

MACROMIST II FOGGER, SAFETY INFORMATION

The fogger must be installed with a 230v CE plug, which may be done at a distributor location. It must be plugged into a properly grounded three prong outlet. The unit is designed to operate on ordinary household 230 volt, 60 Hertz alternating current.

- Never put the fogger into standing water because of the shock hazard.
 - Do not use any type of corrosive liquid. Use only liquids designed for fogging and or misting applications.
 - Follow safety, mixing, and application instructions of any chemical being used in the MacroMist II.
 - Flush fogger before using antimicrobials. Some types of detergents will neutralise antimicrobials.
 - Connect the power supply to an appropriate power source. Be sure that all electric cords and extensions are of adequate size and properly insulated.
 - Never allow anyone in the area which the fogger is operating. Homeowners should be asked to leave the building until the application procedure is complete.
 - Children or animals should not be in the area being treated.
 - Never dispense chemicals near an open flame or flammable materials.
 - Never allow the rear of the unit to become plugged with paper or other loose materials.
 - Never place the fogger on dust, sand or loose paper. Materials may become drawn up into the air intake while operating causing extreme damage to the motor.
 - Never attempt any servicing or cleaning on the MacroMist fogger while it is plugged into electrical current. This may result in shock. Never probe the outlet nozzle with wire or other instruments while the unit is operating.
 - After fogging allow at least ten minutes contact time and then provide complete ventilation.
 - Never fog into the intake of dryers as this is ineffective and could result in an electrical hazard.
 - Quaternary chemicals are less toxic than many of the other antimicrobials, therefore less precautions need to be taken.

Operator Safety

- The operator must wear an organic vapour respirator whenever fogging any deodoriser, which can enter the air stream, and be inhaled.
- An organic vapour respirator with a pre-filter may offer superior protection.
- Always wear gloves and use a measuring cup when you are mixing a product to be fogged.
- Always wear eye protection while fogging.
- After fogging any chemical containing hazardous ingredients, provide complete ventilation.
- Various products have differing safety precautions.
- Always refer to the Material Safety Data Sheet (MSDS) for specific precautions.

ABOUT MOULD & MILDEW

One of the reasons for drying water soaked carpets, structural materials and contents is to prevent permanent damage caused by fungi and bacteria. Saprobic fungi (which includes mildew and moulds) and bacteria are responsible for decomposition of all organic material. The mildew encountered is caused by one of 50,000 species of saprophytic fungus that lack chlorophyll and feed off dead organic materials. Since fungi possess no chlorophyll, they cannot photosynthesize, and they obtain their carbohydrates by secreting enzymes into the surface on which they are growing. The enzymes digest the food, which is then absorbed directly into the hyphal walls of the fungi. Generally, acid growth substances are needed as a food source.

Fungus spores are everywhere and are waiting for the right conditions for growth in every structure. Most mildew is mesophilic and grows best between 20°- 30°C (68°F and 86°F). Most mildews will not grow where it is colder than 13°C (55°F) or warmer than 45°C (115°F). Mildew also prefers an environment that is damp and dark. It is interesting to note that it does not grow well where there is good air ventilation. This is a good reason for using TurboDryers. Another characteristic of mildew is that it won't grow when totally submerged in water.

Mildew usually remain dormant when materials are dry and the humidity is below 60% Rh. Mildew and fungus spores quickly become active when organic materials become damp and/or the humidity increases above 60% Rh. Mould and mildew thrive on organic materials. In an indoor flood situation, mildew grows on cellulosic carpet fibers such as jute, wool, rayon, and cotton. It can even thrive on the organic materials in some carpet adhesives. It can also attack the paper materials in drywall and even wood materials including framing, floors, walls, and gripper rods. Mildew cannot "feed" on synthetic materials such as

nylon, polyester, acrylic or olefins. Yet you may see mildew on these materials if there is sufficient organic material (soil) to support growth.

Mildew can cause unseen damage to materials. When mildew is active it can damage carpet adhesive and jute backings, while being hidden from view by the synthetic face yarns. With time it can even weaken framing materials and destroy drywall while undetectable behind the wall. Therefore it is prudent to treat wet materials as if mildew were already present. When disengaging water damaged carpet, look for previous mildew damage. This is most common. Mildew can cause odour problems. Mildew gives off gaseous odours when it is active and these odours are carried by humidity to all parts of the home or business. Yet mildew can remain dormant for long periods without releasing its gaseous odour. With the right conditions it can once again become active. Deflooders must understand mildew or eventually they will get into trouble. It is vitally important for you to evaluate the potential for mildew growth and damage during the emergency service call.

Odour Elimination

Odours caused by most fungi can be eliminated using a strong enough concentration of an antimicrobial deodoriser like MILGO-SR. Affected materials should be treated on the initial service call while the materials are still wet. Remember, the best antimicrobial deodoriser in the world will only work when it comes in direct contact with bacteria and fungi. You must use enough liquid to penetrate and treat the face yarns and backing materials. Materials can also be treated again after the initial extraction and even once again before and/or after the cleaning process. The most important treatment is the initial one during the first visit. Since the materials are already damp, you can completely saturate them without retarding the drying process. Complete saturation allows the treatment to come into physical contact with the source of the odours. Supplying air movement and good ventilation to all wet materials will also retard fungus growth. Also keep in mind that cold temperatures will help retard the growth of most fungi. In order to prevent mildew growth, you must treat all affected organic materials. This treatment may include the walls, skirting boards, carpet, gripper rod and flooring, depending on the severity of the situation. The most sensitive materials are jute carpet backings, gripper rod and drywall. Another concern is pre-existing urine odours and the odours caused by activated bacteria. Cat, dog and human waste odours are usually reactivated when materials become damp from water damage. It is best to destroy these odours before the customer associates them with the insured loss.

Deodorising Procedures The deodorising procedure is normally done after the initial extraction but before rolling. When the backing is treated from the surface, one must be sure to

APPLICATION PROCEDURES

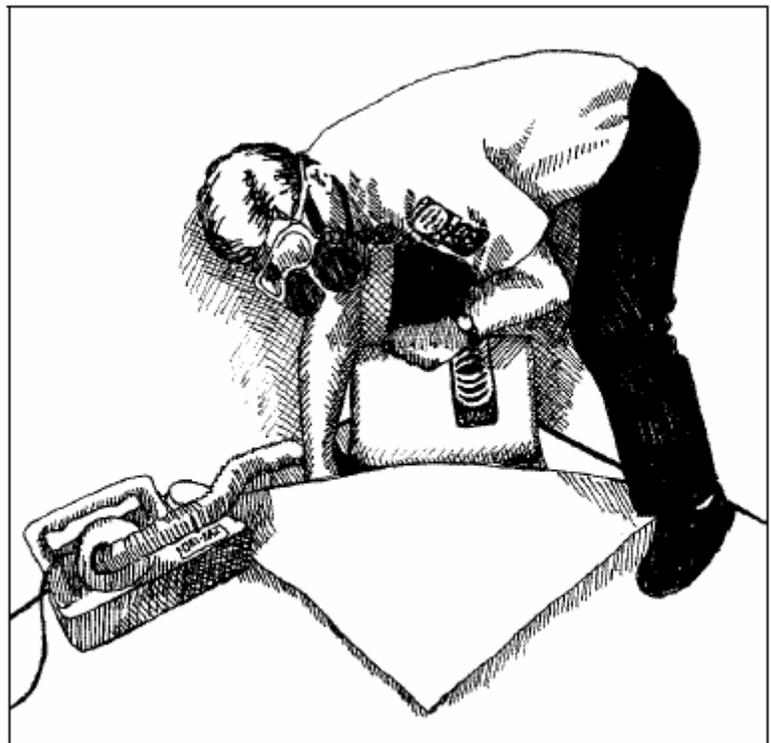
Subsurface Application

Using a fogger in conjunction with a carpet dryer, the secondary backing and pad surface may be treated during the drying process. This is done only on stretched in carpets with separate pad. The MacroMist II atomizes a deodoriser and sprays it out in a heavy fog below the carpet. The MacroMist II atomizes the deodoriser and blasts it out in a heavy, wet fog below the carpet.

To do a sub-surface application on a carpet: disengage one or more corners of the carpet in each room. Properly install the TurboDryer snout below the corner of the carpet and staple down the carpet to the gripper rod around the dryer.

Turn the carpet dryers on and ensure that all areas of the carpet are "floating" on a cushion of air. To reduce "blow back" the opposite corner can be disengaged and folded back to provide venting.

Fill the MacroMist II using an appropriate solution of MILGO-SR or other antimicrobial and water. Then set the control for a wet fog.



Using the MacroMist II to fog beneath carpet and pad

Place the nose of the atomiser/fogger alongside the dryer snout and below the carpet. Turn on the fogger and disperse approximately 2 litres of solution for each 10 meters (107 square feet) of carpet. Move the hose around to fog along both sides of the operating dryer. Repeat this procedure at each dryer location.

It will take about five minutes per corner of the after fogging, allow at least ten minutes contact time and then provide complete ventilation.

It is important to make sure that all people and pets are vacated from the area that is being fogged. They should remain out of the structure for at least one hour after the fogging has been completed and the structure has been adequately ventilated. Foodstuffs should be put away and horizontal food contact surfaces should be covered or rinsed after fogging.

Surface Deodorisation

The MacroMist II works well for surface deodorisation of thick shags and plushes. This process is used when the carpet has a natural primary backing that has been wet for several days. Use a similar solution concentration and carry the MacroMist with the hose pointed down, about 30cm (12") from the carpet surface. The blast opens the pile yarns, allowing the deodorant to reach the primary backing. While using the atomiser for surface deodorisation it is important to wear a mask to avoid inhaling the solution.

Air Space Fogging

After severe contamination from river flooding, sewage backup, or where there are obvious mould odours, some restorers prefer fogging into the affected airspace. This air treatment may include a crawl space below the structure, attic spaces or in rooms most affected by mould and mildew.

Air space fogging implies a small droplet which will easily float in the air currents so all safety precautions must be carefully followed. When air space fogging above your head, particles will fall towards the technician. When air space fogging overhead, the technician must wear goggles, a hat and complete respiratory protection.

Fogging Wall Cavities Occasionally an odour may be coming from inside a wall cavity. This is always suspect when water has penetrated or wicked into the wall and after several days have passed since the initial loss occurred. A high moisture content inside the wall cavity may be determined with a moisture meter. It is possible to drill a small hole 13mm to 25mm (1/2" to 1") near the top of the wall between the studs and fog into each cavity. Obviously, insulation will inhibit the fogging so this method may not be effective in insulated walls.

Keep in mind that treating interior wall cavities is only suggested when the inspection reveals a serious odour

Problem Using the MacroMist II to fog beneath carpet and pad The technician should drill 13mm (1/2") holes in the floor of the cabinets and adjacent walls to provide for ventilation. The MacroMist II may be used to fog into

the cavity. Air movers and possibly dehumidifiers should also be provided to ventilate and dry the area.

TREATING URINE DAMAGED CARPET

Urine damage can range from quite simple to extremely complex. Urine damage can be caused from one "accident" which occurred yesterday to an entire house full of cats and dogs using the walls, furniture and carpets on a routine basis over years. The first issue in solving odour problems is accurate evaluation regarding the extent of damage. While the customer's perspective of the situation can be helpful, it may not be entirely accurate. We suggest that the professional use both a black light and a HydroSensor or other moisture detection instrument for locating the extent of damage. When an animal wets on the carpet, the surface damage may involve only a few square centimetres. Yet as this deposit travels through the face yarns and backing, it spreads in diameter several times. If a separate underlay (cushion) is installed, the deposit

encounters the underlay membrane and spreads even further. While most of the urine deposit ends up in the

primary and secondary backings, some may find its way into the underlay and even the flooring. It is apparent that there are at least four levels of urine contamination and even a wider variety of professional responses. In order to evaluate these, they have been named and quantified for simplicity. For discussion, we will use the following:

Type of Damage	Abreviation	Percentage
Limited Urine Deposit	LUD	1% - 4%
Major Urine Deposit	MUD	5%- 19%
Substantial Area Urine Deposit	SAUD	20%- 39%
Saturated Carpet and Underlay Urine Deposit	SCUUD	40%-100%

LUD: A limited urine deposit is where urine damage is isolated to only one area of the carpet and does not exceed 4% of the entire carpet area. It may still be best to evaluate the quantity of deposit since a heavy deposit may still reach the underlay. In this case the treatment may be limited to mixing up MILGO-SR 1:4 in a pump sprayer and saturating the face yarns and allowing about ten minutes contact time. This should then be extracted carefully, the carpet steam cleaned and then followed with a light post treatment. When the urine has penetrated into the underlay, an injection of MILGO-SR may also be helpful.

MUD: A major urine deposit affecting 5%-19% of the carpet area can use the same initial treatment as the LUD. Yet the deposits may be heavy enough to justify a sub-surface treatment. For maximum effectiveness the carpet can be disengaged and folded back to expose the backing. Then the affected backing can be steam cleaned and MILGO-SR diluted 1:4 can be sprayed onto the backing. Some contractors prefer to use the MacroMist II and fog the entire underside from a disengaged corner rather than expose the entire backing.

SAUD: A substantial area urine deposit is where your black light and HydroSensor suggests a more severe problem where affected areas are from 20%-39% of the carpet area. This suggests a sub-surface treatment must be sold to insure success. For maximum effectiveness the carpet can be disengaged and folded back to expose the backing. Then the affected backing can be steam cleaned with MILGOSR. Then MILGO-SR diluted 1:4 should be sprayed onto the backing. Some contractors prefer to use the MacroMist II and fog the entire underside from a disengaged corner rather than expose the entire backing.

SCUUD: A saturated carpet and underlay urine deposits (SCUUD) requires even greater effort in order to be successful. This heavy contamination will require all the steps above. It may also require removal of all or portions of the contaminated underlay. The floor should be inspected carefully and may require treatment and or sealing with an appropriate sealer. Due to the concentration of urine the carpet must be disengaged and folded back to expose the backing. Then the affected backing should be sprayed with MILGO-SR and allowed to work for 15 minutes. Afterwards the cleaned and with MILGO-SR. This is then followed with another application of MILGO-SR diluted 1:4. The carpet should then be speed dried with TurboDryers.

UNSANITARY FLOODING

River Flooding

Treating sewer backup and river flooding odours requires the strongest concentration of MILGO-SR and the most complete saturation for effectiveness. Dilute MILGO-SR 1:4 (one litre of Milgo-SR per 4 litres of water) and spray onto all affected areas before any other work begins. Heavy organic materials should then be removed and contaminated materials rinsed or cleaned. (MILGO-SR may be used in the cleaning solution.)

After contaminants are removed and materials rinsed, all affected materials should be treated a second time.

Due to the hazardous environment all technicians should wear an approved respirator, rubber gloves and boots on any sewer backup or river flood situation. For heavy sewage situations protective clothing and goggles are also advisable. Extreme care should be taken not to allow contaminants in open wounds or to allow contaminated objects to penetrate the skin. In case of punctures, consult with a physician immediately. Whenever using MILGO-SR at a 1:4 concentration, wear an approved respirator and evacuate all others.

Ventilate well before allowing occupation.

PRECAUTIONS

Chemicals designed to disinfect or destroy odours should be used with caution. They were designed for trained professionals involved in the cleaning and restoration industry. Disinfectants and deodorisers are

to be applied by professionals only, not by consumers.

Disinfectants, deodorisers and similar chemicals should always be under the complete control of a trained technician. If disinfectants or deodorisers get into the eyes, corneal injury may occur. Use caution and avoid splashes when removing the cap and when diluting the concentrate with water. Keep the concentrate away from children. Deodorant vapours may be irritating to some people **and caution should be exercised whenever these substances are misted or fogged**. If swallowed, a physician should be consulted immediately. If spilled into eyes, flush with water for 15 minutes. If irritation persists, contact a physician. Use only with proper ventilation. Use side shield safety glasses when mixing concentrate. Wear an organic vapour respirator with pre-filter when fogging. Read the product label instructions and the MSDS carefully before using any.

OPERATING INSTRUCTIONS

1. Operate the MacroMist II fogger on a level surface only. This will prevent backwash.
2. Always wear appropriate eye and lung protection. See the Safety Instructions.
3. Plug the MacroMist fogger into a grounded 115v outlet and switch "ON" to start.
4. Adjust Flow Control Valve on the nozzle of the fogger to set discharge volume. The flow Control Valve affords precise discharge volume control through a range of 10 ml to 532 ml (33 oz. to 18 oz) per minute. The valve adjustment knob is on the nozzle of the fogger.
5. The valve is in the 'closed' position when the knob is turned clockwise to the point where the horizontal line on the knob lines up with the nodule on the side of the nozzle. To adjust the unit for various particle sizes and output ranges turn the knob counter clockwise to the left. The first full rotation is within the ULV (Ultra Low Volume) range.

Flow Control Valve Settings		
1/4 TURN	VERY LT. ULV	10 ml/min. (.33 oz)
1/2 TURN	LIGHT ULV	22 ml/min. (.75 oz)
3/4 TURN	HEAVY ULV	36 ml/min. (1.2 oz)
1 TURN	HEAVY ULV	74 ml/min. (2.5 oz)
2 TURNS	LIGHT FOG	207 ml/min. (7.0 oz)
3 TURNS	MEDIUM FOG	444 ml/min. (15 oz)
4 TURNS	HEAVY FOG	532 ml/min. (18 oz)

All rotations above the first rotation are above the ULV range and are then fogging in the 30 to 60 micron range. At four full revolutions you are at full open for this machine and you will be dispensing 532 ml (18 oz) of liquid at the 60-80 micron range.

IMPORTANT!

Always close the valve before turning power off to prevent continual flow of liquid due to residual pressure in the tank.