Nu-Calgon Application Bulletin 3-126

ICE MACHINE CLEANERS



Liquid Ice Machine Cleaner



Nickel-Safe Ice Machine Cleaner

- **Complete family of liquid ice machine cleaners**
- **Formulated for use in all makes and models of ice makers including those with nickel and tin plated evaporaters**
- **Functional in cubers, flakers, drum and tube machines**
- **Food-grade, USDA-Accepted**

Description

Nu-Calgon provides two formulations of liquid-based ice machine cleaners, Liquid Ice Machine Cleaner and Nickel-Safe Ice Machine Cleaner. Both are designed for removing lime scale deposits from ice machines, coffee urns, vending equipment as well as other scaled-up water using items like humidifiers and potable water heaters.

Liquid Ice Machine Cleaner is a 75% phosphoric acid of the highest food-grade quality. It is fast acting yet very safe to use and it does not give off any harsh fumes. Because of its 75% phosphoric acid content, it is the most concentrated ice machine cleaner in the market. It has a specific gravity of 1.63 and weighs 13.6 lbs. per gallon. Usage rate is 8 fluid ounces with three gallons of water.

Nickel-Safe Ice Machine Cleaner is a specially formulated citric/phosphoric food-grade product for removing scale deposits from ice makers having nickel-plated or tin-plated evaporators. It is acceptable for use in machines made by Manitowoc and other manufacturers using nickel. In fact, it was the industry's first nickel-safe product, introduced in collaboration with Manitowoc. Usage rate should be in accordance with the manufacturers instructions or 16 fluid ounces with three gallons of system water.

Application

The number one category of problems troubling an ice machine are water-related, and the most frequently is lime scale. As the water is frozen into ice during an ice maker's cycle, the naturally occurring dissolved minerals in the water . . . some of which can combine to form lime scale . . . remain behind in the unfrozen recirculating ice water simply because water tries to freeze in its pure state. As the cycle continues and more water is made into ice, the minerals over concentrate and eventually precipitate as a lime scale deposit.

As the scale begins to form, it creates a physical obstruction that results in: plugged distribution holes, restricted water flow and eventually the ice maker will hang-up or jam. Ice harvest is reduced and eventually the machine will shut down, requiring service.

This sequence of events can affect both cubers and flakers. Some believe that flakers are free of scale problems since all of the water is made into ice. Not true. Flakers can scale-up as well, jamming the auger and eventually resulting in a broken belt or drive mechanism.

Once the machine is scaled up, it must be cleaned, requiring the use of an acid so that the scale can be dissolved. Obviously, the acid must be effective in order to dissolve the scale but it must also be food grade and equipment-safe.

Packaging

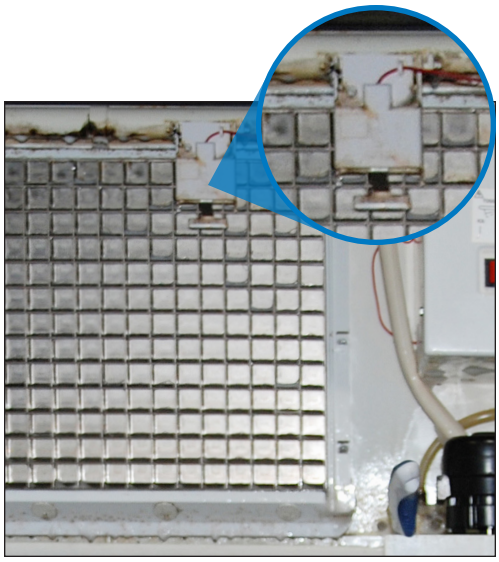
Liquid Ice Machine Cleaner		Nickel-Safe Ice Machine Cleaner	
8 fl. oz. (13.6 net wt. oz.)	**4207-47**	16 fl. oz. bottle	**4287-34**
1 gallon	**4207-08**	1 gallon	**4287-08**

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Directions for use: Liquid Ice Machine Cleaner

DIRECTIONS FOR USE IN ICE MACHINES AND COFFEE BREWERS

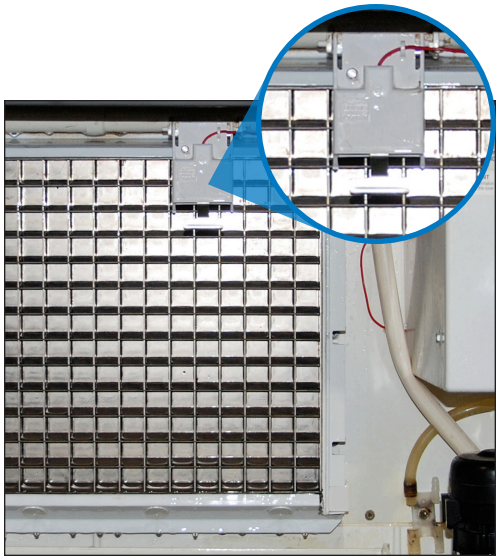
- For ice machines, leave pump in operation but turn off refrigeration.
- Drain unit and refill with fresh water.
- Add Ice Machine Cleaner to water in unit. Use about 8 fluid ounces for each 3 gallons of water.
- Allow cleaner to circulate for about 30 minutes. If solution does not contact all scaled surfaces, use a brush to get cleaning solution to those parts. If scale is extra heavy, another dose of cleaner may be necessary. Ice machine drums may be cleaned by adding one cup of cleaner to a glass or plastic container holding 2 quarts of water and brushing the solution on the scaled surfaces.
- After scale has been removed, drain out all water and flush thoroughly with fresh water.
- Rinse out product container and dispose of properly.
- Return machine to service; discard first batch of ice.
- NOTE: Do not use on nickel plated or galvanized surfaces; on these surfaces, use Nu-Calgon's Nickel-Safe Ice Machine Cleaner. Do not mix with chlorine bleach.



Before cleaning ice machine

Directions for use: Nickel-Safe Ice Machine Cleaner

- Turn off refrigeration, shut off water supply and remove ice from bin.
- Remove water trough, water curtain(s), water distribution tube(s), and other parts that may be scaled with deposits.
- Mix 3 oz. Nickel-Safe Ice Machine Cleaner per gallon of warm water in plastic container and place components in solution. Soak the components until they are free of deposits; for stubborn or thick deposits use a soft brush to help the dissolving action.
- Use above solution to clean storage bin, top, bottom and side extrusions and other components where deposits have collected, then rinse cleaned areas with fresh water.
- Replace cleaned components and turn on water.
- To clean evaporator as well as the remaining recirculating water system, add Nickel-Safe to the water in ice maker according to the manufacturer's instructions. If none are available, use 5 fl. oz. of Nickel-Safe per gallon of water in the machine.
- Allow cleaning solution to circulate for up to 10 minutes; it may be necessary to recirculate the solution for longer than 10 minutes to remove heavier and thicker scale deposits. Be sure all distribution and weep holes are clear. Drain cleaning solution and flush with fresh water for a minimum of 30 seconds. After flushing, plug the drain.
- Thoroughly rinse bin with clean water after all components are cleaned.



After cleaning ice machine

Slime Growths

If bacterial slime growths or yeast formations were occurring, it is recommended that the ice maker be sanitized after cleaning and that these future biological growths be prevented. Use IMS-III Sanitizing Concentrate to sanitize the ice maker.



Filtration

Because an ice maker or coffee urn scaled up, it is necessary to filter the water with a filtration system or cartridge containing 6Rsp Micromet for the prevention of lime scale. Contact Nu-Calgon for recommendations.

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