

70385-5

6/9/2011

10 of 13

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Georgia Anastasiou  
ProRestore Products  
4660 Elizabeth Street  
Coraopolis, PA 15108

JUN - 9 2011

SUBJECT: Microban Hospital Spray Plus  
EPA Registration Number: 70385-5  
Application Dated: May 9, 2011  
Receipt Date: May 10, 2011

Dear Ms. Anastasiou:

This letter acknowledges receipt of the notification identified above submitted under the provisions of section 3 (c) 9 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended and PR Notice 98-10 and 40 CFR 152.46.

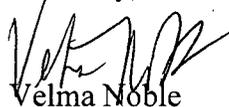
- Propose to update the Storage and Disposal Section in accordance with PR Notice 2007-4.

Based on a review of the submitted information, this notification is acceptable. Your proposed changes will be made part of the record for this file.

**General Comments**

Should you have any questions concerning this letter, please contact Emilia Oiguenblik at (703) 347-0109 or Velma Noble at (703) 308-6233.

Sincerely,



Velma Noble  
Product Manager (31)  
Regulatory Management Branch I  
Antimicrobials Division (7510P)

CONCURRENCES							
SYMBOL							
SURNAME							
DATE							

20f13

<b>EPA</b> United States <b>Environmental Protection Agency</b> Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number
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**Application for Pesticide - Section I**

1. Company/Product Number <b>70385-5</b>	2. EPA Product Manager <b>Velma Noble</b>	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) <b>Microban Hospital Spray Plus</b>	PM# <b>Team 31</b>	
5. Name and Address of Applicant (Include ZIP Code) <b>ProRestore Products</b> <b>4660 Elizabeth Street</b> <b>Coraopolis, PA 15108</b> <u><b>PLEASE DIRECT ALL CORRESPONDENCE TO</b></u> <u><b>"CONTACT POINT" LISTED BELOW</b></u> <input type="checkbox"/> Check if this is a new address	6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(I), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

**Section - II**

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below

**Explanation:** Use additional page(s) if necessary. (For Section I and Section II.)

**NOTIFICATION TO UPDATE STORAGE & DISPOSAL LANGUAGE PER PR NOTICE 2007-4**

This notification is consistent with the guidance in PR Notice 2007-4 and the requirements of EPA's regulations at 40 CFR §§ 156.10, 156.140, 156.144, 156.146, and 156.156. No other changes have been made to the labeling or the Confidential Statement of Formula for this product. I understand that it is a violation of 18 U.S.C Sec. 1001 to willfully make any false statements to EPA. I further understand that if the amended label is not consistent with the requirements of 40 CFR §§156.10, 156.140, 156.144, 156.146 and 156.156, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

**Section - III**

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			<input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)
*Certification must be submitted		If "Yes" Unit Packaging wgt.    No. per container	If "Yes" Package wgt.    No. per container		
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label    - or - <input checked="" type="checkbox"/> Container		4. Size(s) Retail Container 1pt, 1 qt, 1 gal, 5 gal, 55 gal		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On labeling accompanying product	
6. Manner in Which Label is Affixed to Product				<input checked="" type="checkbox"/> Lithograph <input checked="" type="checkbox"/> Other <u>Silk screen</u> <input checked="" type="checkbox"/> Paper glued <input checked="" type="checkbox"/> Stenciled	

**Section - IV**

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application)		
Name: <b>Georgia Anastasiou, Lewis and Harrison, LLC</b> 122 C St., NW Suite 740 Washington, DC 20001	Title: <b>Agent for ProRestore Products</b>	Telephone No. (Include Area Code): <b>(202) 393-3903 ext. 19</b>
I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title: <b>Agent for ProRestore Products</b>	
4. Typed Name <b>Georgia Anastasiou</b>	5. Date <b>May 9, 2011</b>	

30

# LEWIS & HARRISON

Consultants in Government Affairs

122 C Street, N.W., Suite 740  
Washington, D.C. 20001

telephone 202.393.3903  
fax 202.393.3906

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May 9, 2011

HAND-DELIVERED

Document Processing Desk [NOTIF]  
Office of Pesticide Programs (7504P)  
U. S. Environmental Protection Agency  
Room S-4900, One Potomac Yard  
2777 South Crystal Drive  
Arlington, VA 22202-4501

**ATTENTION:** Velma Noble  
Product Manager, Team 31

**SUBJECT:** ProRestore Products  
Applications for Notification in Accordance with PR Notice 2007-4  
Microban X-580 Institutional Spray Plus (EPA Reg. No. 70385-3)  
Microban Hospital Spray Plus (EPA Reg. No. 70385-5)  
Microban QGC (EPA Reg. No. 70385-6)  
Microban Professional Strength Multi-Purpose Antibacterial Cleaner (EPA  
Reg. No. 70385-8)

Dear Ms. Noble:

On behalf ProRestore Products, I am submitting notifications to update the Storage and Disposal sections for the above referenced products in accordance with PR Notice 2007-4. All products will be sold in plastic containers.

Please note I did not include residue removal instructions for **Microban X-580 Institutional Spray Plus (EPA Reg. No. 70385-3)**, **Microban Hospital Spray Plus (EPA Reg. No. 70385-5)**, and **Microban Professional Strength Multi-Purpose Antibacterial Cleaner (EPA Reg. No. 70385-8)** because they are ready-to-use products.

In support of this submission, enclosed please find the following documents for each product:

1. Application for Pesticide Notification;
2. One (1) copy of the product labeling, with changes highlighted; and,
3. Two (2) clean copies of the product labeling.

Thank you for your assistance with this submission. If you have any questions, please call me at 202-393-3903 x.19 or e-mail me at [georgia@lewisharrison.com](mailto:georgia@lewisharrison.com).

Sincerely,



Georgia Anastasiou  
Agent for ProRestore Products

cc: Ann Kowalecki, ProRestore Products

40913

# MICROBAN HOSPITAL SPRAY PLUS

[FRAGRANCE FREE]

**[MOLD &] MILDEWCIDE [MILDEWSTAT] • BACTERICIDE [BACTERIOSTAT]  
• FUNGICIDE [FUNGISTAT]  
DEODORANT AND DISINFECTANT (Anti-Microbial)**

FOR INSTITUTIONAL, HOUSEHOLD, HEALTH CARE, FARM PREMISE USES AND ANIMAL QUARTERS

[Microban Hospital Spray Plus is a Broad Spectrum Disinfectant Against Most Bacteria, Fungus, Mold & Mildew, Odors Caused by Bacteria and Germs]  
[Kills and controls Mold, Mildew, Fungus, and Bacteria\*]  
[Commercial Multi-Purpose Antimicrobial Cleaner]  
[Commercial Multi-Use Antimicrobial Treatment]  
[Cleans, Disinfects, and Deodorizes]  
[Apply 6 Months to Every 2 Years for Air Duct Applications]  
[Use in Fogging, Air Ducts, and Other HVAC System Components]

**ACTIVE INGREDIENTS**

o-Phenylphenol .....0.22%  
Diisobutylphenoxyethoxy ethyl dimethyl  
benzyl ammonium chloride monohydrate .....0.70%

**INERT INGREDIENTS** ..... 99.08%

**TOTAL** .....100.00%

E.P.A. Reg. 70385-5

E.P.A. EST. 70385-PA-001

## KEEP OUT OF REACH OF CHILDREN WARNING

SEE OTHER PRECAUTIONS [ON SIDE PANEL] [BELOW]

*(Note to Review: The following language will appear on labels containing the air ducts use site)*

**DIRECTIONS FOR USE ON AIR DUCTS ARE CONTAINED IN THE ATTACHED BOOKLET AND MUST BE READ COMPLETELY PRIOR TO USING THIS PRODUCT. IF THE BOOKLET IS MISSING, RETURN THIS PRODUCT TO THE PLACE OF PURCHASE AND OBTAIN A REPLACEMENT PACKAGE.**

Net Contents     8 OZ. (0.237) Litres     1 PT. (0.473) Litres     1 QT. (0.946) Litres  
    1 GAL. (3.785) Litres     5 GAL. (18.925) Litres     55 GAL. (208.175) Litres

[Mfg by:] [Manufactured for:] [Distributed by:]  
PRORESTORE PRODUCTS, 4660 Elizabeth Street, Coraopolis PA 15109  
U.S. Patent No. 3,458,629

Batch Code:

<b>FIRST AID</b>	
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a Poison Control Center or doctor for further treatment advice.</li> </ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a Poison Control Center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
Have the product container or label with you when calling a Poison Control Center or doctor or going for treatment.	

**PRECAUTIONARY STATEMENTS:  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**WARNING:** May be harmful if swallowed (inhaled or absorbed through the skin). Do not breathe vapors (dust or spray mist). Do not get in eyes, on skin or on clothing. May cause eye (and skin) irritation.

*(Note to Review: The following language will appear on labels containing the air ducts use site)*  
[FOR AIR DUCT USAGE:]

**PERSONAL PROTECTION EQUIPMENT REQUIREMENTS FOR HANDLERS:**

All handlers must wear protective eyewear, long pants, long-sleeved shirts and chemical resistant gloves.

**SPECIAL INSTRUCTIONS FOR APPLICATORS:**

Applicators treating the inside of an air duct system with this product must wear chemical resistant coveralls, chemical resistant gloves, and chemical resistant goggles. In addition, the ductwork must be ventilated with an airflow of approximately 50 CFM per square foot of duct cross section. If this is not possible, OSHA confined space regulations must be followed and the requirements for a permit required space apply. These requirements include testing the atmosphere and use of adequate respirator protection. If the level of contamination cannot be determined, then maximum respiratory protection (SCBA or airline with an escape bottle) must be used. If needed, the full-face respirator should also be equipped with a spray mist pre-filter in addition to the charcoal filters.

*(Note to Review: The following language will appear on labels containing the air ducts use site)*

**ENGINEERING CONTROLS:**

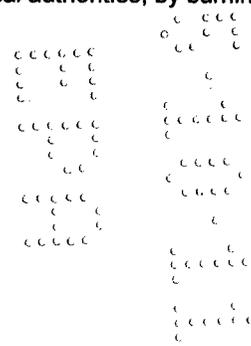
During ULV, mist or spray application, the duct system interior must be maintained under slight negative pressure (0.015 to 0.025 In. WG) with an outdoor exhaust or using a negative air machine equipped with HEPA filter. Avoid higher pressure differentials that would be likely to disrupt the coverage pattern.

**STORAGE AND DISPOSAL**

**Storage:** Keep from freezing. Store in ventilated areas. Do not contaminate water, food or feed by storage and disposal. Dispose leftovers in landfill approved for pesticides.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal:** Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent). Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.



### **GENERAL METHOD OF APPLICATION**

Surfaces and objects must be cleaned of gross filth with suitable detergent before treatment. Spray surfaces and articles until thoroughly wet, use enough so that treated surfaces and objects remain wet for at least 10 minutes. May be applied with a sponge to impervious covers and surfaces, allowing to dry for 10 minutes. For fogging and other large volume applications use appropriate spraying equipment, protective clothing, gloves and respirator. Heavily treated spaces should be adequately ventilated and not re-entered for at least one hour after treatment.

**AS A MILDEWCIDE, FUNGICIDE AND BROAD SPECTRUM DISINFECTANT:** (\*Kills most gram negative and gram positive bacteria and influenza virus). In hospitals, operating rooms, emergency rooms, lobbies, hallways, patient rooms, wards, washrooms, scrub stations, mop rooms, morgues, pathology labs, nurse's stations, laboratories, veterinary clinics and other health care facilities; in schools, hotels, motels, restaurants, vehicles, offices, homes and industrial buildings. For use on pre-cleaned hard non-porous surfaces such as tiled porcelain, waste receptacles, compactors, on, in and around rest room fixtures, toilet seats, locker rooms, telephones, door knobs, hospital apparatus and equipment, furniture and empty containerized storage units. For athletes foot fungus on floors, shower stalls, rest rooms. Follow method of application specified above. Do not use on medical devices.

#### **AS A BACTERIOSTAT, FUNGISTAT AND DEODORIZING AGENT**

Apply Microban Hospital Spray Plus as directed to floors, walls, ceilings that have been damaged by smoke, fire, floods and sewage backups. For cleanup operations in areas such as attics, wall voids, basements, areas above suspended ceilings and similar inaccessible spaces in buildings. [Spray avian, rodent and other animal and human wastes and carcasses as directed above, prior to removal and disposal.] Treat spaces and surfaces as specified in method of application. For use as a bacteriostat, fungistat and deodorizing agent on carpeting found in schools, hotels, motels, homes, vehicles, shelters and commercial, industrial and public buildings. After a flood or water damage, vacuum or extract as much water as possible before application. Apply full strength with sprayer until moist to carpet nap and rake or brush in. To treat the backing and padding, a fogger is recommended. Allow to remain until dry. For best results carpets should be cleaned before application.

*(Note for reviewer: For labels that list medical premises and metal and / or stainless steel surfaces, one of the following statements must be used:)*

This product is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that (1) is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body or (2) contacts intact mucous membranes, but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. This product may be used to preclean or decontaminate critical or semi-critical medical devices prior to sterilization or high level disinfection.

*(or)*

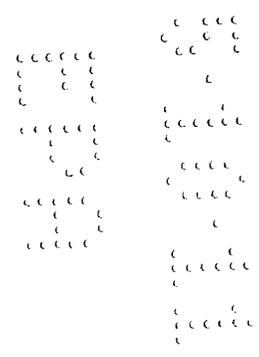
Do not use on medical devices.

#### **AS A CLEANER**

Apply Microban Hospital Spray Plus undiluted to surfaces with a cloth, mop, sponge, or sprayer. Wipe or allow to air dry.

#### **TO DISINFECT FARM PREMISES, POULTRY HOUSES, ANIMAL PENS AND VEHICLES**

Remove all animals and feed from premises, vehicles and enclosures. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other facilities and fixtures occupied or traversed by animals. Empty all troughs, racks and other feeding and watering appliances. Thoroughly clean all surfaces with soap or detergent and rinse with water. Saturate all surfaces with the recommended disinfecting solution for a period of ten minutes. Immerse all halters, ropes and other types of equipment used in handling and restraining animals, as well as forks, shovels and scrapers used for removing litter and manure. Ventilate buildings, cars, boats and other closed spaces. Do not house live stock or employ equipment until treatment has been absorbed, set or dried. Thoroughly scrub all treated feed racks, mangers, troughs, automatic feeders, fountains and waterers with soap or detergent and rinse with potable water before reuse. Apply Microban Hospital Spray Plus full strength as directed in the general method of application until thoroughly wet. Allow all surfaces to dry thoroughly, ventilate enclosed spaces adequately. Do not house animals in treated areas until thoroughly dry and free from odors.



### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Microban Hospital Spray Plus should be applied with hand or power operated sprayers, foggers, automated metering systems or gravity drip dispensers as a broad spectrum bactericide, mold and mildewcide, fungicide and deodorizing agent to previously cleaned surfaces. Spray areas until thoroughly moist, giving special attention to cracks and crevices. Allow ten to twenty minutes for drying. It is not necessary to wipe the sprayed surface. Microban Hospital Spray Plus should not stain those materials not stained by water.

Microban Hospital Spray Plus when used as directed is effective in decontaminating bedding, mattresses, textiles, drapes, upholstered furniture, rugs, carpets and in storage areas to control mold, mildew, fungus and odors wherever they are a problem.

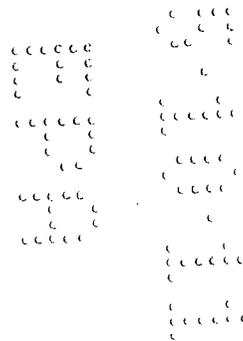
[For use by:]

- Pest Control Service
- Odor Control Service
- Restoration Services
- Air Duct Services
- Cleaning Services
- Carpet Cleaning Service
- Water Damage Service
- Disinfection Service
- Waste Removal Service

[Use in:]

- Second hand furniture stores
- Trash Chutes and Garbage Rooms
- Waste Compactors
- Exercise rooms
- Bowling alleys
- Storage areas and Basements
- Condensation collection & Drainage areas
- Laundry receiving stations
- Movie booths
- Antique shops
- Upholsterers [Upholstery] shops
- Locker Rooms
- Restrooms
- Shower Stalls
- Toilet Seats
- Doorknobs
- Furniture
- Floors
- Refuse trucks
- Air ducts
- Shoes & boots
- Veterinaries [Veterinary Clinics]
- Commercial, Industrial, Institutional, and Public Buildings
- Schools
- Offices
- Hotels and Motels
- Health Care Facilities [Hospitals]
- Restaurants
- Waste Receptacles
- Vehicles

[TEST FABRIC OR SURFACE IN AN INCONSPICUOUS AREA FOR COLOR FASTNESS OR ADVERSE REACTION]



**USE DIRECTIONS FOR AIR DUCTS**

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT  
IN A MANNER INCONSISTENT WITH ITS LABELING

**THE PERSON APPLYING THIS PRODUCT IS RESPONSIBLE FOR  
FOLLOWING THESE DIRECTIONS UNDER BOTH STATE AND FEDERAL  
LAWS.**

**1.0 General**

MICROBAN HOSPITAL SPRAY PLUS is designed to be used as one component of a comprehensive HVAC and duct maintenance program. The purpose of such a program is to assure that the HVAC system and ducts function in the manner they were designed to, remain free from mold and other microbial growth and other contamination, and continue in that condition. This product must only be used in only those cases where visible microbial growth has been detected in the system and then only after removing that growth and identifying and correcting the conditions that led to that growth. If you need help in understanding any part of these instructions or have additional questions after reading these instructions, DO NOT APPLY THIS PRODUCT until you have received the answers for all of your questions.

**2.0 Inspection**

Prior to inspecting, cleaning, treating, repairing or otherwise working on a duct section, the HVAC system should be turned off or the section under repair physically isolated from sections in active use.

Prior to any application of MICROBAN HOSPITAL SPRAY PLUS the system must be inspected for cleanliness and mechanical condition. When initiating any measures to repair, clean or treat ducts and associated HVAC system components, industry standards from the National Air Duct Cleaners Association (NADCA) and other organizations must be followed.

HVAC systems should be routinely inspected for cleanliness by visual means. The NADCA Standard, *Assessment, Cleaning and Restoration of HVAC Systems* (ACR 2002 or the latest revision), provides minimum recommended inspection frequency schedules for ducts and other system components. More information on NADCA standards can be obtained from the NADCA web site at [www.nadca.com](http://www.nadca.com).

**2.1 Cleanliness Inspection**

According to NADCA Standards, HVAC system cleaning must be performed when any of the following conditions are found in the cleanliness inspection. If any of these deficiencies are found during inspection, cleaning in accordance with industry standards must be performed prior to the application of MICROBAN HOSPITAL SPRAY PLUS:

**2.1.1 Contamination**

- HVAC systems should be operated in a clean condition. If significant accumulations of contaminants or debris are visually observed within the HVAC system, then cleaning is necessary. Likewise, if evidence of microbial growth is visually observed or confirmed by analytical methods, then cleaning is required.
- If the HVAC system discharges visible particulate into the occupied space, or a significant contribution of airborne particles from the HVAC system into the indoor ambient air is confirmed, then cleaning is necessary.
- Heat exchange coils, cooling coils, air flow control devices, filtration devices, and air-handling equipment determined to have restrictions, blockages, or contamination deposits that may cause system performance inefficiencies, air flow degradation, or that may significantly affect the design intent of the HVAC system, require cleaning.

- Drain pans must be free from slime and sludge or other contamination. Badly rusted or corroded drain pans must either be repaired or replaced.
- Fans and fan housings must be free from accumulations of microbial growth and particulate matter.

If you need help in understanding existing industry standards, consult a qualified professional or contact Microban Systems at 800.332.6037 for guidance and further direction or consult the information at [www.epa.gov](http://www.epa.gov) (search on "air ducts"). In addition, the following association and society Internet sites should be consulted for information on standards and guidelines they have developed:

- ACCA – [www.acca.org](http://www.acca.org)
- ASHRAE – [www.ashrae.org](http://www.ashrae.org)
- NADCA – [www.nadca.com](http://www.nadca.com)
- NAIMA – [www.naima.org](http://www.naima.org)
- SMACNA – [www.smacna.org](http://www.smacna.org)

## 2.2 Mechanical Inspection

MICROBAN HOSPITAL SPRAY PLUS must be used only on ducts and other HVAC system components in sound mechanical condition as defined in 2.2.1 and 2.2.2 (below). The HVAC system components must be designed and installed in conformance with industry standards and guidelines. Prior to using the product, inspect the ducts and assure that they are in sound mechanical condition. The following general guidelines, supplemented by industry standards from SMACNA, NAIMA ASHRAE, ACCA and other organizations, must be followed:

### 2.2.1 Air Leaks and Mechanical Defects

The ducts must be free from air leaks and other mechanical defects. Air leaks will promote condensation of water that causes microbial growth and will lead to failure of MICROBAN HOSPITAL SPRAY PLUS to protect the system adequately.

### 2.2.2 Design and Installation

ASHRAE, SMACNA, NAIMA and other industry organizations have established guidelines and standards for the design and installation of HVAC and duct systems. You should determine that the duct system you wish to treat conforms to industry practice. If you are not knowledgeable of industry guidelines and standards, consult a qualified professional or contact Microban Systems at 800.332.6037 for assistance.

In some situations, the inspection may reveal that the duct system or other component is badly damaged or in such poor operating condition that it cannot be corrected through cleaning and/or minor repair. In these situations, the system should be replaced or rebuilt in conformity to the applicable industry standards prior to using MICROBAN HOSPITAL SPRAY PLUS. Some (but not all) of the conditions that would indicate the need for major repairs or replacement of the system include:

- Improper size of ducts – Ducts must be sized to achieve correct airflow. When air-handling equipment is changed or new inlets or outlets added, the size of all components in the system should be recalculated and replacements made as needed.
- Physical damage – Crushed or deformed air ducts will restrict airflow and may leak (especially at joint areas). Damaged sections should be replaced or if there is extensive damage, the entire system should be replaced.
- Badly corroded metal components including duct sections, housings and cabinets, coil assemblies, drain pans, fans and their housings and heat exchange surfaces.
- Loose, damaged, friable or missing insulation – Insulation is important in preventing moisture

condensation and subsequent growth of mold and other organisms. If insulation (either interior or exterior) is damaged, missing or not properly fastened it must be repaired or replaced or the associated duct sections replaced. Air handler, mixing, and VAV box housings are also normally insulated and this insulation should be checked for damage in a like manner.

Removed components that are contaminated with mold and other microbial growth may spread contamination while being removed from the building. To prevent this, smaller items should be placed in plastic bags that should then be sealed before being removed. Larger items that cannot be safely packaged should be treated before being moved through occupied spaces. An appropriately labeled disinfectant can be used during treatment. Care must be used during treatment to assure that fumes from the agent being used are not released into occupied spaces. Products used should be used according to their label directions. Please contact Microban Systems at 800.332.6037 for guidance on the appropriate disinfectant to use for treatment.

**3.0 General Directions for MICROBAN HOSPITAL SPRAY PLUS Usage**

MICROBAN HOSPITAL SPRAY PLUS effectively controls by inhibiting growth of odor causing bacteria, fungi, and other odor, stain or damage causing organisms in air ducts in residential, commercial, institutional, and industrial buildings. MICROBAN HOSPITAL SPRAY PLUS also eliminates odors associated with bacteria, mold, mildew, smoke, animals, cooking, spoilage, musty and other odors and removes odor-causing organisms when used as part of such a comprehensive preventative maintenance program in air ducts and other HVAC system components.

MICROBAN HOSPITAL SPRAY PLUS is a bacteriostat, fungistat (mold and mildew), mildewstat and deodorizer for use in residential, commercial and industrial settings. It will not stain or bleach materials or fabrics and will not harm or damage HVAC system components.

MICROBAN HOSPITAL SPRAY PLUS is formulated for use in all kinds of ducts and HVAC components including:

- Unlined sheet metal.
- Air supply and return ducts and plenums fabricated with plywood, OSB or other wood like material.
- Flexible air ducts fabricated of metal or plastic.
- Air distribution components such as air handlers, mixing boxes, transfer boxes, transitions, turning vanes, dampers, fans and fan housings and associated components.
- Condensate drain pans.

Follow the directions below for the specific type of duct or component being treated. It is vital that the following directions be carefully read and understood prior to using the product. If you have any questions, need further information, require clarification, or do not understand any of the directions, call Microban Systems at 800.332.6037 prior to use.

**3.1 Application Instructions**

Spray areas until thoroughly moist, giving special attention to cracks and crevices. Allow ten to twenty minutes for drying. It is not necessary to wipe the sprayed surface. Microban Hospital Spray Plus should not stain those materials not stained by water.

**3.2 Application Equipment and Devices**

Refer to the precautionary statements for the Personal Protective Clothing and other special instructions that must be followed.

**3.2.1 Brush, Mop or Wipe Application**

Brush, Mop or Wipe Application may be specified by some facility maintenance or remediation plans. These techniques are generally more labor intensive than other methods and are normally used only when specifications require. These methods are suitable only for smooth uniform surfaces. Do not use on porous or non-uniform

surfaces. If in doubt about a given surface, contact Microban Systems at 800.332.6037 before proceeding. When using brush or mop application, tools and materials used should be reserved only for application of MICROBAN HOSPITAL SPRAY PLUS, kept clean and protected between uses and replaced when worn or visibly soiled. Natural fiber brushes are preferred although any quality brush is acceptable. Mops types should be those that leave minimal lint behind. Micro-fiber or other non linting cloths are preferable. Where other types of cloths are used, they must be soft enough that they absorb a sufficient quantity of liquid to provide uniform application.

During Brush, Mop or Wipe Application, the applicator must have access to the surfaces being treated. Usually this will require entering the ducts. In such cases, application must start from the point most distant from the point of entry into the duct. The applicator will then work from that point back to the entry point covering a 3 foot length of duct at a time. Apply to the top of the duct first, followed by the sides then the floor of the duct. Overlap applications to assure complete coverage. Cover completely while avoiding runs or pooling.

**3.2.2 Spray Applicators**

Spray application is preferred on large surfaces that are easily accessible (such as in long runs of large diameter ducts, coil assemblies and the interior of cabinets and housings with removable access panels). The spray equipment chosen should provide a consistent fine (1-300 micron) particle size and uniform spray pattern. Powered medium pressure sprayers are preferred. However, airless sprayers are suitable.

Where airless sprayers are used, the most satisfactory spray pattern will be achieved using a 0.011" spray tip. For other brands and options contact Microban Systems at 800.332.6037.

Pump up garden type sprayers can be used but care must be taken to maintain maximum pressure by pumping frequently and the spray nozzle must be adjusted for the finest spray pattern possible. During application achieve complete uniform coverage. Avoid excessive wetting and do not allow the spray to run or pool.

**3.2.3 ULV or Mist Generating Sprayers**

ULV or mist or other wet small particle application is preferable where surfaces are irregular or less accessible. Equipment capable of generating particles in the 15 to 60 micron range is most satisfactory. Avoid use of thermal type fog generators. Contact Microban Systems at 800.332.6037 for information on other devices.

Generally a fog will carry and provide adequate coverage up to 8 feet from the point of application so adequate penetrations must be cut in the ducts to assure complete coverage without over wetting. SMACNA, NADCA and NAIMA have established standards and guidelines for making and sealing openings in ducts. Operators should be trained on proper application techniques as well as correct duct penetration and sealing procedures using these standards and guidelines. Operators should also carefully read and follow directions for the brand of equipment used. Microban Systems personnel should be contacted at 800.332.6037 for information on training for using various types of equipment. Duct penetrations should be properly closed following application, in accordance with industry standards.

**3.2.4 Automated Atomizing or Spray System**

There are a number of automated spraying systems on the market including those that are carried by a "robot" through air ducts. These may provide an excellent option for application of MICROBAN HOSPITAL SPRAY PLUS in parts of air ducts that are difficult to access if they produce the correct spray pattern and application quantity. These devices must be visually monitored using video or other means while applying spray so proper application rate will be maintained. Please contact Microban Systems at 800.332.6037 regarding a specific device should you have questions.

**3.3 Application Techniques**

MICROBAN HOSPITAL SPRAY PLUS must be applied evenly throughout duct system and over other surfaces that are being treated. Even and uniform application is essential for satisfactory results. The procedures,

equipment and techniques described below have been tested and provide the desired results. Other procedures, equipment or techniques may also achieve satisfactory results but should not be used without discussing the specific situation and equipment with a Microban Systems Representative who can be reached toll free at 800.332.6037.

**3.3.1 Application from Exterior of the HVAC System**

MICROBAN HOSPITAL SPRAY PLUS may be sprayed into openings at intervals throughout the duct system or on components that are accessible through removable panels or access doors. Spray into openings every 8 feet at a minimum. Existing supply openings can be used where they provide a clear view of the surfaces being sprayed so that uniform application can be achieved. However, additional penetrations will have to be made as needed, so enough openings will be available to achieve total and uniform coverage.

Spray application is not an acceptable technique where openings are greater than 8 feet apart, additional openings cannot be made and properly sealed, and/or the duct geometry does not allow for uniform coverage. In such cases, application from within the HVAC system is necessary (see 3.3.2 below).

**3.3.2 Application from Within the HVAC System**

When MICROBAN HOSPITAL SPRAY PLUS cannot be sprayed into openings at intervals throughout the duct system, you must gain entry into the system and spray the product onto interior duct and other surfaces until they are thoroughly and uniformly covered using hand or powered spray equipment. This is the most frequently used technique and is the technique of choice for air handlers, other components with access panels or doors and large diameter (generally 20" x 20" minimum) ducts where direct access can be gained to surfaces being treated.

**3.4 Rate of Application**

The recommended rate of application for MICROBAN HOSPITAL SPRAY PLUS varies depending on the surface being treated. Users of this product must carefully follow the rate of application instructions provided below:

**3.4.1 Bare Metal and Flexible Ducts**

Apply until surface is evenly wet. Mist or wipe coverage 1,000 ft<sup>2</sup> per gallon. Spray coverage 500 ft<sup>2</sup> per gallon. If the above application rates result in surface runoff or liquid pooling on the bottom of the duct, lower the application rate until the surface is thoroughly and evenly wet without runoff or pooling. The exception to this is when treating coil assemblies. In this case, the spray should be applied generously until there is runoff into the drain pan so as to penetrate the coil assembly to the greatest possible depth.

**3.4.2 Semi Porous Surfaces such as Concrete or Plaster**

Apply until surface is evenly wet. Mist coverage 500 ft<sup>2</sup> per gallon. Wipe not recommended. Spray coverage 250-ft<sup>2</sup> per gallon. MICROBAN HOSPITAL SPRAY PLUS must penetrate into surface crevices and irregularities or it will not be effective. Inspect and assure that penetration is satisfactory. It may be helpful to apply half of the quantity needed for full coverage spraying from side to side then repeat the application moving the spray from top to bottom.

**3.5 Frequency of Application**

Normally, infrequent application (6 months to every two years) will provide effective control. Some critical applications such as duct systems serving critical health care spaces or clean rooms where it is essential to minimize the generation of particulate matter that may be released as a byproduct of microbial growth may require more frequent treatment. Do not apply more often than monthly and then only if there is evidence of re-growth. This product must only be used in those cases where visible microbial growth has been detected in the system and then only after removing that growth and identifying and correcting the conditions that led to that growth. Prior to reapplication in such cases, investigate to determine the cause of re-growth and correct that problem prior to re-application. Before embarking on a program of frequent application (more frequent than every

six months) contact Microban Systems at 800.332.6037 and discuss the specific application and situation. Also make sure the reoccurrence of microbial growth does not have another cause such as persistently high humidity, standing water or hidden leaks.

Prior to reapplication, the interior of the ducts and other surfaces must be inspected and found to be free of accumulated soil. If soil or growth is found, the cause should be determined and corrected and then the ducts cleaned in accordance with accepted industry practice.

If microbial growth persists following application re-inspect for duct leaks, carryover of water from cooling coils or humidifiers and other sources of moisture promoting growth. Eliminate such sources of moisture before retreating.

**3.6 Returning the System to Operation following Application**

Fans and blowers in the section of duct being treated must be turned off during application of MICROBAN HOSPITAL SPRAY PLUS. If the system cannot be shut down, the section of duct being treated must be isolated until treatment is complete. This will prevent the spray of fog from being blown away from the surface that is being treated.

Do not attempt to use the system fan or blower to carry MICROBAN HOSPITAL SPRAY PLUS to the surfaces in the air duct system. Such a practice will not result in uniform application of the product to the surfaces being treated and will lead to ineffective control. This should never be attempted.

The system can be returned to full operation as soon as treatment is completed or at any time following completion of treatment. MICROBAN HOSPITAL SPRAY PLUS will dry on surfaces within 15 minutes following application. Extended drying time does not have an impact on effectiveness of treatment. MICROBAN HOSPITAL SPRAY PLUS should not be rinsed off following application so it will continue to inhibit the growth of microorganisms on treated surfaces.

When the above directions are followed properly, there will not be significant concentrations of MICROBAN HOSPITAL SPRAY PLUS released to the spaces served by a system being treated. It is recommended that affected areas of the building be unoccupied during treatment.

