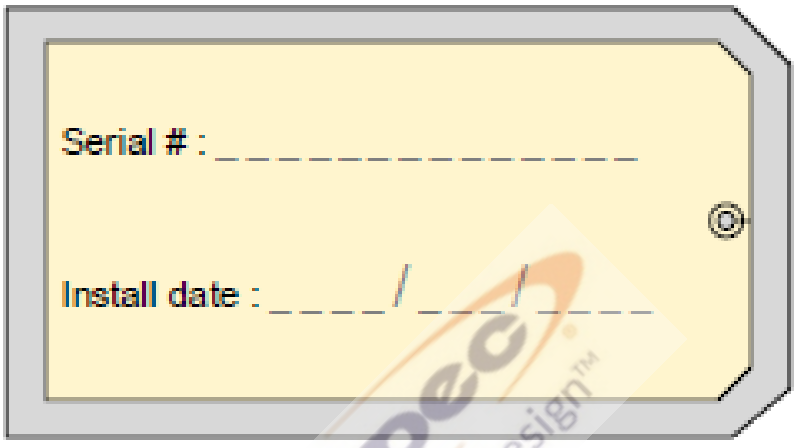
USER MANUAL

BF100
Ventilated Formalin Cube Station

Rev 4-19-17 ©



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UNPACKING

1) Carefully inspect the exterior of the shipping container before opening. If the crate is damaged and the product has sustained damage then immediately contact Mopec and the freight carrier. **Never discard the shipping container even if it is damaged beyond recognition.**

2) Have the delivery driver note any suspected damage on the Bill of Lading and sign it. Mopec will help assist in filing a claim for product repair and/or replacement.

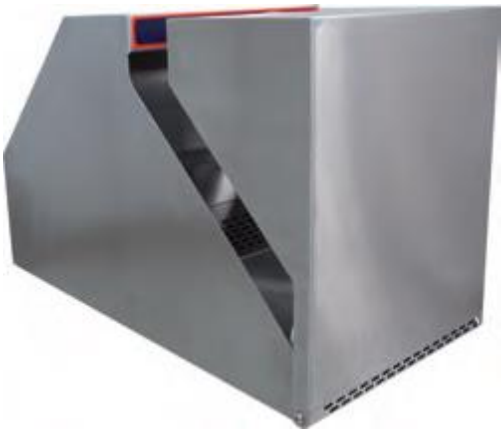
3) Carefully open the containers and inspect the equipment for concealed damage. If visible damage is noticed (i.e. broken welds, dented stainless, scratches, etc.) follow through as noted above. Do not discard the shipping material. They are important in settling claims.

CAUTION: There are loose components in the packaging of your product. Be very careful in examining the packaging material as it may contain installation parts and/or product components.

INSTALLATION

1. Place on counter.

2. Unsnap straps. This will allow drip shelf to hang down. When not in use, fold up and snap back in place to securely hold shelf.



3. Place pad on drip shelf.

4. Plug unit into 110V wall socket (requires 3 amp power).

5. On/off switch is located on backside of unit

6. Insert BF005 Potassium Permanganate Filter where shown. Place the fiber filter on the bottom and the potassium permanganate filter on top of the fiber filter

7. Place formalin cube in unit.

8. Turn the unit on

INTRODUCTION

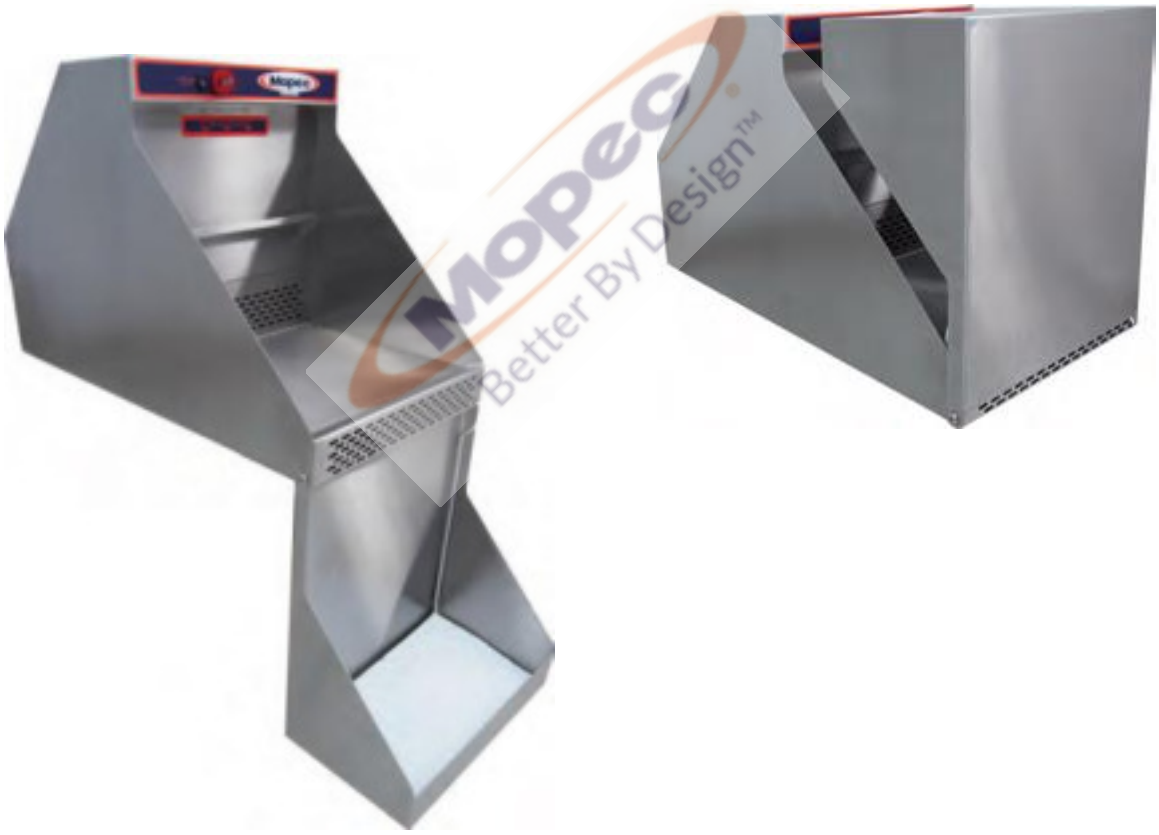
The BF100 is a ventilated gravity fed formalin dispensing system that holds one five gallon cube of formalin. It is a self-contained recirculation unit. A high speed fan pulls the formalin fumes away from the user. Two filters catch particles and formalin fumes. The BF100 includes an audio and visual alarm to notify the user of a leak or spill.

When not in use the spill containment pan folds up and is held in place with a snap strap.

FEATURES

Designed to safely evacuate fumes while filling containers

• Recirculating Filtration System with Pull-Out Filter Drawer contains:
    1 BF005 - Potassium Permanganate Filter
    1 BF003 - Particle Filter
    1 BF101 Formalin Neutralization Pad
• Drip and Spill Containment in Hinged Pan can hold a spill up to 1.6 gallon. Includes a formalin absorbing pad
• Metal strap with push button snap holds drip pan in the closed position
• Audio and Visual Alarm to alert personnel of spill. (Audio alarm can be muted)
• Using 134 CFM, the Ventilated Formalin Cube will provide a safer work environment
• 110V 60Hz Hospital Grade Line Cord
• All Stainless Steel Construction
• Dimensions: 15.2" L x 36.17"D x 35.28" H Open/operational
• Dimensions: 15.2" L x 28.06"D x 18.5" H Closed position



AIR HANDLING

BF100 Ventilated Formalin Cube Station Design Parameters:
The BF100 is designed with the basis of fulfilling one goal and that is to adequately ventilate the work area. An adverse effect of ventilation is noise that has been considered but does not govern the ultimate design criteria. Our design criteria is the most stringent utilizing exerts as outlined from “Industrial Ventilation” by Committee on Industrial Ventilation and Escape Velocity Parameters

Identification Description Ventilation Volume

The BF100 is a Re-circulating (Self-contained exhaust Systems): This system is simply a self-contained exhaust system to provide the BF100 Ventilated Formalin cube station. Air is ventilated through the exhaust grill and circulated through a particle filter and potassium permanganate filter and exhausted out the back of the unit. The exhaust fan is 134CFM free air rated and is internal.

GOOD PRACTICE WILL OPTIMIZE OUR PROTECTION:
1. Never block the ventilation grill.
2. Placing open containers as close to the exhaust grill as possible, yet never blocking the ventilation grill.
3. Strategically locate the BF100 away from room air currents.

Although the BF100 Ventilated Formalin Cube Station can be the answer to reduce formaldehyde exposure, Mopec cannot assume responsibility of exposure since good laboratory practices and room conditions are beyond Mopec’s control.

DISINFECTING STAINLESS STEEL SURFACES

All stainless steel surfaces can be cleaned with soap and water, which will remove debris. The stainless steel surfaces can be disinfected with a non caustic disinfectant. We suggest using BE045 Path Cloud or BE047 Bench Wipe for cleaning purposes. We recommend you **NOT USE** a bleach solution to clean your unit. Bleach will eventually erode stainless steel if not thoroughly rinsed. The use of chlorine bleach will **VOID THE STAINLESS STEEL WARRANTY**

During the cleaning we suggest wiping the surface in the same direction as the satin finish which will help lift up dirt from the grain finish. Scratches can be removed simply by utilizing a "non-metallic" abrasive pad and rubbing in the same direction as the satin finish.

Since most abrasive pads vary from one supplier to another, we suggest rubbing the entire surface to blend the scratch and blend the balance of the surface.

Filter—will usually need to be changed based upon a 30-45 day usage.

• If unit is operating 24/7, the filter will need to be changed on an average of every 30 days. **To check the saturation of your filters,** please click the link and watch the video

• Once a year, blow out fan in back

• If pad has been changed from excessive dripping and alarm still flashes and sounds, wipe sensor pad with a dry, clean cloth. Place pad back on shelf.

Replacement Filters

BF005 Potassium Permanganate Filter

BF003 Particle Filter

BF101 Formalin Neutralization Pad (3 Pack)

EVALUATING FILTERS FOR REPLACEMENT

The filters in your MB unit contain alumina pellets impregnated with potassium permanganate, $KMnO_4$, which is a fast oxidizer. Formaldehyde passing through the filter is converted to carbon dioxide and water. **The filter's life depends entirely on the amount of formaldehyde fumes passing through the filter.**

The pellets are bright purple when new and become dark brown when spent. Once the inner part of the pellet is brown it is totally spent and must be replaced.

This chemistry is very effective and essentially removes all formaldehyde as long as there is active $KMnO_4$ available. The efficiency drops off as the filter media approaches its maximum capacity. The last 15-20% capacity will exhibit some pass through of formaldehyde.

Health Hazard Data - Alumina Permanganate Filter Media

Effects of Exposure – The filter media is non-toxic upon oral, skin, and inhalation exposure and is non-irritant of the skin. Breathing of dust may cause sneezing. Skin may feel dry after contact. The filter media is an eye irritant.

PROCEDURE - EVALUATING FILTERS FOR REPLACEMENT

One side of the filter will have a small tab which can be opened just enough to allow one or two pellets to be removed. (see photo)

To determine when the $KMnO_4$ has been exhausted, remove a pellet and slice it in half.

Eye protection is recommended based on the above "Health Hazard Data".

The usefulness of the filter is approximately 80% diminished when the purple color first disappears from the core.

Place the sliced pellet(s) on a paper towel and add a few drops of water. The water running off the pellet(s) should be initially purple and then turn a deep iodine color. If no purple coloration is present, the $KMnO_4$ (Potassium Permanganate) material is totally spent.

When the purple color first disappears from the core of the pellet as described above, the rate at which formaldehyde is removed from the air stream is slowed considerably.

(See Summary On Following Page)

PROCEDURE – VIDEO OF EVALUATING FILTERS FOR REPLACEMENT

From a practical standpoint, it may be desirable to perform the tests on the preceding page more frequently during initial usage of the filters to determine when the purple first begins to disappear from the core of the sliced pellet. Based on these early observations, the user can establish a Replacement Testing Cycle with occasional re-checks for verification.

STAINLESS STEEL CARE AND MAINTENANCE

To maintain your stainless steel product, follow these four steps:
1) **Never, ever use wire brushes, Brillo, steel wool or abrasive cleansers (like Ajax or Comet).** If something needs to be aggressively cleaned only use a Scotch-brite pad or similar product and only scour with the "grain" of the stainless. As an example, please reference the photo on page 2 of this document. It is clear that a very abrasive product was used in an area on the unit and that did not follow the grain of the stainless. The effects of this scratching may diminish over time with proper care but the effects of this scouring are obvious. (The use of the Scotch-brite Pad following the grain over time may help scratches such as this). Depending on the surface finish of your stainless steel, abrasive cleaners can cause scratching. Duller finishes probably won't show scratching as much as mirror or highly polished finishes. When in doubt, test in a hidden spot, and also work from the least risky type of cleaning, (i.e. water) to the heavy duty stuff. **Do not use cleaners containing chlorine.** While it may be second nature to bleach everything, stainless steel and chlorine do not mix well. Do not use bleach when cleaning stainless steel. Do not allow bleach or bleach water to sit for long periods. Bleach can eventually cause staining and pitting. Bleach stains are removed with stainless steel cleaning polish.

2) **Keep the surface clean of grime, tissue and particulates.** This can be accomplished by using the "Water Hand Spray Rinse" and use of cleaning products.

3) **Rinse the surface after using disinfectant.** In Pathology and other medical areas the act of disinfecting is desired. There are a number of ways to do this including using Mopec's Bench Spray & Wipe Disinfectant. Labs use any number of different products including 10% bleach or other disinfectant sprays and wipes. For the most part, each and every one of these has high salt contents and lower PH levels to aid with disinfection. Most disinfectants must be followed up with a water rinse to remove the salts that remain after these products dry. We advise to always follow up a disinfection cleaning with a thorough rinse of water. We advise not to use diluted bleach, if you must; we stress the importance of a thorough rinse of water after use. If not rinsed properly, these salts can become visible after the disinfectant dries. They can appear with a whitish characteristic or contain light lines of white with a grainy feel when you wipe your hand across the work surface. If these residues are not removed with a thorough water rinse and wipe down they will accumulate and eventually degrade the appearance and integrity of your stainless surface. Rust is a long term possibility if salts are allowed to remain on the work surfaces over time. Gritty, dirty water or residue from cleaning solutions left on a stainless steel surface can stain or damage the finish.

4) **All stainless steel products should be protected by a polish.** As a prime example before any product leaves Mopec it is coated with WD-40 as a protecting coating for the stainless. Mopec offers a Stainless Steel Cleaner and Polish in both wipe and spray. These Mopec products will not only deep clean your stainless but will also protect their finish from chemical, low PH and salt and keep the finish looking like new.

Decal
Mopec advises that if the technicians are not taking the proper precautions when using the Decal solution the possibility of two things will occur, a brown or rust ring where the Decal resides along with a milky white substance on the surface. (As an example, reference the below photos to see the rust rings.) Decal is very harsh, even the fumes can and will cause staining on stainless steel. One thing that you might want to consider doing is to place the Decal container you currently use inside a plastic base that will help catch drips that might occur. Clean and rinse your station after every use of Decal solution.

Rust
Rust can and will occur on stainless if it is not maintained properly. The most common cause of rust is from using metal or stainless racks that are not made of 304 stainless. This is referred to as "transfer rust". Leaving of salts from cleaners or disinfectants can and will lead to possible rust areas in the long term. Always rinse all disinfectants before they dry. Decal solutions and even fumes are very aggressive and can cause rust if not cleaned up and used properly around stainless. Formalin use has not been shown to cause rust in any way.

Conclusions & Suggestions
We are confident and can assure you that if you institute the suggestions detailed above that your Mopec Grossing station will look as it did the day it arrived.

Do not assume it's the cleaner. If you do have some spotting or staining, and you've followed all of the suggestions, it may not be the cleaner. Water, especially hard water, can leave spotting and staining on stainless steel surfaces. Hard water can leave mineral deposits, resulting in whitish-colored spots and streaks. Remove hard water stains with vinegar or with stainless steel cleaning polish. Prevent hard water stains by towel-drying after every wash. Do not allow soaps and cleaners to dry on surfaces. The chemicals in many soaps and cleaners can cause staining. Never use corrosive cleaners such as mineral spirits. Use stainless steel cleaning polish and a non-abrasive scrub pad to remove dried cleaner stains. Baking soda mixed with liquid dish soap can make a good paste to gently rub on stains. Be sure to rinse the stainless steel surface thoroughly, and towel dry. If stains remain Mopec recommends trying a stainless steel cleaner and polisher. Barkeeper's Friend is a good powder formula that can clean without scratching. Be sure to follow the directions, rinse thoroughly, and towel dry. These methods should help remove any discoloration.

Fingerprints and Stains – The most common surface contaminates that occur from normal use are fingerprints and mild stains. These usually affect only appearance so fortunately they do not have an effect on corrosion resistance. They can easily be removed by a variety of simple cleaning methods. The most troublesome marks to remove from the surface of smooth polished or bright finished stainless steel are fingerprints; fortunately they can be removed with a common glass cleaner or by gently rubbing with a paste of soda ash (sodium carbonate) and water which would be applied with a soft cloth. Again, it is best to follow with a warm water rinse.

Clean Water and Wipe – The method that will do an adequate job and is the simplest, safest and the least costly is the best method. There is no surface coating to wear off of stainless steels so the surface will thrive with frequent cleaning. The first choice to clean mild stains and loose dirt and soil should always be a soft cloth and clean, warm water. Rinsing with clean water and wiping the surface dry will finish the process and eliminate the possibility of water stains.

Solvent Cleaning – To remove oils, greases and fresh fingerprints that have not had time to oxidize or decompose, use a solvent that does not contain chlorine. There are many organic cleaners on the market today that optimize safety attributes and clean ability. Spray or vapor methods or by wiping with clothes containing solvents can also clean surfaces. The wiping technique will sometimes leave the surface streaked.

Scratch Repair
A surface scratch can be repaired using the following technique. Completely removing the scratch will depend on how severe it is. Use 120 grit emery cloth or paper and firm pressure to sand the scratch. Sanding must always go in the direction of the grain. Sand in a perfectly straight line, avoiding the natural tendency to sand in an arc. Sand the surface until the scratch is gone. Polish using a very fine grade of 3M scotch-brite pads. Use the same motions as with sanding. Polish the surface until the original finish is restored.
For stubborn spots, stains, light discoloration, water marking or light rust staining use a mild, non-scratching cream or polish. Apply with soft cloth or soft sponge and rinse off residues with clean water and dry. Avoid cleaning pastes with abrasive additions. Suitable cream cleansers are available with soft calcium carbonate additions, or with the addition of citric acid. Do not use chloride or acidic solutions Nylon abrasive pads should be adequate for dealing with most deposits (DO NOT USE STEEL WOOL OR BRILLO PADS). If a more severe treatment is needed to mask coarse scratches or physical damage on a surface, use the finest abrasive medium consistent with covering the damage marks. With directional brushed and polished finishes, align and blend the new "scratch pattern" with the original finish, checking that the resulting finish is aesthetically acceptable. Silicon carbide media may be used, especially for the final stages of finishing. Avoid using hard objects such as knife blades and certain abrasive/souring agents as it is possible to introduce surface scuffs and scratches. Scratching is particularly noticeable on sink drainer areas. These are usually superficial and can be removed with proprietary stainless steel cleaners or, alternatively, with a car paint restorer, such as 'T-cut'. Rust marks or staining on stainless steels is unlikely to be the result of corrosion to the stainless steel itself (similar marks may also be found on porcelain and plastic sinks). These marks are likely to result from small particles of carbon steel from wire wool.

USER PARTS

Replacement parts are available from Mopec The can be ordered by contacting Mopec at 800-362-8491.

BF005 Potassium Permanganate Filter

BF003 Particle Filter

BF101 Formalin Neutralization Pad (3 Pack)

PREVENTITIVE MAINTENANCE CHECKS

Procedure:

1. Visually check the exterior of equipment for any signs of damage.
2. Visually check the condition of the power cord and plug(s) for cracks, cuts, bare or broken wires and signs of excessive heat (discoloration).
3. Visually inspect electronics for signs of damage and/or overheating.
4. Verify correct operation of unit including all controls, buttons, displays and indicators when applicable.
5. Clean exterior of unit.
6. Complete paper work of inspection and file in appropriate file for future reference. Complete and affix an inspection sticker, when applicable.
7. Return the unit to service.

LIMITED WARRANTY

Products manufactured by Mopec will be free from defects in material and workmanship and conform to Mopec's description or specifications. If a warranty claim is made within one (1) year from the earlier if the date of acceptance/first beneficial use, the defective or nonconforming Product or Part thereof will be repaired or (at Mopec's option) replaced free of charge, FCA Mopec's dock. All warranty claims must be in writing and received by Mopec within the warranty period. The warranty is not transferable (other than to customers of Mopec's authorized Distributors), and will not apply unless the Equipment has been properly installed, maintained and operated in accordance with all instructions; and does not apply to defects, nonconformities or other failure due to Equipment misuse, abuse, modifications, or other causes outside Mopec's control. If a warranty claim is made in writing within the warranty period, the defective or nonconforming Equipment (or Part thereof) will be repaired or (at Mopec's option) replaced free of charge, FCA Mopec's dock.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THE WARRANTY AS SET FORTH HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

To the extent that Mopec is acting as a supplier of Products manufactured by a third party, the Products will be warranted only to the extent that they are warranted by their manufacturers and Buyer (or its customer) agrees to look solely to the Product manufacturer for all warranty claims.

MOPEC, 21750 COOLIDGE HIGHWAY, OAK PARK, MI 48237

BEFORE SERVICING THE UNIT LOOK FOR AND HEED THE FOLLOWING LABEL

TROUBLE SHOOTING

Problem	**Possible Solution**
My Unit does not turn on	Assure your facility circuit breaker has not been tripped.
I detect the odor of Formalin	Have the filters been checked/changed recently Check Filter for saturation Replace Filter Check the Spill Pad for formalin/Replace pad