NALCO

COILFLO

# CoilClear™

**DILUTE CONTENTS OF THIS PACKAGE BEFORE USE**

| ACTIVE INGREDIENT | |
|---|---|
| 2-Bromo-2-nitropropane-1,3-diol | 95.0% |
| OTHER INGREDIENTS | 5.0% |
| TOTAL | 100.0% |

*Distributed By:*
*Nalco Company*
*1601 West Diehl Road*
*Naperville, IL 60563-1198*

*For reorder Call (877) 813-3523*

EPA Reg. Number 67212-1-1706 • EPA Est. Number 67212-FL-001

**KEEP OUT OF REACH OF CHILDREN**

**DANGER:** See attached booklet for additional precautionary statements.

In the event of an emergency call CHEMTREC (800) 424-9300

Net Contents
.14 OZ. (4.0g)

Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD 2011-2013 LIC. NO. 9323.77

Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD 2014-2016 LIC. NO.

Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD 2005-2007 LIC. NO.

# CoilClear™

| ACTIVE INGREDIENTS: | |
|---|---|
| 2-Bromo-2-nitropropane-1,3-diol | 95.0% |
| INERT INGREDIENTS: | 5.0% |
| TOTAL | 100.0% |

KEEP OUT OF REACH OF CHILDREN

**DANGER:**
SEE ADDITIONAL PRECAUTIONARY STATEMENTS ON BACK

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NET CONTENTS 0.14 oz. (4.0 g)

DILUTE CONTENTS OF THIS PACKAGE BEFORE USE

DIRECTIONS FOR USE ARE CONTAINED IN THIS BOOKLET AND MUST BE READ COMPLETELY PRIOR TO USING THIS PRODUCT.

| FIRST AID | |
|---|---|
| If swallowed: | -Call a poison control center or doctor immediately for treatment advice.<br>-Have person sip a glass of water if able to swallow.<br>-Do not induce vomiting unless told to do so by a poison control center or doctor.<br>-Do not give anything by mouth to an unconscious person. |
| If non-diluted product inhaled: | -Move person to fresh air.<br>-If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.<br>-Call a poison control center or doctor for further treatment advice. |
| If on skin or clothing: | -Take off contaminated clothing.<br>-Rinse skin immediately with plenty of water for 15-20 minutes.<br>-Call a poison control center or doctor for treatment advice. |
| If in eyes: | -Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.<br>-Call a poison control center or doctor for treatment advice. |
| NOTE TO PHYSICIAN<br>Probable mucosal damage may contraindicate the use of gastric lavage. | |

## PRECAUTIONARY STATEMENTS
## HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER. Corrosive. Causes irreversible eye damage and skin. Harmful if swallowed. Do not get in eyes, on skin or on clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before re-use.

PERSONAL PROTECTION EQUIPMENT REQUIREMENTS FOR HANDLERS:
All handlers must wear protective eyewear, long pants, long-sleeved shirts and chemical resistant gloves.

ENVIRONMENTAL HAZARDS: This product is toxic to fish. Do not contaminate water by cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Keep away from heat.

PESTICIDE STORAGE: Store in areas inaccessible to children or persons unfamiliar with its use.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous, improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Completely empty package by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture. Dispose of package in a sanitary landfill, or by incineration, if allowed by State and local authorities. If burned, stay out of smoke.

**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

CoilClear is designed to be used as one component of a comprehensive HVAC system maintenance program. The purpose of such a program is to assure that the HVAC system and air 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 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. 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, mist eliminators and cabinet or housing components subject to wetting by mist or carryover of water. 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 fully understand and have received answers for all of your questions.

## 2.0 Inspection

Prior to inspecting, cleaning, treating, repairing or otherwise working on an air conditioning system, the system should be turned off or the component being serviced physically isolated from sections in active use.

Prior to any application of CoilClear, units must be inspected for cleanliness and mechanical condition. When initiating any measures to repair, clean or treat HVAC system components, industry standards from the American Society for Heating Refrigeration and Air-conditioning 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. Equipment manufacturers' maintenance information should be consulted for recommended inspection frequency when available. If such information is not available, equipment should be inspected every six months at a minimum.

## 2.1 Cleanliness Inspection

If any of the following cleanliness deficiencies are found during inspection, cleaning in accordance with industry standards must be performed prior to the application of CoilClear. At a minimum, these standards require removing all loose soil and debris 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. CoilClear is especially formulated to work with the Coil-Flo HVAC Cleaning Systems.

### 2.1.1 Contamination (Identification and Corrective Action)

- 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 are not aware of existing industry standards, consult a qualified professional or contact your local Nalco Sales Representative for guidance and further direction. 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
IAQA – www.iaqa.org
NADCA – www.nadca.com
NAIMA – www.naima.org
SMACNA – www.smacna.org

## 2.2 Mechanical Inspection

CoilClear must be used only on 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 system and assure that it is 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 housings and cabinets 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 CoilClear 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 component(s) you wish to treat conform to industry practice. If you are not knowledgeable of industry guidelines and standards, consult a qualified professional.

In some situations, the inspection may reveal that the 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 CoilClear. 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. Damaged equipment must be repaired or replaced or if there is extensive damage, the entire system may need to 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 component replaced. Air handler, mixing, and VAV box housings as well as air ducts are normally insulated and this insulation should be checked for damage.

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 and 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 decontamination to assure that fumes from the agent being used are not released into occupied spaces. Products selected should be used according to their label directions. Please contact Nalco Customer Service at 877-813-3523 for guidance on the appropriate disinfectant to use for decontamination.

## 3.0 General Directions for CoilClear Usage

CoilClear effectively controls by inhibiting growth of bacteria and other odor causing organisms in industrial and commercial air conditioning and humidifying systems. CoilClear also eliminates odors associated with bacteria, mold, mildew, smoke and other odors and removes odor-causing organisms when used as part of a comprehensive preventative maintenance program in HVAC system components.

CoilClear is formulated for use in HVAC components including:

- Air Handlers.
- Packaged units including Rooftops and Packaged Terminal Air Conditioner (PTAC) units.
- Fan Coil Units.
- Condensate drain pans.
- Humidifiers.
- Dehumidifiers.
- Registers, Grills and other air intake and discharge devices.

Follow the directions below for the specific type of component being treated. It is important 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 need help understanding any of the directions, call Nalco Customer Service at 877-813-3523 prior to use.

### 3.1 Mixing Instructions

This package contains the microbiocide. The diluent is in the attached container. Prior to using, the contents of this package must be mixed with the contents of the diluent container and properly diluted with tap water:

3.1.1 Read and observe the instructions and precautions on package.
3.1.2 Remove top from this container.
3.1.3 Open diluent container and empty contents into this container.
3.1.4 Shake this container and allow to stand for 30 seconds or until crystals are completely dissolved.
3.1.5 This makes a concentrate that then must be diluted with tap water before use. Dilute according to the following chart:

| Concentrate (active plus Diluent) | Tap Water | Final Quantity |
|---|---|---|
| 0.75 fl. Oz. | 31.25 fl. Oz. | 1 Quart |
| 3 fl. Oz. | 125 fl. Oz. | 1 Gallon |
| 6 fl. Oz. | 227 fl. Oz. | 2 Gallons |
| 9 fl. Oz. | 375 fl. Oz. | 3 Gallons |
| 12 fl. Oz. | 3 Gallons plus 116 fl. Oz. | 4 Gallons |
| 15 fl. Oz. | 4 Gallons plus 113 fl. Oz. | 5 Gallons |

3.1.6 Preferably, the concentrate can be used in one of the Coil-Flo HVAC Cleaning Systems, which dilutes to the proper concentration as spraying takes place. In this case, use the blue adapter to connect the bottle with the Coil-Flo HVAC Cleaning Systems.

### 3.2 Application Equipment and Devices

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

**Spray Applicators**

Spray application is preferred on large surfaces that are easily accessible (such as plenums, coil assemblies and the interior of cabinets and housings with removable access panels). For this application, the Coil-Flo HVAC Cleaning System is recommended. The spray equipment chosen should provide a consistent fine (1-300 micron) particle size and uniform spray pattern.

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. The exception to this is treatment of coil assemblies. In this case saturate the coil assembly to its full depth and allow CoilClear to run into the drain pan to assure full coverage.

### 3.3 Application Techniques

CoilClear 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.

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

CoilClear 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 taking care to avoid wetting electrical components that are not sealed to exclude moisture. 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 component design 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 CoilClear cannot be sprayed into existing openings so as to achieve adequate coverage, you must gain entry into the component and spray the product onto surfaces 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.

Some protection is provided for drain pans by excess CoilClear that runs off of cooling coils when they are treated. Additional protection can be provided by spraying CoilClear onto the surfaces of the pan or pouring into the drain pan until the bottom of the pan is uniformly wetted. 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 Instructions for Specific Components

#### 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 CoilClear. 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 CoilClear. 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.

## 3.5 Rate of Application

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

### 3.5.1 Bare Metal

Apply until surface is evenly wet. Spray coverage 500 $ft^2$ per gallon. If the above application rates result in surface runoff or liquid pooling in the bottom of the housing, 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.

### 3.5.2 Drain Pans and Water Sumps

CoilClear will inhibit growth of odor causing and damaging bacteria and bacterial slime in HVAC drain pans and other water sumps. Following cleaning, the interior of the drain pan should be rinsed with a dilute solution of CoilClear and the excess solution allowed to flow into the drain where it will help inhibit growth in the drain line. For sumps where water stands such as humidifier sumps, monthly dosing of the sump may also be required to maintain control. In such cases measure or estimate the amount of water held by the sump and add one pint of dilute CoilClear for each gallon of sump capacity. This should be added as often as needed to maintain control. Do not exceed one dose each week.

## 3.6 Frequency of Application

For most surfaces infrequent application (every 6 months when inspected) will provide effective control. Some critical applications such as HVAC 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 to surfaces and weekly in water sumps 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 (more frequent than every six months) contact your local Nalco Sales Representative 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 component should be inspected and found to be free of accumulated soil or microbial growth. If soil or growth is found, the cause should be determined and corrected and then the equipment cleaned in accordance with accepted industry practice.

## 3.7 Returning the System to Operation following Application

Equipment being treated must be turned off during application of CoilClear. 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 from being blown away from the surface that is being treated.

Do not attempt to use the system fan or blower to carry CoilClear to surfaces within the system. It 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. CoilClear will dry on surfaces within 15 minutes following application. Extended drying time does not have an impact on effectiveness of treatment. CoilClear 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 CoilClear released to the spaces served by a system being treated. There is no need to have occupants leave the building during application.