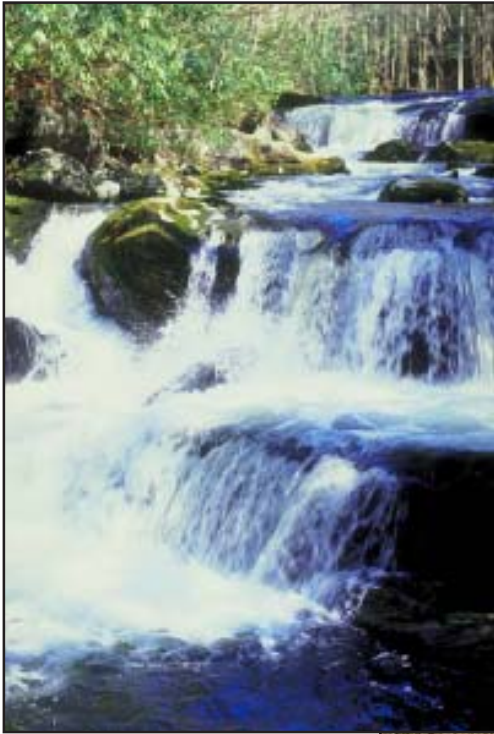


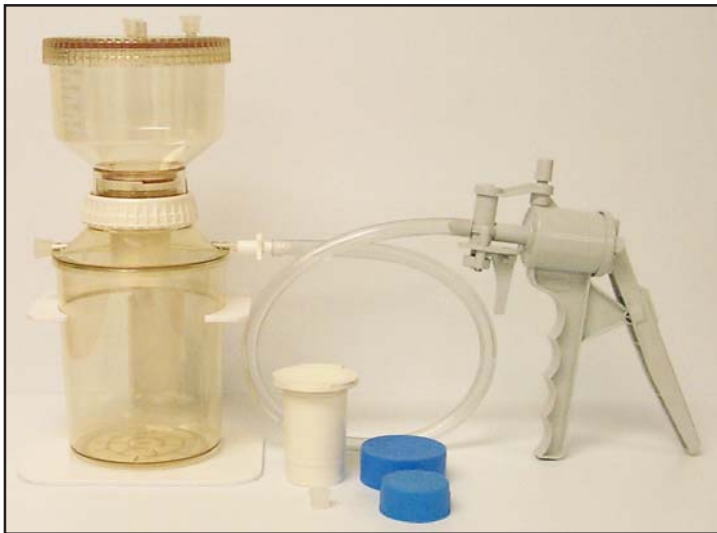
# Environmental Waste Solutions



**TBS**<sup>®</sup>

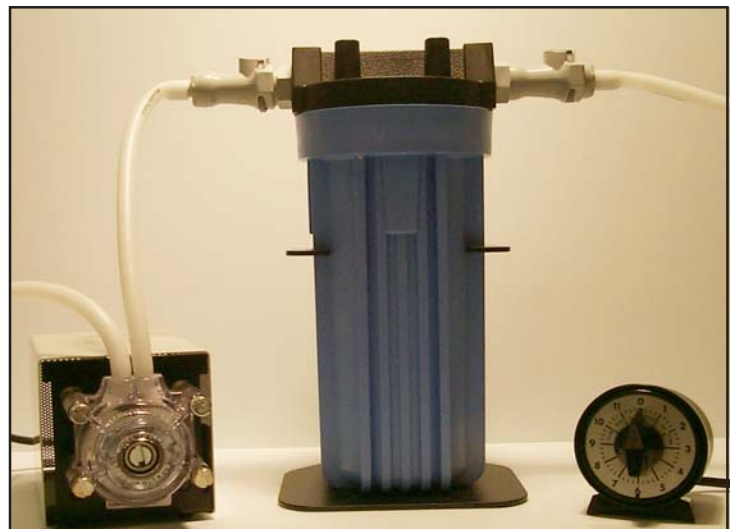
# TECHNOLOGY FOR CHEMICAL WASTE MANAGEMENT

Innovative filtration and chemical engineering technology effectively manage hazardous chemical and clinical waste at the point of generation by solidifying and concentrating hazardous materials into small contained cartridges. Processed effluent can then be drain-disposed or reused depending on applications or regulations.



Small volume benchtop model includes tower, stand, & hand vacuum.

Large volume system includes peristaltic pump, timer, cartridge & stand.



## **RAD/Away™**

Chemically binds radioactive molecules in liquid laboratory waste, concentrating them into a small dry solid that is sealed for disposal, decay or incineration. Also provides an easy mechanism to maintain compliance, lowers waste management costs and limits radioactive material released into the sewer system.

- **Binding** – RAD/Away™ will bind most charged or highly aromatic molecules. Benchtop capacity is 2 liters at >95%. For volumes greater than 20 liters, use the Large Volume System (LVS)
- **Uses** – System can be utilized with a variety of radionucleotides including <sup>3</sup>H, <sup>14</sup>C, <sup>32</sup>P, <sup>35</sup>S, I<sup>125</sup>
- **Application** – RAD/Away™ can filter DNA sequencing gel buffers, tissue culture media, hybridization solutions (<0.5% SDS), Radioimmunoassays (RIAs) and HPLC waste solutions

## **FLUOR/Away™**

Extracts Ethidium bromide and other fluorescent dyes from aqueous solutions, eliminating hazardous liquid waste, which reduces the potential for spills and reclaims valuable lab space.

- **Efficiency** – FLUOR/Away™ binds >99.9% of Ethidium bromide from a standard (0.5µg/ml EtBr) solution at a flow rate of 100ml per minute
- **Protection** – By providing a sealed container for disposal, handling and personal exposure is kept to a minimum
- **Volume** – FLUOR/Away™ benchtop cartridges can process 20 liters of standard staining solution (0.5µg/ml EtBr) and have a maximum binding capacity of 10mg/cartridge. For volumes over 100 liters use the Large Volume System (LVS).

## **DAB/Out™**

Removes and binds diaminobenzidine (DAB) and other carcinogens from aqueous waste generated by automated immunohistochemistry (IHC) staining instruments. The DAB is contained in the replaceable cartridges and the processed effluent can be safely dumped down the drain. The cartridge containing the DAB can be disposed of as hazardous chemical waste and is safe for incineration.

- **Value** – DAB/Out™ provides an environmentally safe method for DAB waste disposal. Easy-to-use system is a cost-effective alternative to other methods of waste management. Simple hands-off operation reduces exposure and minimizes technical training time.
- **Process** – Advanced filtration technology is used to chemically bind DAB to the matrix inside the cartridge. If you purchase the large volume system, DO-LVS, each cartridge, DO-LVC-C, can process approximately 120 liters (30 gallons) of IHC waste from automated IHC stainers. The DO-S benchtop system cartridge, DO-C, is practical for managing waste generated from manual IHC staining procedures. Each new cartridge comes with bactericide ampoules to limit bacteria contamination and growth.
- **Convenience** – Small size saves valuable lab space and allows the system to be portable. No dangerous or ineffective neutralization procedures. Waste is treated at the point of generation so there is no build-up of hazardous chemical waste in the lab. DAB/Out™ comes complete and ready to adapt to any automated IHC machine. DAB/Out™ is also available in a low volume benchtop system for manual staining DAB waste.

# TECHNOLOGY FOR SOLVENT &

**SOLV/Cycle™**

Filters out stains, dyes and cellular debris from contaminated alcohol generated by histology and cytology staining procedures. The clean recycled solution is the identical concentration and chemical composition as the original alcohol. Processed alcohol can then be placed back into the stain line to be reused again and again.



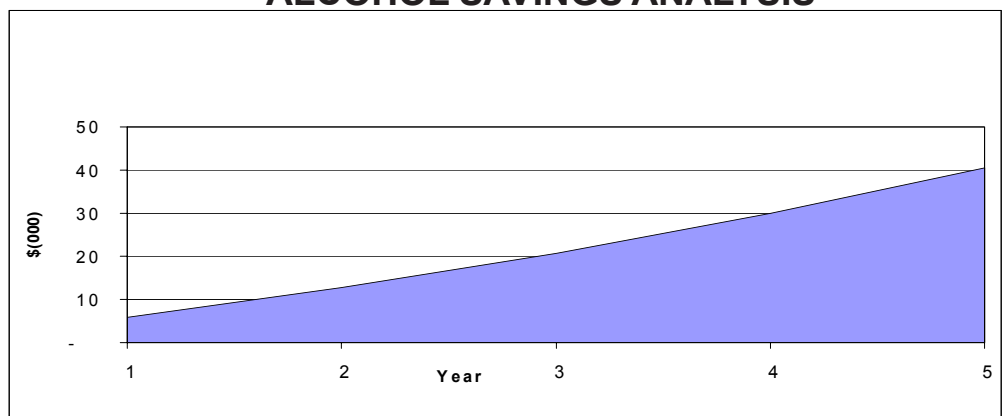
- **Speed** – SOLV/Cycle™ can continuously process six liters of contaminated alcohol per hour. There is no waiting for cool down or change over cycles between processing runs.
- **Safety** – Filtration technology eliminates the need for heating, ventilation, a water source or a drain. The SOLV/Cycle™ system is self-contained, designed to minimize spills and reduce personal exposure.
- **Capacity** – Under normal laboratory Eosin Y concentrations, each SOLV/Cycle™ cartridge is capable of processing over 500 liters of alcohol. This small compact system does not take up valuable lab space.

## ALCOHOL SAVINGS ANALYSIS

Payback Period  
(months)  
**19.0**

Average Annual Savings  
**\$8,103**

Return On Investment  
**285%**



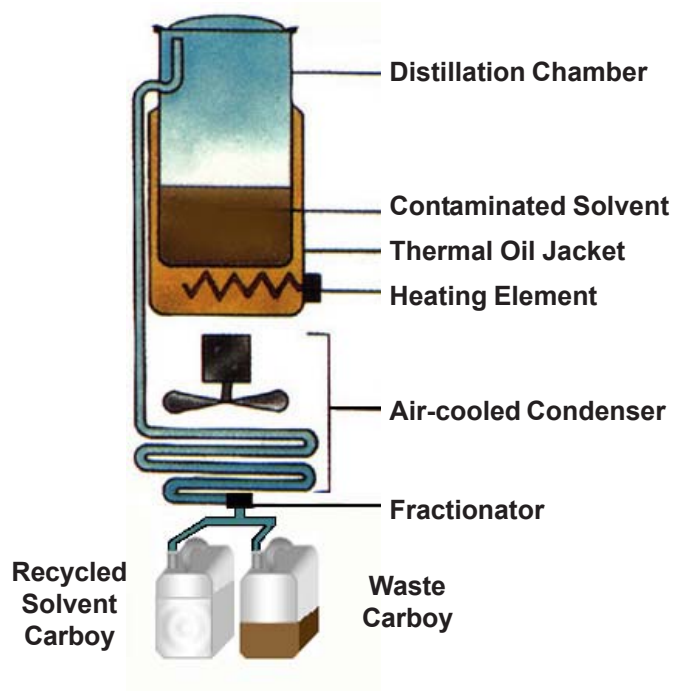
For a customized alcohol savings analysis, contact your TBS Sales Representative, at 919-384-9393.

# REAGENT RECYCLING

## SR12™ Solvent Recycler

The SR12™ Solvent Recycler is designed to manage your solvent consumption while contributing to a greener environment by economically recovering laboratory solvents with boiling points between 50° and 180°C. Contaminated solvents are placed into the 10 liter distillation chamber and heated to their boiling points. The unit converts purified solvent vapors back into a liquid state by directing the vapors through an air-cooled condenser. A three-way fraction switch separates the recovered solvents into collection containers. The SR12™ supplies a continuous stream of purified alcohol and xylene by recycling 3 gallons in 6 hours.

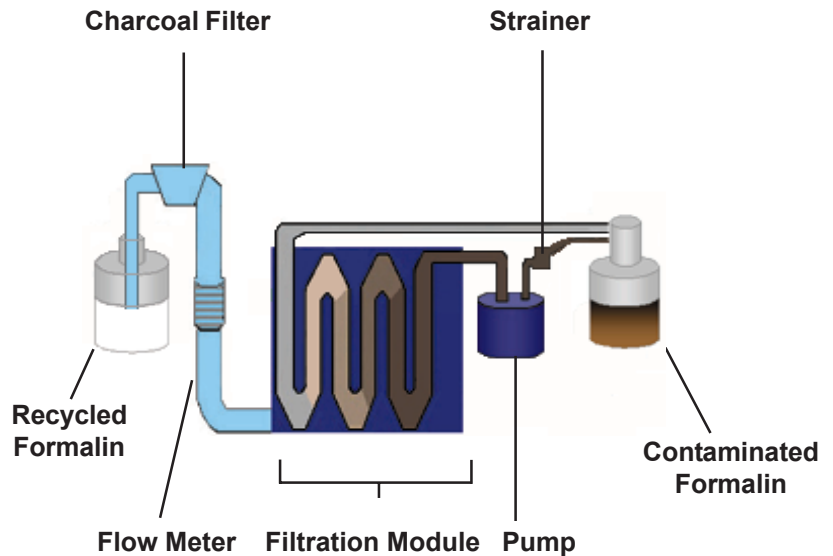
- **Simple** – User-friendly time/temperature controls allow the recycling of xylene from tissue processor xylene/alcohol/water mixtures and alcohol from slide stainer alcohol/water mixtures.
- **Exposure** – No fumes are released during recycling and there are no glass parts to break. The stand-alone system requires no water, is cool to the touch and is explosion proof. Cleanup is made easy with replaceable disposable bags.
- **Effective** – By recovering 95% xylene and 85% alcohol, your laboratory will save money by reducing the volume of hazardous waste generated, lowering the cost of off-site waste removal, decreasing the time associated with collection and by eliminating paperwork.



# TECHNOLOGY FOR ENVIRONMENTAL

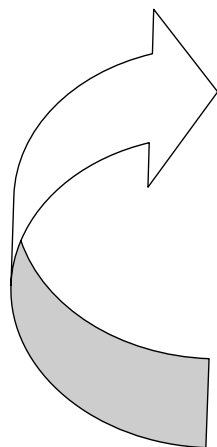
## VML 3000™ Formalin Recycler

The VML3000™ offers a simple and safe method for recycling formalin. Its patented semi-permeable membrane filtration process reduces new formalin purchases by 90%, eliminates disposal costs and messy neutralization procedures, and provides a constant supply of available formalin.

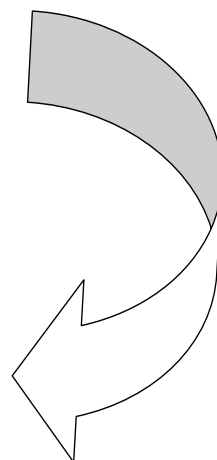


- **Proficient** – Three different filtration systems are used to remove tissue particles, fats, proteins, dyes, inks and micro-organisms. Recycle five gallons of formalin in less than two hours. Technician time per run is five minutes or less.
- **Refined** – The VML3000™ recycler is simple to use. Dirty formalin is automatically pumped into the recycler through a strainer, a filtration module and a charcoal filter. Permeate is expelled into a clean carboy and retentate is returned to the holding carboy.
- **Trouble-free** – This system purifies and clarifies the fumes associated with conventional distillation methods. The unique filtration module allows the user to clean the filter, using pour spheres eliminating the cost of disposable filters.

# REGULATORY COMPLIANCE

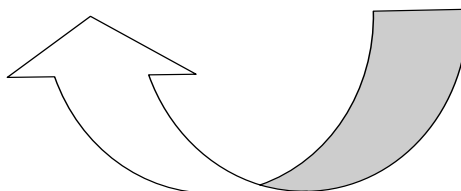


**REDUCE**  
Hazardous Waste  
Cut Waste Management Cost



**REUSE**  
Save money on solvent  
purchases, disposal, and  
storage

**RECYCLE**  
Improve Laboratory Safety  
Save the Environment



## SAFETY/QUALITY STANDARDS

**RAD/Away™**, **FLUOR/Away™**, **SOLV/Cycle™**, **DAB/Out™**, **VML 3000™**, and **SR12™** have been tested by registered independent bodies to rigorous international quality and safety standards, and have been found to be in compliance with the following regulations/specifications:

**RAD/Away™**  
**FLUOR/Away™** CE · IEC 1010-1 · UL 3101-1 · CSA C22.2, No. 1010-1  
**SOLV/Cycle™**  
**DAB/Out™**

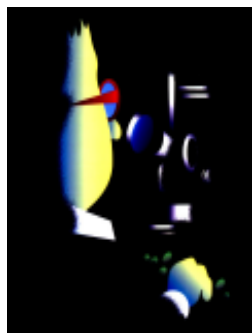
**VML3000™** Conforms to: Ansi/UL 1262  
UL Std. 1604  
Certified to: CAN/CSA C22.2 Std. 88  
CAN/CSA C22.2 Std. 213  
Electrical Equipment for use in Class I & II Hazardous (Classified) Location

**SR12™** Fully explosion-proof (Class 1, Division 1, Group D) for use with flammable solvents  
Complies with nationally recognized safety standards by ETL's independent testing laboratory.



# Specifications & Ordering Information

Cat #	U/M	Description
<b>RAD/Away™</b>		
RA-S	ea	<b>RAD/Away™</b> Benchtop System, low level radioactive waste removal system for volumes <10 liters. Includes tower, stand, hand vacuum and two cartridges (RA-C), Size: (7 x 6.5 x 12)in. (21 x 16.5 x 30.5)cm
RA-C	cs	Cartridge, Replacement for <b>RAD/Away™</b> Benchtop system (RA-S), 6 ea/cs., Size: (8 x 6 x 5)in. (3 x 15 x 13)cm
RA-LVS	ea	<b>RAD/Away™</b> Large Volume System (LVS), aqueous low level radioactive waste removal system for volumes >20 liters. Includes two quick-connect adapters, disposable sealing plug and cap, cartridge stand, parastaltic pump, timer & one LVS cartridge (RA-LVS-C), Size: (15 x 15 x 15)in. (38 x 38 x 38)cm, 115VAC, 60Hz, 2 Amp max.
RA-LVS-C	cs	Cartridge, Replacement for <b>RAD/Away™</b> LVS system (RA-LVS), 6 ea/cs., Size: (13 x 7 x 14)in. (33 x 18 x 35.5)cm
<b>FLUOR/Away™</b>		
FA-S	ea	<b>FLUOR/Away™</b> Benchtop System, fluorescent dye removal system for volumes <50 liters. Includes tower, stand, hand vacuum and 2 cartridges (FA-C), Size: (7 x 6.5 x 12)in. (21 x 16.5 x 30.5)cm
FA-C	cs	Cartridge, Replacement for <b>FLUOR/Away™</b> Benchtop system (FA-S), 6 ea/cs., Size: (8 x 6 x 5)in. (3 x 15 x 13)cm
FA-LVS	ea	<b>FLUOR/Away™</b> Large Volume System (LVS), fluorescent dye removal system for volumes >100 liters. Incl. two quick-connect adapters, disposable sealing plug and cap, cartridge stand, 60rpm parastaltic pump, timer, and one LVS cartridge (FA-LVS-C), Size: (15 x 15 x 15)in. (38 x 38 x 38)cm, 115VAC, 60Hz, 2 Amp max.
FA-LVS-C	ea	Cartridge, Replacement for <b>FLUOR/Away™</b> LVS system (FA-LVS), Size: (13 x 7 x 14)in. (33 x 18 x 35.5)cm
<b>SOLV/Cycle™</b>		
SC-SH	ea	<b>SOLV/Cycle™</b> Medium Volume System (MVS). Alcohol recycling system for histology. Includes two 4-liter waste collection bottles (one set), quick-connect waste collection tubing adapters, stand, air pump, timer, and two histology cartridges (SC-SH-C), Size: (28 x 16 x 14)in. (71 x 40.5 x 35.5)cm, 125VAC, 60Hz, 0.5 Amp max.
SC-SC	ea	<b>SOLV/Cycle™</b> Medium Volume System (MVS). Alcohol recycling system for cytology. Includes two 4-liter waste collection bottles (one set), quick-connect waste collection tubing adapters, stand, air pump, timer, and two cytology cartridges (SC-SC-C), Size: (28 x 16 x 14)in. (71 x 40.5 x 35.5)cm, 125VAC, 60Hz, 0.5 Amp max.
SC-SH-C	ea	Cartridge, Replacement for <b>SOLV/Cycle™</b> MVS for histology (SC-SH), Size: (13 x 7 x 14)in. (5 x 2.5 x 5.5)cm
SC-SC-C	ea	Cartridge, Replacement for <b>SOLV/Cycle™</b> MVS for cytology (SC-SC), Size: (13 x 7 x 14)in. (5 x 2.5 x 5.5)cm
<b>DAB/Out™</b>		
DO-S	ea	<b>DAB/Out™</b> Benchtop System, diaminobenzidine (DAB)removal system for hand staining work, volumes <2 liters. Includes tower, stand, hand vacuum and one cartridge (DO-C), Size: (7 x 6.5 x 12)in. (21 x 16.5 x 30.5)cm
DO-C	cs	Cartridge, Replacement cartridge for <b>DAB/Out™</b> Benchtop system (DO-S), 6 ea/cs., Size: (8 x 6 x 5)in. (3 x 15 x 13)cm
DO-LVS	ea	<b>DAB/Out™</b> Large Volume System (LVS), diaminobenzidine removal from automated IHC waste for volumes >20 liters. Includes stand, parastaltic pump, tubing, timer, siphon tube, and one LVS cartridge (DO-LVS-C), Size: (14 x 11 x 9)in. (35.5 x 28 x 23)cm, 115VAC, 60Hz, 2 Amp max.
DO-LVS-C	ea	Cartridge, Replacement cartridge for <b>DAB/Out™</b> LVS system (DO-LVS), Size: (13 x 7 x 14)in. (5 x 2.5 x 5.5)cm
<b>SR 12™ Solvent Recycler</b>		
SR-12	ea	Solvent Recycler, distillation, 3 Gallons, Explosion-proof, ETL approved, 115VAC, 60Hz
SR-12-SB	cs	Solvent Bag, Disposable, 3 Gallons, 50/cs
HO	ea	Heating Oil for Solvent Recyclers, 2.5 Gallons, use w/SR12
<b>VML 3000™ Formalin Recycler</b>		
VML-3000	ea	Formalin Recycler, filtration, 5 Gallons, w/2 ea. 5 Gallon collection carboys, four-wheel cart and accessories, 110VAC, 60Hz
VML-3000-CP	cs	Cleanser & Purifier, 8oz. bottle, 12ea/cs



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