cover.

#### 4. Handling the Filtered Liquid

**Caution:** *The vacuum must be turned off and the tubing disconnected from the FLUOR/Away system prior to handling the processed liquid.*

##### Draining the Filtered Liquid

If the cartridge needs to be changed:

- Remove the upper chamber from the reservoir.
- Remove the cartridge from the reservoir and place it to one side (see 5. below).
- Pour the processed waste out of the reservoir, making sure that the closed vacuum port is oriented towards the drain.

Or,

If not changing the cartridge:

- Leave the entire system intact.
- Remove the cap and vacuum adapter from the vacuum ports on the reservoir.
- Orient one vacuum port over the appropriate receptacle and *slowly* drain the filtered liquid from the reservoir.

#### 5. Changing the FLUOR/Away II Cartridge

**WARNING:** *Always use gloves when changing the cartridge.*

- Pull a vacuum on the system for five minutes to remove any residual liquid.
- Disconnect the FLUOR/Away system from the vacuum.
- Locate the large and small blue caps (#7 and #9).
- Remove the upper chamber.
- Holding the reservoir with one hand, snap the larger of the two caps onto the top of the FLUOR/Away II cartridge.
- Slowly pull the cartridge for the reservoir.
- Place the bottom of the cartridge into the smaller of the two blue caps.
- Push down firmly on the top cap to secure both caps.
- Dispose of the cartridge as hazardous waste according to your institution's regulations.

#### 6. Troubleshooting

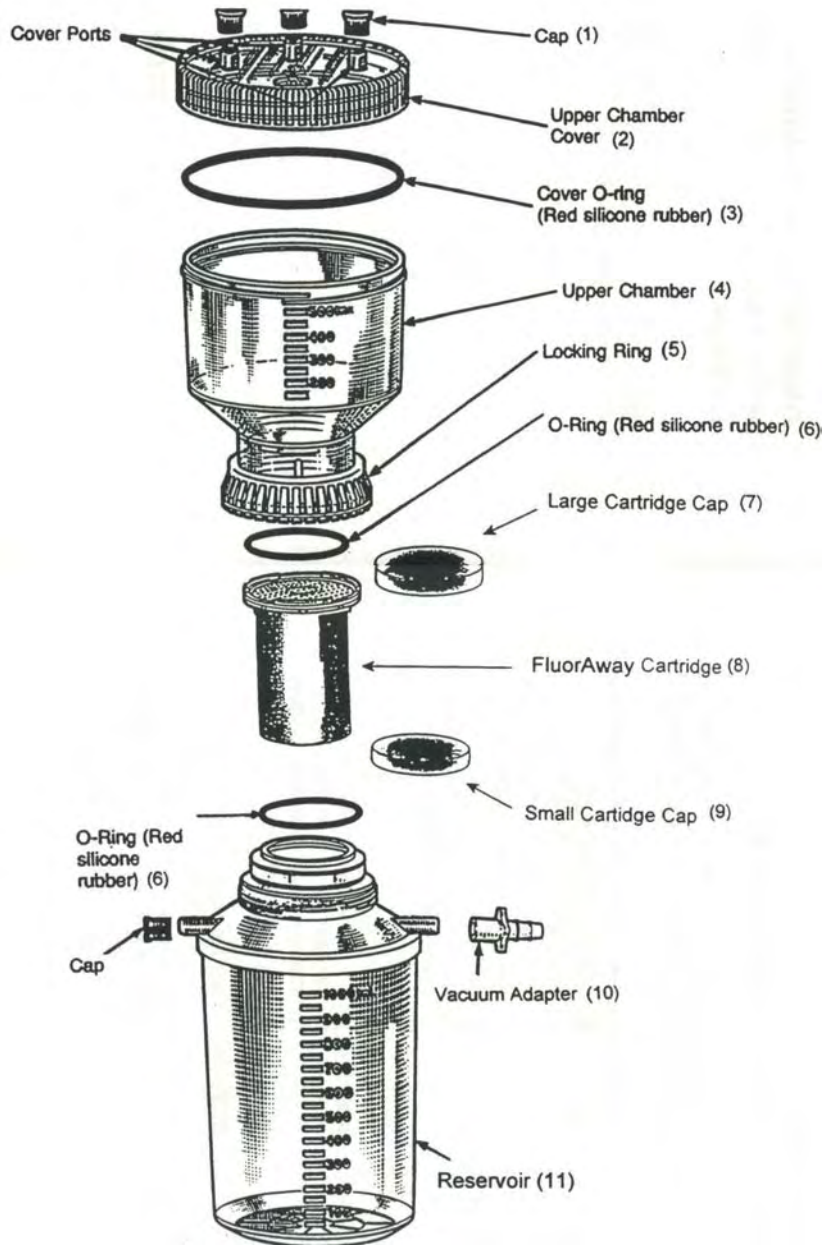
If leaking is encountered, disconnect the vacuum and check to see that the locking ring is properly threaded.

If, when using a new cartridge, there is no flow, ensure that shipping seals have been removed.

If dark liquid leaks from the bottom of the cartridge, do not be alarmed, it is not hazardous. Change the cartridge and call Triangle Biomedical Sciences Customer Service 919-384-9393.

# Product Diagram

## Main Features of the FLUOR/Away System



## TECHNICAL SUPPORT

TBS Customer Service department can be reached by calling (919) 384-9393.

Hours of Operation are:

Monday through Thursday: 8am-6pm (EST)

Friday: 8am-5pm (EST)

TBS Technical Product Service department can be reached by calling 1-800-871-5975.

Hours of Operation are:

Monday through Thursday: 8am-6pm (EST)

Friday: 8am-5pm (EST)

### Appendix 1

The FLUOR/Away system is constructed from Polysulfone (PSF). Please use this reference chart to determine if the liquids you are filtering over the FLUOR/Away system are compatible with PSF.

<u>Classes of Substances</u>	<u>Compatibility</u>	<u>Compatibility Key</u>
Acids, dilute or weak	Excellent	<b>Excellent:</b> 30 days of constant exposure causes no damage. Plastic may even tolerate for years. <b>Good:</b> Little or no damage after 30 days of constant exposure to the reagent <b>Fair:</b> Some effect after 7 days of constant exposure to the reagent. The effect may be crazing, cracking, loss of strength or discoloration. <b>Not Recommended:</b> Not recommended for continuous use. Immediate damage may occur. The effect will be a more severe crazing, cracking, loss of strength, discoloration or permeation loss.
Acids, strong or concentrated	Good	
Alcohols, aliphatic	Good	
Aldehydes	Fair	
Bases	Excellent	
Esters	Not Recommended	
Hydrocarbons, aliphatic	Good	
Hydrocarbons, aromatic	Not Recommended	
Hydrocarbons, halogenated	Not Recommended	
Ketones	Not Recommended	
Oxidizing agents, strong	Good	

## **WARRANTY INFORMATION**

### ***USE AND REGULATION***

FluorAway is a product for concentration of hazardous waste. While FLUOR/Away reduces the volume of hazardous waste, use of FLUOR/Away does not exempt the user from laws and regulations applicable to the treatment, handling or disposal of such wastes. It is the user's responsibility to handle and dispose of the FLUOR/Away cartridge and any filtered liquid in compliance with all-applicable laws and regulations. By using FLUOR/Away the user represents and recognizes that the user is knowledgeable in the handling of hazardous wastes and related material, assumes the risk of handling such wastes and materials and that the user needs to and will take appropriate independent precautions and will comply with all the applicable federal, state and local regulations for the handling of FLUOR/Away and hazardous material used in connection with FLUOR/Away. FLUOR/Away will not function properly if the enclosed instructions are not followed. Safe use of FLUOR/Away requires, but is not limited to proper assembly of the FLUOR/Away system as demonstrated in the enclosed instructions and using appropriate protective devices when using FLUOR/Away. Users of FLUOR/Away should contact their institution's safety officer or safety committee to confirm procedures for using FLUOR/Away under the institution's safety procedures.

### ***DISCLAIMER***

FLUOR/Away is warranted to the buyer to be free of defects in materials and workmanship when used in accordance with the enclosed instructions for a period of one year after delivery. TBS will repair, replace, at it's option, any products that are found to be defective, provided that the buyer gives written notice of the defect within the warranty period. Buyer shall make product available for TBS's inspection or at TBS's option shall return the product to TBS. TBS will return a new product to buyer, freight prepaid to any location. This warranty is in lieu of all other warranties or obligations expressed or implied. TBS expressly disclaims all implied warranties of merchantability or fitness for a particular purpose. Buyers' exclusive remedy for breach of warranty is replacement or refund at TBS's option.

### ***LIMITATIONS & LIABILITY***

In no event will TBS be liable for any indirect special, incidental, punitive or consequential damage of any kind, sustained from any cause relating to the FLUOR/Away product. In no event shall TBS be liable to buyer in an amount exceeding the purchase price. These limitations apply to any claim, whether based upon contract, negligence, strict tort liability, or any other legal theory, arising out of or relating to the FLUOR/Away product.

*Specification and technical data are current at the time publication; however, they are subject to change without notification. Please contact our North Carolina office for updated information.*