

The natural sanitation of ice

CLEAN-ICE

BY HEMA

germ-free
hygienic
chemical free



CLEAN-ICE BY HEMA

The natural sanitation of ice - germ-free and hygienic with Clean-Ice

In the clean ice system, ozone (O_3) is produced directly in the water inlet to the ice machine and is therefore very effective. After the sanitation process, the ozone breaks down again into oxygen (O_2).

With the Clean-Ice System, you also pass official hygiene controls:

- no bacteria and germs in the ice
- without chemicals
- facilitates your HACCP* concept
- Effectiveness confirmed by laboratories and practice



The O_3 cell standing in the water generates high-purity ozone, which dissolves in the water under the water line pressure. Lines, tanks, ice production, storage containers as well as fresh food counters and devices remain germ-free for longer. The formation of new biofilms is reliably prevented.

Biofilms often appear as an unsavory layer of mucus in which z. B. bacteria, algae and fungi are embedded. The use of harsh chemicals is no longer necessary. The very efficient process within the Clean-Ice system generates exactly the amount of ozone that is required for the best possible range of effects.

Easy installation - user-friendly - low maintenance costs

The clean-ice technology is already being used successfully hundreds of times in the food industry. Tests by independent institutes prove the effectiveness of the Clean-Ice system

The clean-ice system is guaranteed to work without chemicals - residue-free

Germs and bacteria are reduced by up to 99.999% (Log 5), harmful biofilms are permanently eliminated, and new formation is effectively prevented.

One device - two functions

- + Permanent system protection protects the ice machine against germs
- + Sporadic sanitation similar to disinfecting the ice machine in the event of severe contamination



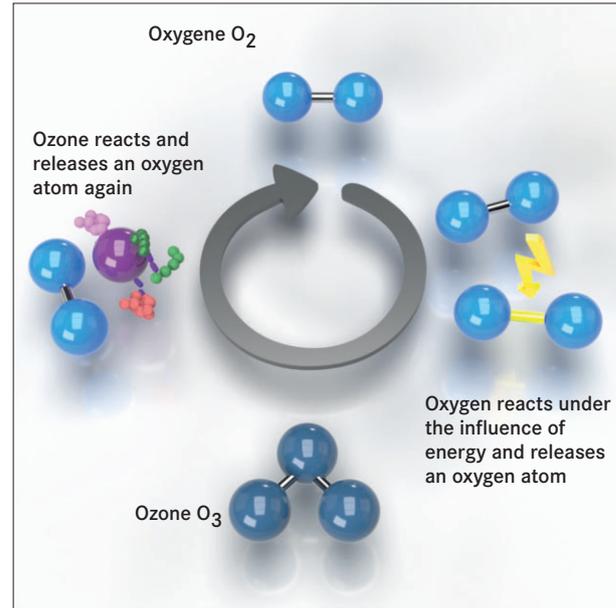
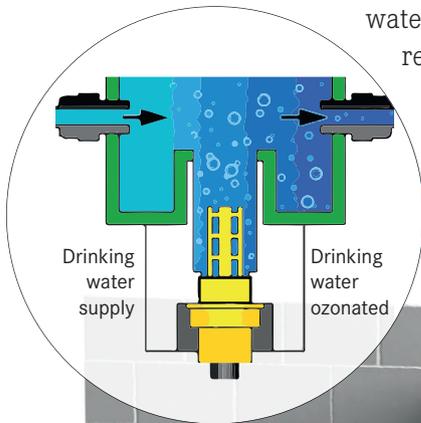
*Hazard Analysis and Critical Control Points

HOW IT WORKS

Simple and effective

Ozone (O_3) is enriched oxygen and a natural, highly effective sanitation agent that is approved and successfully used in water treatment (TrinkwV §11) and in food hygiene.

The (O_3) cell of the Clean-Ice System standing in the water generates high-purity ozone, which dissolves in the water under the water supply pressure and reliably prevents the formation of new biofilms.



Working principle



Example installation without an upstream decalcifying system

outer diameter	75 mm
height	250 mm
Water quality	Drinking water up to 13° dH
Resources	Drinking water + 1°C to 32°C
Ambient temperature	+1°C to +43°C
Voltage	240 V, 50/60 Hz
Certificates	CE / RoHS
Water flow	0.1 l/min to 4.5 l/min
Water pressure	min. 3 bar, max 6 bar

FREQUENTLY ASKED QUESTIONS



Q: How is ozone produced in water?

A: The ozone (O₃) is produced in the Clean-Ice system by electrolysis and a special membrane from the oxygen (O₂) contained in the water.

Q: How does Clean-Ice work?

A: The Clean-Ice system can be easily connected to the water supply of the ice machine and generates ozone dissolved in the water. The water treated in this way disinfects the ice machine. In addition, ice from ozonated water effectively disinfects surfaces in the ice machine, in the tank and in the lines as well as in the ice container and utensils.

Q: Is the ozone inside or outside the ice cube?

A: The ozone is found throughout the ice cube, with the outermost layer having the highest ozone concentration. The actual amount of ozone in the ice cube is very small.

Q: Is there ozone, for example, in the customer's drink and is it safe?

A: Ozone is a treatment agent approved according to the German Drinking Water Ordinance § 11. Ozone is considered a processing aid in food production and is therefore not permitted. The amount of residual ozone in ice cubes produced by ice machines treated with Clean-Ice by HEMA is well below the limit of 50 ppb (parts per billion) and has no negative impact whatsoever.

Q: Does ozone affect goods that are stored in ice or does it affect the taste of beverages?

A: On the contrary: Ozone is a recognized and effective oxidizing agent and is used to reduce unpleasant tastes and odors in drinking water.

Q: What happens to ice that is left on the bottom of the ice bin for a long time?

A: The ice gradually melts and the resulting water is drained from the container. The »ice melt« disinfects container surfaces, drainage devices and pipes.

Q: Is the device compatible with machines or ice buckets of all sizes and types?

A: Clean-Ice by HEMA is compatible with every ice machine that has a water flow.

Q: How long is the ozone produced effective?

A: In liquid form in water, ozone is active for about 15 minutes. In the frozen state - i.e. in the ice - the ozone is preserved and gradually and safely evaporates in the ice container when the ice melts. The ozone thus remains active during the entire period between freezing, storage and transport until it is dispensed and evaporated without damage.

Q: How can you tell that Clean-Ice by HEMA is working and in operation?

A: The LEDs on the top of the device show the respective operating status.

Q: Are there any wearing parts on the device?

A: The ozone cell is a wear part and must be replaced every six months.

Q: Is there a health hazard from ozone released in an ice machine?

A: Our electrolytic method of producing ozone from and in water has been specially optimized for confined spaces. The method kills bacteria and other microorganisms inside the ice machine, with the ozone level remaining below the permissible exposure limit and safety standards. Other ozone technologies, e.g. B. corona discharge, are not suitable for confined spaces and represent possible safety risks.

Q: Does the ozone attack materials such as polymers and metals in the machine?

A: Our method of making ozone in water gradually releases ozone in a dissolved liquid form within the ice machine. This avoids high concentrations of ozone that could affect materials.

Q: Have independent laboratories confirmed the hygiene performance of Clean-Ice?

A: The effectiveness of the Clean-Ice system has been confirmed by independent laboratories. The results e.g. B. for the bacterial type "E. coli" clearly show that the device achieved a complete kill (5-log). Field tests show a drastic reduction in the recurrence and growth of microorganisms.

Your Clean-Ice by HEMA sales partner:

HEMA Maschinen- und
Apparateschutz GmbH
Am Klinggraben 2
63500 Seligenstadt, Germany
Phone: +49(0)06182/773-0
info@hema-group.com
www.hema-group.com

