

67212-2

3/29/2010

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Ms. Georgia Amastasiou
Agent for,
c/o BBJ Environmental Solutions, Inc.
Lewis & Harrison
112 C Street N.W.
Suite 740
Washington, D.C. 20001

MAR 29 2010

Subject: BBJ Maintain C-1
EPA Registration Number 67212-2
Your Notification Dated March 5^h, 2010
EPA Received Date March 5th, 2010

The notification referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, FIFRA, as amended, to update and revise the container language as per PR Notice 2007-4, is acceptable.

The notification has been made part of the file.

If you have questions concerning this letter, please contact Karen M. Leavy-Munk at (703)-308-6237.

Sincerely,

Marshall Swindell
Product Manager 33
Regulatory Management Branch I
Antimicrobial Division(7510P)



EPA

United States
Environmental Protection Agency
 Washington, DC 20460

- Registration
 Amendment
 Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 67212-2	2. EPA Product Manager Marshall Swindell	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) BBJ Maintain C-1	PM# 33	
5. Name and Address of Applicant (Include ZIP Code) BBJ Environmental Solutions, Inc 6802 Citicorp Blvd., Suite 500 Tampa, FL 33619 <u>PLEASE SEND ALL CORRESPONDENCE TO</u> <u>"CONTACT POINT" LISTED BELOW</u> <input type="checkbox"/> Check if this is a new address		6. Expedited Review. 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 the storage and disposal language per PR Notice 2007-4.

Notification of label change 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Metal	<input checked="" type="checkbox"/> Plastic
*Certification must be submitted		If "Yes" Unit Packaging wgt.	No. per container	<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
		If "Yes" Package wgt.	No. per container	<input type="checkbox"/> Other (Specify)	
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input checked="" type="checkbox"/> On labeling accompanying product	
6. Manner in Which Label is Affixed to Product			<input type="checkbox"/> Lithograph	<input type="checkbox"/> Other _____	
			<input checked="" type="checkbox"/> Paper glued		
			<input 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: Georgia Anastasiou, Lewis & Harrison 122 C St. NW, Suite 740, Washington, DC 20001	Title Agent for BBJ Environmental Solutions, Inc	Telephone No. (Include Area Code) 202-393-3903 ext19
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Certification

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.

Date Application Received

(Stamped)

2. Signature <i>Georgia Anastasiou</i>	3. Title Agent for BBJ Environmental Solutions, Inc	Date Application Received (Stamped)
4. Typed Name Georgia Anastasiou	5. Date March 5, 2010	

LEWIS & HARRISON

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

telephone 202.393.3903
fax 202.393.3906

Consultants in Government Affairs

March 5, 2010

Hand-Delivered

Document Processing Desk (NOTIF)
Office of Pesticide Programs (7504P)
U.S. Environmental Protection Agency
One Potomac Yard, Room S4900
2777 S. Crystal Drive
Arlington, VA 22202-4501

**ATTENTION: Marshall Swindell
Product Manager, Team 33**

**SUBJECT: BBJ Environmental Solutions, Inc
Notification per PR Notice 2007-4 for the Following Products
BBJ Microbiocide (EPA Reg. No. 67212-1)
BBJ Maintain C-1 (EPA Reg. No. 67212-2)
BBJ Mold Control (EPA Reg. No. 67212-3)**

Dear Mr. Swindell:

On behalf of BBJ Environmental Solutions, Inc., I am submitting a notification for the above referenced products. The purpose of this notification is to update the storage and disposal section in accordance with PR Notice 2007-4.

Enclosed please find the following documents to support this notification:

1. Application for Pesticide which includes the required certification for each product;
2. One (1) copy of each label with changes highlighted; and,
3. Two (2) copies of each product label.

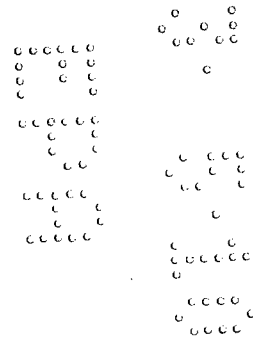
If you have any questions and/or comments about the enclosed submission, please feel free contact me by phone at 202-393-3903 (ext. 19) or by email at georgia@lewisharrison.com.

Sincerely,

Georgia Anastasiou

Georgia Anastasiou
Agent for,
BBJ Environmental Solutions, Inc

cc: Robert Baker (BBJ)



BBJ MAINTAIN C-1 FOR FLOORS AND WALLS
Antimicrobial

[Alternate Brand Names]

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS
Antimicrobial for HVAC and Air Ducts
BBJ Microbiocides for Air Ducts

- Eliminates odors associated with bacteria, mold, mildew, smoke, animals, cooking, spoilage, musty and other odors. [for use only with Floors and Walls labeling]
- Controls and inhibits odor causing bacteria, fungi, mold and mildew on floors, walls, contents and other interior building surfaces. [for use only with Floors and Walls labeling]
- Controls and inhibits odor causing bacteria, fungi and other odor causing organisms in HVAC systems and air ducts. [for use only with HVAC labeling]
- Can improve HVAC system energy efficiency up to 25%. [for use only with HVAC labeling]
- [Controls] [Prevents] [Inhibits] the growth of [fungi] [mildew] [mold and mildew] [and bacteria] on HVAC coils
- Effectively controls mold [and bacteria] on HVAC coils
- Effective against mold and mildew [and bacteria]
- Reduces Energy Consumption
- Improves HVAC Efficiency
- Bacteriostat
- Fungistat (mold and mildew)
- Mildewstat
- Deodorizer
- Residential
- Commercial
- Industrial
- Will not damage most surfaces [for use only with Floors and Walls labeling]
- For use in unlined ductwork only [for use only with HVAC labeling]
- Will not damage HVAC system components and most other surfaces. [for use only with HVAC labeling]

KEEP OUT OF REACH OF CHILDREN

WARNING

ACTIVE INGREDIENTS:

2-Bromo-2-nitropropane-1,3-diol 3.25%

INERT INGREDIENTS: 96.75%

TOTAL 100.0%

SEE ATTACHED BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS

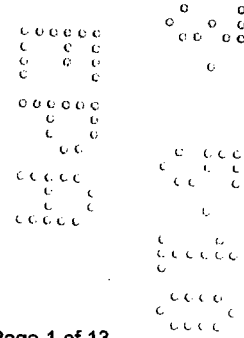
BBJ Environmental Solutions, Inc.
6802 Citicorp Dr., Suite 500
Tampa, Florida 33619
Questions? 1-800-889-2251

EPA REG NUMBER 67212-2
EPA EST NUMBER 67212-FL-001
NET CONTENTS 15 oz , 32 oz(_____ g)

Directions for Use

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. For complete product use instructions, refer to the attached booklet and 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.

DILUTE CONTENTS OF THIS PACKAGE BEFORE USE



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[For use only with the Floors and Walls labeling]

BBJ MAINTAIN C-1 FOR FLOORS AND WALLS - EPA REG. NO. 67212-2

Antimicrobial for Non-Porous Surfaces

BBJ Environmental Solutions, Inc., 6802 Citicorp Dr., Suite 500, Tampa, Florida 33619

**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

BBJ MAINTAIN C-1 FOR FLOORS AND WALLS is designed to be used to retard (or inhibit) odor, stain causing or other damage causing organisms including mold and mildew on floors, walls, contents and other interior building surfaces. It is also used as one component of a comprehensive mold remediation or water damage restoration program. The purpose of such a program is to minimize damage from growth of mold and other odor, stain or damaging organisms, limit re-growth and help building interiors continue in that condition. This product should only be used in those cases where visible microbial growth has been detected (or conditions are likely to immediately result in such growth) and then only as part of a program that removes that growth and identifies and corrects the conditions that led to that growth. If you need help 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 Causes of Microbial Growth

Microbial (including bacteria, mold, mildew, and other fungi) growth is present at all times both outdoors and in our building interiors. Normally the natural balance of the environment limits such growth to acceptable levels. Under certain conditions, growth can reach problem levels and if not controlled, will cause foul odors, soil and damage furnishings and valuables and may even destroy structural components of a residence or other building. Normally, fungal spores, live organisms and food sources are plentiful in building interiors without uncontrolled growth taking place. Elevated water from the following lead to growth:

2.1 Floods

If water floods the interior of a building it brings a massive load of organic matter, bacteria and fungal spores. If the water and excessive organic load is not cleaned quickly, massive growth will result. Floods can be either from rising water or massive plumbing failures.

2.2 Leaks

Leaks release lesser amounts of water and often over extended time periods. Thus, they can lead to high levels of growth in wall cavities and other spaces where they are not visible until considerable damage has been done. Leaks can be both from plumbing and roof, wall or other structural failures.

2.3 Humidity

Microorganisms grow in moisture films that form on surfaces and within porous materials. This is known as water activity of the material or surface. High levels of humidity can lead to sufficient surface water activity to support accelerated growth if that elevated level is maintained for as little as 24 hours. Accelerated growth takes place with some fungi within 24 hours at humidity levels between 66%-70%.

3.0 Indications for use and Guidelines

Homeowners and building managers should survey their buildings at least monthly for any of the following conditions. When they are found, they should be corrected according to the following guidelines.

3.1 Visible Growth

Areas of visible growth of less than 30 square feet (the area of a single wall panel) can normally be remediated without elaborate procedures. When these areas are identified, first clean affected areas with detergent and water.

Then mist (see application instructions below) lightly with BBJ MAINTAIN C-1 FOR FLOORS AND WALLS to inhibit the growth and spread of fungal spores and other contaminants. If growth is on ceiling tiles or other such easily removable items of nominal value, remove them and seal them in a plastic bag and dispose with normal trash. If the surface is not easily replaceable, clean with detergent and water then mist with BBJ MAINTAIN C-1 FOR FLOORS AND WALLS to retard future growth. If growth appears again in the same location, determine the cause and correct prior to attempting additional treatment.

Areas larger than 30 square feet require special procedures and individuals trained in remediation. Guidelines for remediation of large areas of contamination have been established by the Indoor Air Quality Association (www.iaqa.org) and The US Environmental Protection Agency (www.epa.gov). Many in the field also refer to the New York City Department of Health, "Guidelines on Assessment and Remediation of Fungi in Indoor Environments." Before using BBJ MAINTAIN C-1 FOR FLOORS AND WALLS in mitigation of large projects, you should be knowledgeable of one or more of these guidelines and follow them when using the product. More information can be obtained from BBJ customer service at 800.889.2251.

3.2 Water Damage

Evidence of possible water damage includes water stains on ceilings or walls, persistent wet spots or actual flowing water whether from plumbing failure or outside sources. When water damage is suspected, the first priority is to find the source of water and cut it off. Once that has been accomplished, excess water should be removed. Detailed guidance on proper removal of excess levels of water is contained in, "Standard and Reference Guide for Professional Water Damage Restoration" (IICRC S500) published by the Institute of Inspection, Cleaning and Restoration Certification (www.iicrc.org). If excess water has been removed completely in 24 hours or less, spraying surfaces that were wet with a light misting of BBJ MAINTAIN C-1 FOR FLOORS AND WALLS will inhibit growth and no other steps should be necessary.

Where structural members and/or contents have been exposed to water in excess of 24 hours, there is a possibility of extensive microbial growth that may be visible or hidden. In that case a complete assessment and remediation plan must be prepared that properly incorporates the use of BBJ MAINTAIN C-1 FOR FLOORS AND WALLS, provides for user and occupant safety and documentation and monitoring of the remediation process. If you are not experienced in preparing and executing such a plan, contact BBJ customer Service at 800.889.2251 for assistance. IICRC S500 contains excellent guidance. In the context of such a plan, BBJ MAINTAIN C-1 FOR FLOORS AND WALLS can be used on materials to be removed and disposed of and in other applications where an Antimicrobial use is indicated. The Standard must be followed exactly and all growth and contaminated organic material removed prior to using BBJ MAINTAIN C-1 FOR FLOORS AND WALLS.

4.0 General Directions for BBJ MAINTAIN C-1 FOR FLOORS AND WALLS Usage

BBJ MAINTAIN C-1 FOR FLOORS AND WALLS effectively controls by inhibiting growth of odor causing bacteria, fungi, and other odor, stain or damage causing organisms on floors, walls and other surfaces in residential, commercial, institutional, and industrial buildings. BBJ MAINTAIN C-1 FOR FLOORS AND WALLS 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 a comprehensive preventative maintenance approach.

BBJ MAINTAIN C-1 FOR FLOORS AND WALLS 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 most interior surfaces. Test on an inconspicuous area if you are unsure of the surface you are working with.

BBJ MAINTAIN C-1 FOR FLOORS AND WALLS is formulated for use on all kinds of surfaces including:

- Painted wallboard.
- Structural members and supports.
- Ceilings and above ceiling spaces.
- Basements and crawl spaces.
- Cabinets and countertops.
- Case goods and other furnishings.
- Floor surfaces.
- Artificial turf

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Follow the directions for the specific type of component being treated. For artificial turf, utilize the same method of treatment as indicated for all surfaces. The coverage will be approximately one-half of that for hard surfaces due to the complexity of the surface. ULV or mist generating sprayers are the preferred method of application for artificial turf.

The following directions must 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 BBJ Customer Service at 800.889.2251 prior to use.

4.1 Mixing Instructions

Prior to using, read and observe the instruction on this label. The contents of this package must be properly diluted with tap water at a rate of 2 ounces of product per gallon of water. The contents of this package will make 3 gallons.

4.1.3 As an option, the concentrate can be used in the BBJ Model 904 power sprayer, which dilutes to the proper concentration as spraying takes place. In this case, follow the directions on the sprayer for proper dilution.

4.2 Application Equipment and Devices

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

4.2.1 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 BBJ Customer Service at 800.889.2251 before proceeding. When using brush or mop application, tools and materials used should be reserved only for application of BBJ MAINTAIN C-1 FOR FLOORS AND WALLS, 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 should be of the type 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. Apply to a limited area at a time. Over lap applications to assure complete coverage. Cover completely while avoiding runs or pooling.

4.2.2 Spray Applicators

Spray application is preferred on large surfaces that are easily accessible and most uniformly shaped objects. The spray equipment chosen should provide a consistent fine (1-300 micron) particle size and uniform spray pattern. Powered medium pressure sprayers such as the BBJ model 902 or model 904 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 BBJ Customer Service at 800.889.2251.

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.

4.2.3 ULV (Ultra Low Volume) or Mist Generating Sprayers

ULV, 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. Do not use thermal type fog generators. BBJ model 903 is preferred. Contact BBJ Customer Service at 800.889.2251 for information on other devices.

Generally a fog will carry and provide adequate coverage up to 8 feet from the point of application so the fog must be directed in all directions to assure complete coverage without over wetting. Operators should also carefully read and follow directions for the brand of equipment used. BBJ Customer Service personnel should be contacted at 800.889.2251 for information on training for using various types of equipment.

Personal Protective Equipment including HEPA filtered face mask, hooded coveralls, and rubber gloves must be used when applying in open spaces with mist generating application equipment.

4.3 Application Techniques

BBJ MAINTAIN C-1 FOR FLOORS AND WALLS must be applied evenly over 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 BBJ Customer Service Representative who can be reached toll free at 800.889.2251.

4.4 Rate of Application

The recommended rate of application for BBJ MAINTAIN C-1 FOR FLOORS AND WALLS varies depending on the surface being treated. Users of this product must carefully follow the rate of application instructions provided below:

4.4.1 Hard, Smooth Surface (Glass, Metal)

Apply until surface is evenly wet. Mist or wipe coverage 1,000 ft² per gallon. Spray coverage 500 ft² per gallon. If the above application rates result in surface runoff or liquid pooling, lower the application rate until the surface is thoroughly and evenly wet without runoff or pooling.

4.4.2 Semi Porous Surfaces such as Concrete or Plaster or Wallboard

Apply until surface is evenly wet. Mist coverage 500 ft² per gallon. Wipe not recommended. Spray coverage 250-ft² per gallon. BBJ MAINTAIN C-1 FOR FLOORS AND WALLS 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 make multiple applications at a lower application rate on some surfaces as the first application will wet the surface and facilitate penetration of following application(s).

4.5 Frequency of Application

Normally, infrequent application (once a year or less) will provide effective control. Do not apply more often than monthly and then only if there is evidence of re-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 contact BBJ Customer Service at 800.889.2251 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.

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 for 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 BBJ Customer Service at 800.889.2251 for guidance on the appropriate disinfectant to use for treatment.

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BBJ MAINTAIN C- 1 FOR HVAC SYSTEMS – EPA Reg. No. 67212-2
Antimicrobial for HVAC Systems and Air Ducts
[For Use Only with the HVAC labeling]

BBJ Environmental Solutions, Inc., 6802 Citicorp Dr., Suite 500, Tampa, Florida 33619

DIRECTIONS FOR USE

**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

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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 should 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. It may also be used to inhibit growth on surfaces that normally become wet during operation of the system. These normally include (but are not limited to) evaporator coils, un-insulated piping, condensate drain pans, drain lines, silicon caulks, mist eliminators and cabinet housing components subject to wetting by mist or carryover of water. 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 the HVAC or 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 BBJ MAINTAIN C-1 FOR HVAC SYSTEMS the system must be inspected for cleanliness and mechanical condition. When initiating any measures to repair, clean or treat HVAC system components or air ducts, industry standards from the American Society of Heating and Refrigeration Engineers (ASHRAE), National Air Duct Cleaners Association (NADCA), Indoor Air Quality Association (IAQA) 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.

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 BBJ MAINTAIN C-1 FOR HVAC SYSTEMS. At a minimum, these standards require removing all loose soil and debris with a HEPA filter equipped vacuum cleaner and complete cleaning of soil from all heat exchange surfaces using a special cleaner formulated

so as to clean such soils effectively yet not damage heat exchange components or release unpleasant or potentially damaging fumes. BBJ POWER COIL CLEAN is especially formulated to work with BBJ MAINTAIN C-1 FOR HVAC SYSTEMS.

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.
- Filters must be in good condition and cleaned or replaced as needed to avoid exceeding the allowable pressure drop for the equipment.

If you need help in understanding existing industry standards, consult a qualified professional or contact BBJ Customer Service at 800.889.2251 for guidance and further direction or consult the information at www.epa.gov (search on "HVAC Systems" or "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
- ASHRAE – www.ashrae.org
- NADCA – www.nadca.com
- NAIMA – www.naima.org
- SMACNA – www.smacna.org

2.2 Mechanical Inspection

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS must be used only on HVAC system components and air ducts 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 HVAC system and 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 equipment housing, cabinets and 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 BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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 system components you wish to treat conform to industry practice. If you are not knowledgeable of industry guidelines and standards, consult a qualified professional or contact BBJ Customer Service at 800.889.2251 for assistance.

In some situations, the inspection may reveal that a component of the HVAC or duct system 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 BBJ MAINTAIN C-1 FOR HVAC SYSTEMS. Some (but not all) of the conditions that would indicate the need for major repairs or replacement of the system include:

- Improper size of system or component – The system and all components must be sized to achieve correct airflow and be of the proper capacity for the load. 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 physically damaged equipment may leak or fail to perform as designed. Deformed air ducts will restrict airflow and may leak (especially at joint areas). Damaged equipment must be repaired or 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 BBJ Customer Service at 800.889.2251 for guidance on the appropriate disinfectant to use for treatment.

3.0 General Directions for BBJ MAINTAIN C-1 FOR HVAC SYSTEMS Usage

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS effectively controls by inhibiting growth of odor causing bacteria, fungi, and other odor, stain or damage causing organisms in HVAC system components and air ducts in residential, commercial, institutional, and industrial buildings. BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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 HVAC systems and air ducts.

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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.

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS is formulated for use in all kinds of HVAC components and air ducts including:

- Furnaces.
- Air Handlers.
- Packaged units including Rooftops and Packaged Terminal Air Conditioner (PTAC) units.
- Fan coil units.
- 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.
- Unlined sheet metal ducts.
- Air supply and return ducts and plenums fabricated with plywood, OSB or other wood like material.
- Flexible air ducts fabricated of metal or plastic.
- Humidifiers.
- Dehumidifiers; both Desiccant and Refrigerated.
- Registers, Grills and other air intake and discharge devices.

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 BBJ Customer Service at 800.889.2251 prior to use.

3.1 Mixing Instructions

[mixing instructions for the 6 oz product] Prior to using, read and observe the instruction on this label. The contents of this package must be properly diluted with tap water at a rate of 2 ounces of product per gallon of water. The contents of this package will make 3 gallons

[mixing instructions for the 32 oz container containing 0.5 ounce product] Prior to using, read and observe the instructions on this label. Concentrated product is already in this spray bottle. Fill this bottle with tap water (makes 32 ounces of finished product).

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 Spray Applicators

Spray application is preferred on large surfaces that are easily accessible (such as plenums, coil assemblies, the interior of cabinets, housings with removable access panels, and in long runs of large diameter ducts). The spray equipment chosen should provide a consistent fine (1-300 micron) particle size and uniform spray pattern. Powered medium pressure sprayers such as the BBJ Model 902 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 BBJ Customer Service at 800.889.2251.

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.

3.2.2 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. BBJ Model 903 is preferred. Contact BBJ Customer Service at 800.889.2251 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 cabinets or ducts to assure complete coverage without over wetting. SMACNA, NADCA and NAIMA have established standards and guidelines for making and sealing openings in HVAC system components and 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. BBJ Customer Service personnel should be contacted at 800.889.2251 for information on training for using various types of equipment. Housing and duct penetrations should be properly closed following application, in accordance with industry standards.

3.2.3 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 BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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 BBJ Customer Service at 800.889.2251 regarding a specific

device should you have questions.

3.2.4 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 BBJ Customer Service at 800.889.2251 before proceeding. When using brush or mop application, tools and materials used should be reserved only for application of BBJ MAINTAIN C-1 FOR HVAC SYSTEMS, 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 should be of the types 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 component or air ducts. In such cases, application must start from the point most distant from the point of entry. 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 area to be treated first, followed by the sides then the floor. Overlap applications to assure complete coverage. Cover completely while avoiding runs or pooling.

3.3 Application Techniques

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS must be applied evenly to 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 BBJ Customer Service Representative who can be reached toll free at 800.889.2251.

3.3.1 Application from Exterior of the HVAC System or Air Duct

BBJ MAINTAIN C-1 FOR HVAC SYSTEMS may be sprayed into existing access openings where these provide adequate access. Normally these consist of removable panels or access doors. Completely cover all non-electrical components until they are thoroughly and uniformly covered using hand or powered spray equipment. This is the technique of choice for large penthouse or built up air handlers and other components with access panels or doors.

When applying to ductwork, spray into openings at a minimum of every 8 feet. 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 BBJ MAINTAIN C-1 FOR HVAC SYSTEMS cannot be sprayed into openings at intervals throughout the HVAC or duct system, you must gain entry into the system and spray the product onto interior 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.

Some protection is provided for drain pans by excess BBJ MAINTAIN C-1 FOR HVAC SYSTEMS that runs off of cooling coils when they are treated. Additional protection can be provided by spraying BBJ MAINTAIN C-1 FOR HVAC SYSTEMS onto the surfaces of the pan or pouring into the drain pan until the bottom of the pan is uniformly wetted. Systems greater than 20 tons may require BBJ Pan control strips. Before treating the drain pan, check to determine that the drain line is clear and free running and that the drain pan is clean and free of loose corrosion. Replace badly deteriorated pans. Drain pans that do not drain completely and retain water may

experience microbial growth even when treated. Level drain pans and otherwise adjust them so water completely drains from them.

3.4.1 Fans and Fan Housings

Fans create air turbulence, which can lead to condensation of water that supports mold and other growth. As a result, fan blade and blower wheel surfaces as well as associated housings are especially prone to fouling from both microbial growth and soil accumulation. It may be necessary to partially or completely remove and disassemble these components so they may be properly cleaned prior to application of BBJ MAINTAIN C-1 FOR HVAC SYSTEMS. Complete cleaning must take place before attempting to treat these components.

3.4.2 Humidifiers and Dehumidifiers

Because of the amount of water present, humidifiers and dehumidifiers are often sites especially prone to microbial growth. They also attract and hold soil as growth related contamination builds up over time. This accumulated material must be thoroughly removed prior to treatment with BBJ MAINTAIN C-1 FOR HVAC SYSTEMS. For some units, cleaning may also signal the need to replace pads, belts, wheels or service other components. The manufacturer of the unit being maintained should be consulted on the proper maintenance and cleaning procedure.

3.4 Rate of Application

The recommended rate of application for BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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 ft² per gallon. Spray coverage 500 ft² 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 ft² per gallon. Wipe not recommended. Spray coverage 250-ft² per gallon. BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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 (every 3 months for HVAC Systems and every 6 months to every two years for air ducts) will provide effective control. Some critical applications such as HVAC and 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 three months) contact BBJ Customer Service at 800.889.2251 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 in air ducts 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

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before retreating.

3.6 Returning the System to Operation following Application

Equipment being treated and the fans and blowers in the section of duct being treated must be turned off during application of BBJ MAINTAIN C-1 FOR HVAC SYSTEMS. If the system cannot be shut down, the section of the system 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 BBJ MAINTAIN C-1 FOR HVAC SYSTEMS to the surfaces within 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. BBJ MAINTAIN C-1 FOR HVAC SYSTEMS will dry on surfaces within 15 minutes following application. Extended drying time does not have an impact on effectiveness of treatment. BBJ MAINTAIN C-1 FOR HVAC SYSTEMS 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 BBJ MAINTAIN C-1 For HVAC SYSTEMS released to the spaces served by a system being treated. There is no need to have occupants leave the building during application.