## JORENKU HALAMID







Halamid<sup>®</sup> is an effective powder disinfectant for all livestock with proven efficacy against a long list of bacteria and viruses.

Halamid<sup>®</sup>, also known by the chemical name Chloramine-T, is a broad-spectrum disinfectant with proven efficacy against all types of microorganisms. Halamid<sup>®</sup> is dissolved in water and used extensively to maintain hygiene within veterinary hygiene, aquaculture, drinking water systems, and many other areas.

Halamid® has proven effective against:

- 94 bacteria
- 49 viruses
- 22 funguses
- 6 algae
- 4 types of yeasts
- 4 parasites

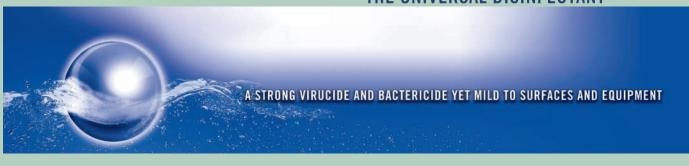
Halamid<sup>®</sup> is a strong concentrated powder disinfectant where the solutions are non-corrosive (as opposed to most other chlorine-, peroxide- or peracetic acid-based disinfectants).

Halamid<sup>®</sup> is active at low temperatures, easily biodegradable, does not contain aldehydes or phenols, and there is no risk of developing resistance, wherefore rotation with other disinfectants is not necessary.

#### Halamid® is characterised by:

- Large activity spectrum
- Non-corrosive in the shown concentrations
- Non-corrosive in solution for materials
- Easy to use and versatile
- Stable
- Readily biodegradable
- No risk of building up resistant microorganisms

Halamid $^{\text{@}}$  is available in sachets with 100 g, in boxes with 25 sachets with 100 g, in buckets with 1 kg and 6 kg as well as in bags with 25 kg.



Application	Concentration	Remark
Surface and building	0.5 % - 1 %	300 ml/m <sup>2</sup>
disinfection by spraying		
Surface and building	2 % - 3 %	40 - 50 ml/m <sup>3</sup>
disinfection by nebulization		
Vehicle disinfection	1 %	
Footbath	2 %	Renew approx. twice a week
Water system disinfection	0.5 %	Rinse with clean water
For continuous drinking water disinfection	200 g + 20 L water	The metering pump is set for a 2 % solution
For continuous use in wet feed systems	Mixed 0.02 % = 20 g per 1,000 kg	
Cow teat disinfection	0.3 %	Mixed in glycerine or another teat disinfection
Milking equipment disinfection	0.3 % - 0.5 %	Rinse with clean water
Hoofbath	1 %	Renew at least once a week
Egg disinfection	0.3 %	
Malanders, thrush and ringworm disinfection	2 %	
Fish tank and pond disinfection	1 % - 2 %	
Net disinfection	1 %	
Well boat disinfection	1 % - 2 %	
Water treatment -	10-20 ppm (10-	Can be repeated up to 4 times
Freshwater raceway ponds	20 g/m³) for one hour	of consecutive or alternate days
Water treatment - Stagnant water ponds	3 ppm (3 g/m <sup>3</sup> )	Once a week
Equipment and greenhouse disinfection	1 %	300 ml/m <sup>2</sup>

The use of Halamid $^{\otimes}$  as a disinfectant may be submitted to local legislation and a registration may be required. Please check with your local authorities or contact Jorenku A/S to check about the registration status in your country.



#### Halamid® in cattle and calve farming

- Disinfection of cow teats and milking equipment
- Disinfection of stables, equipment, vehicles, and footbath
- Removes biofilm
- Economical in use
- Does not corrode materials



#### When using Halamid® for cattle and calves, the following is recommended:

In intensive cattle farming, the high density of animals increases the risk of diseases. Buildings, equipment, and lorries, when not properly cleaned and disinfected are responsible for transmission of pathogenic microorganisms between animals and stables.

Halamid<sup>®</sup> covers all possible areas in cattle farming where there is a need to disinfect-stables, equipment, vehicles, and footbath. Halamid<sup>®</sup> is used by spraying, nebulisation or fogging and to remove biofilm.

The efficacy of Halamid® against bacteria and viruses in cattle farming is confirmed by various laboratory tests and field trials.

**General disinfection in cattle farming**: Meticulous cleaning is a required preliminary step before disinfection to ensure the best results. Without proper cleaning, dirt and organic matter reduce the effect of Halamid<sup>®</sup>. Start by dry cleaning to remove most of the organic matter, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid<sup>®</sup>. Halamid<sup>®</sup> is always applied as an aqueous solution. Dissolve Halamid<sup>®</sup> in clean water at the required concentration (see page 2).

**Surfaces and stable disinfection**: In empty buildings clean thoroughly and disinfect with a Halamid® solution, applied by spraying, nebulization, or fogging. For spraying, use 300 ml/m² of a Halamid® solution at a concentration of 0.5-1 % per 2.5 m² to cover the total surface area incl. walls and ceiling. For fogging, use a Halamid® solution with a recommended volume of 40-50 ml/m³ at a concentration of 2-3 %.

**Footbath**: Place a footbath at the entrance of each building and everybody must use it. A 2 % Halamid® solution is prepared and refreshed as often as needed, however, at least twice a week.

**Water system disinfection**: Safe drinking water is a very important parameter for the animal well-being. When the stables are empty, run a 0.5 % Halamid® solution through the water system for 30 min and then rinse with clean water. Halamid® can also be used to disinfect drinking water.

**Water purification valve and removal of biofilm**: In stables equipped with a water purification valve, the stable is disinfected with Halamid<sup>®</sup> to remove biofilm through the water purification valve. Use a Halamid<sup>®</sup> solution at a concentration of 2-3 % with a recommended volume of 40-50 ml/m<sup>3</sup>. This has proven not only to be an effective way to disinfect, but also economically advantageous due to the low amount of Halamid<sup>®</sup> used to get the right disinfectant ability.

**Truck disinfection**: By transport wit truck from farm to farm there is a great risk of transmission of diseases. Therefore, it is important to make sure all vehicles (incl. the wheels) are well disinfected prior entrance to the farm. Optimally, a solution of 1 % Halamid® is used prior arrival. Halamid® is interesting to use as solutions are non-corrosive to materials and the product is active even at low temperature.

**Cow teat disinfection**: Cow teats are disinfected with a 0.3 % Halamid® solution, after each milking, or once a day for non-lactating cows. Disinfect with either a pure Halamid® solution in water or with a Halamid® based formulation. It is also recommended that the staff disinfects hands while handling cows by dipping the hands into a 1 % Halamid® solution.

**Milking equipment disinfection**: Due to the high amount of organic matter, milking equipment is a perfect place for microbial development and thorough disinfection is required on a frequent basis. Clean the equipment with a Halamid® solution at 0.3-0.5 % with a contact time of at least 5 min. Continue by rinsing with clean water. Studies show that Halamid® has advantages over other active chlorine disinfectants, as its killing effect is better preserved in presence of organic matter. In addition, Halamid® forms much less toxic organic chlorine compounds by reaction with milk residues compared to hypochlorite and triisocyanurate.



#### Halamid® in pig farming

- Effective against Lawsonia intracellularis
- Can be added to wet feed systems and drinking water
- Disinfection of stables, equipment, vehicles, and footbath
- Removes biofilm
- Does not corrode materials



#### When using Halamid® for pigs, the following is recommended:

In intensive pig farming, the high density of animals increases the risk of diseases. Buildings, equipment, and lorries, when not properly cleaned and disinfected are responsible for transmission of pathogenic microorganisms between animals and stables.

Halamid<sup>®</sup> covers all possible areas in pig farming where there is a need to disinfect - stables, equipment, vehicles, and footbath. Halamid<sup>®</sup> is used by spraying, nebulisation or fogging and to remove biofilm.

The efficacy of Halamid® against bacteria and viruses in pig farming is confirmed by various laboratory tests and field trials.

**General disinfection in pig farming**: Meticulous cleaning is a required preliminary step before disinfection to ensure the best results. Without proper cleaning, dirt and organic matter reduce the effect of Halamid<sup>®</sup>. Start by dry cleaning to remove most of the organic matter, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid<sup>®</sup>. Halamid<sup>®</sup> is always applied as an aqueous solution. Dissolve Halamid<sup>®</sup> in clean water at the required concentration (see page 2).



**Surfaces and stable disinfection**: In empty buildings clean thoroughly and disinfect with a Halamid<sup>®</sup> solution, applied by spraying, nebulization, or fogging. For spraying, use 300 ml/m<sup>2</sup> of a Halamid<sup>®</sup> solution at a concentration of 0.5-1 % per 2.5 m<sup>2</sup> to cover the total surface area incl. walls and ceiling. For fogging, use a Halamid<sup>®</sup> solution with a recommended volume of 40-50 ml/m<sup>3</sup> at a concentration of 2-3 %.

**Water system disinfection**: Safe drinking water is a very important parameter for the animal well-being. When the stables are empty, run a 0.5 % Halamid<sup>®</sup> solution through the water system for 30 min and then rinse with clean water. Halamid<sup>®</sup> can also be used to disinfect drinking water.

**Water purification valve and removal of biofilm**: In stables equipped with a water purification valve, the stable is disinfected with Halamid<sup>®</sup> to remove biofilm through the water purification valve. Use a Halamid<sup>®</sup> solution at a concentration of 2-3 % with a recommended volume of 40-50 ml/m<sup>3</sup>. This has proven not only to be an effective way to disinfect, but also economically advantageous due to the low amount of Halamid<sup>®</sup> used to get the right disinfectant ability.

**Footbath**: Place a footbath at the entrance of each building and everybody must use it. A 2 % Halamid® solution is prepared and refreshed as often as needed, however, at least twice a week.

**Truck disinfection**: By transport wit truck from farm to farm there is a great risk of transmission of diseases. Therefore, it is important to make sure all vehicles (incl. the wheels) are well disinfected prior entrance to the farm. Optimally, a solution of 1 % Halamid® is used prior arrival. Halamid® is interesting to use as solutions are non-corrosive to materials and the product is active even at low temperature.

Lawsonia intracellularis: Lawsonia intracellularis is responsible for Porcine Proliferative Enteropathy, also known as ileitis, a very problematic and costly pig disease. Lawsonia bacteria can survive up to two weeks in pig farm environment. Because contamination mainly occurs via infected faeces, regular disinfection of the pig farm is important. Halamid® is one of the very few disinfectants proven effective against Lawsonia intracellularis. A 0.3 % Halamid® solution with a contact time of 30 min effectively kills the bacteria.



#### Halamid® in poultry farming

- Disinfection of fertile eggs
- Disinfection of stables, equipment, vehicles, and footbath
- Removes biofilm
- Economical in use
- Does not corrode materials



#### When using Halamid® for poultry, the following is recommended:

In intensive poultry farming with many animals the risk of diseases increases. Buildings, equipment, and lorries, when not properly cleaned and disinfected are responsible for transmission of pathogenic microorganisms.

Halamid<sup>®</sup> covers all possible areas in poultry farming where there is a need to disinfect - stables, equipment, vehicles, and footbath. Halamid<sup>®</sup> is used by spraying, nebulisation or fogging and to remove biofilm.

The efficacy of Halamid<sup>®</sup> against bacteria and viruses in poultry farming is confirmed by various laboratory tests and field trials.

General disinfection in poultry farming: Meticulous cleaning is a required preliminary step before disinfection to ensure the best results. Without proper cleaning, dirt and organic matter reduce the effect of Halamid®. Start by dry cleaning to remove most of the organic matter, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid®. Halamid® is always applied as an aqueous solution. Dissolve Halamid® in clean water at the required concentration (see page 2).



**Surfaces and stable disinfection**: In empty buildings clean thoroughly and disinfect with a Halamid® solution, applied by spraying, nebulization, or fogging. For spraying, use 300 ml/m² of a Halamid® solution at a concentration of 0.5-1 % per 2.5 m² to cover the total surface area incl. walls and ceiling. For fogging, use a Halamid® solution with a recommended volume of 40-50 ml/m³ at a concentration of 2-3 %.

**Water system disinfection**: Safe drinking water is a very important parameter for the animal well-being. When the stables are empty, run a 0.5 % Halamid<sup>®</sup> solution through the water system for 30 min and then rinse with clean water. Halamid<sup>®</sup> can also be used to disinfect drinking water.

**Water purification valve and removal of biofilm**: In stables equipped with a water purification valve, the stable is disinfected with Halamid® to remove biofilm through the water purification valve. Use a Halamid® solution at a concentration of 2-3 % with a recommended volume of 40-50 ml/m³. This has proven not only to be an effective way to disinfect, but also economically advantageous due to the low amount of Halamid® used to get the right disinfectant ability.

**Footbath**: Place a footbath at the entrance of each building and everybody must use it. A 2 % Halamid® solution is prepared and refreshed as often as needed, however, at least twice a week.

**Truck disinfection**: By transport wit truck from farm to farm there is a great risk of transmission of diseases. Therefore, it is important to make sure all vehicles (incl. the wheels) are well disinfected prior entrance to the farm. Optimally, a solution of  $1\,\%$  Halamid® is used prior arrival. Halamid® is interesting to use as solutions are non-corrosive to materials and the product is active even at low temperature.

**Egg disinfection**: Hatching eggs are disinfected with Halamid<sup>®</sup>. The sequence is cleaning, rinsing, disinfection and drying. To prevent absorption of the solutions by the eggshell, the temperature of each step must be a few degrees higher than the previous one. Wash the eggs with a detergent solution at  $30^{\circ}$ C, rinse with clean water at  $35^{\circ}$ C and then dip for 3 min. in a 0.3 % Halamid<sup>®</sup> solution at  $40^{\circ}$ C. Dry afterwards.

PLEASE NOTE THAT DISINFECTION OF CONSUMPTION EGGS IS NOT ALLOWED.



#### Halamid® for horse

- Disinfection of malanders, thrush and ringworm
- · Disinfection of stables, equipment, vehicles, and footbath
- Removes biofilm
- Economical in use
- Does not corrode materials



#### When using Halamid® for horses, the following is recommended:

Halamid<sup>®</sup> covers all possible areas with horses where there is a need to disinfect - stables, equipment, vehicles, and footbath. Halamid<sup>®</sup> is used by spraying, nebulisation or fogging and to remove biofilm.

General disinfection in stables: Meticulous cleaning is a required preliminary step before disinfection to ensure the best results. Without proper cleaning, dirt and organic matter reduce the effect of Halamid<sup>®</sup>. Start by dry cleaning to remove most of the organic matter, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid<sup>®</sup>. Halamid<sup>®</sup> is always applied as an aqueous solution. Dissolve Halamid<sup>®</sup> in clean water at the required concentration (see page 2).



**Surfaces and stable disinfection**: In empty buildings clean thoroughly and disinfect with a Halamid® solution, applied by spraying, nebulization, or fogging. For spraying, use 300 ml/m² of a Halamid® solution at a concentration of 0.5-1 % per 2.5 m² to cover the total surface area incl. walls and ceiling. For fogging, use a Halamid® solution with a recommended volume of 40-50 ml/m³ at a concentration of 2-3 %.

**Water system disinfection**: Safe drinking water is a very important parameter for the animal well-being. When the stables are empty, run a 0.5 % Halamid<sup>®</sup> solution through the water system for 30 min and then rinse with clean water. Halamid<sup>®</sup> can also be used to disinfect drinking water.

**Water purification valve and removal of biofilm**: In stables equipped with a water purification valve, the stable is disinfected with Halamid<sup>®</sup> to remove biofilm through the water purification valve. Use a Halamid<sup>®</sup> solution at a concentration of 2-3 % with a recommended volume of 40-50 ml/m<sup>3</sup>. This has proven not only to be an effective way to disinfect, but also economically advantageous due to the low amount of Halamid<sup>®</sup> used to get the right disinfectant ability.

**Footbath**: Place a footbath at the entrance of each building and everybody must use it. A 2 % Halamid® solution is prepared and refreshed as often as needed, however, at least twice a week.

**Truck disinfection**: By transport wit truck from farm to farm there is a great risk of transmission of diseases. Therefore, it is important to make sure all vehicles (incl. the wheels) are well disinfected prior entrance to the farm. Optimally, a solution of 1 % Halamid® is used prior arrival. Halamid® is interesting to use as solutions are non-corrosive to materials and the product is active even at low temperature.

**Disinfection of malanders, thrush and ringworm**: Among horses with problems with malanders, thrush or ringworm use a Halamid® solution at a concentration of 2 %.



#### Halamid® in sheep and goat farming

- Removes biofilm
- Economical in use
- Disinfection of stables, equipment, vehicles, and footbath
- Does not corrode materials



When using Halamid® for sheep and goats, the following is recommended: Halamid® covers all possible areas in sheep and goat farming where there is a need to disinfect - stables, equipment, vehicles, and footbath. Halamid® is used by spraying, nebulisation or fogging and to remove biofilm.

General disinfection in stables: Meticulous cleaning is a required preliminary step before disinfection to ensure the best results. Without proper cleaning, dirt and organic matter reduce the effect of Halamid<sup>®</sup>. Start by dry cleaning to remove most of the organic matter, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid<sup>®</sup>. Halamid<sup>®</sup> is always applied as an aqueous solution. Dissolve Halamid<sup>®</sup> in clean water at the required concentration (see page 2).



**Surfaces and stable disinfection**: In empty buildings clean thoroughly and disinfect with a Halamid<sup>®</sup> solution, applied by spraying, nebulization, or fogging. For spraying, use 300 ml/m<sup>2</sup> of a Halamid<sup>®</sup> solution at a concentration of 0.5-1 % per 2.5 m<sup>2</sup> to cover the total surface area incl. walls and ceiling. For fogging, use a Halamid<sup>®</sup> solution with a recommended volume of 40-50 ml/m<sup>3</sup> at a concentration of 2-3 %.

**Water system disinfection**: Safe drinking water is a very important parameter for the animal well-being. When the stables are empty, run a 0.5 % Halamid<sup>®</sup> solution through the water system for 30 min and then rinse with clean water. Halamid<sup>®</sup> can also be used to disinfect drinking water.

**Water purification valve and removal of biofilm**: In stables equipped with a water purification valve, the stable is disinfected with Halamid<sup>®</sup> to remove biofilm through the water purification valve. Use a Halamid<sup>®</sup> solution at a concentration of 2-3 % with a recommended volume of 40-50 ml/m<sup>3</sup>. This has proven not only to be an effective way to disinfect, but also economically advantageous due to the low amount of Halamid<sup>®</sup> used to get the right disinfectant ability.

**Footbath**: Place a footbath at the entrance of each building and everybody must use it. A 2 % Halamid® solution is prepared and refreshed as often as needed, however, at least twice a week.

**Truck disinfection**: By transport wit truck from farm to farm there is a great risk of transmission of diseases. Therefore, it is important to make sure all vehicles (incl. the wheels) are well disinfected prior entrance to the farm. Optimally, a solution of  $1\,\%$  Halamid® is used prior arrival. Halamid® is interesting to use as solutions are non-corrosive to materials and the product is active even at low temperature.



#### Halamid® for pets

- Disinfection of cages and equipment
- Removes biofilm
- Does not corrode materials



#### When using Halamid® for pets, the following is recommended:

Halamid<sup>®</sup> covers all possible areas where there is a need to disinfect - stables and equipment. Halamid<sup>®</sup> is used by spraying, nebulisation or fogging and to remove biofilm.

**General disinfection of cages**: Meticulous cleaning is a required preliminary step before disinfection to ensure the best results. Without proper cleaning, dirt and organic matter reduce the effect of Halamid<sup>®</sup>. Start by dry cleaning to remove most of the organic matter, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid<sup>®</sup>. Halamid<sup>®</sup> is always applied as an aqueous solution. Dissolve Halamid<sup>®</sup> in clean water at the required concentration (see page 2).



**Surfaces and stable disinfection**: In empty buildings clean thoroughly and disinfect with a Halamid<sup>®</sup> solution, applied by spraying, nebulization, or fogging. For spraying, use 300 ml/m<sup>2</sup> of a Halamid<sup>®</sup> solution at a concentration of 0.5-1 % per 2.5 m<sup>2</sup> to cover the total surface area incl. walls and ceiling. For fogging, use a Halamid<sup>®</sup> solution with a recommended volume of 40-50 ml/m<sup>3</sup> at a concentration of 2-3 %.

**Water system disinfection**: Safe drinking water is a very important parameter for the animal well-being.

**Footbath**: Place a footbath at the entrance of each building and everybody must use it. A 2 % Halamid® solution is prepared and refreshed as often as needed, however, at least twice a week.



#### Halamid® in aquaculture farming

- Controls Bacterial Gill Disease and external columnaris
- Controls Gyrodactylus and Amoebic Gill Disease
- Controls IPN- and ISA-virus
- Disinfection of Artemia nauplii
- Eliminates unwanted bacteria and parasites
- No negative effect on nets made of Polyamide



#### When using Halamid® in aquaculture farming, the following is recommended:

Aquaculture needs an universal and versatile disinfectant to ensure the best health and hygiene status. Disinfection of tanks and ponds, nets, equipment, well boats and in the fish processing industry ensures that pathogenic microorganisms (bacteria, viruses and parasites) are rapidly and effectively destroyed.

Halamid® is the perfect disinfectant to use for high hygiene in aquaculture farming against pathogenic bacteria, such as the ones responsible for Bacterial Gill Disease (BGD) or external columnaris. Halamid® is also useful against many parasites related to the aquaculture industry, for example the Gyrodactylus and Neoparamoeba pemaquidensis (Amoebic Gill Disease) parasites.

The safety margin between the concentration effective against microorganisms and the one toxic for fish makes Halamid<sup>®</sup> of special interest in aquaculture, because Halamid<sup>®</sup> has a high safety margin, thus making the product safe to use.

**General disinfection in aquaculture farming**: Meticulous cleaning is required before disinfection to ensure the best results. Start by dry cleaning, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid<sup>®</sup>. Halamid<sup>®</sup> is always applied as an aqueous solution. Dissolve Halamid<sup>®</sup> in clean water at the required concentration (see the next page).

**Tank disinfection**: During production stops, it is of major importance to carefully clean and disinfect tanks when they are empty to avoid contaminating the next production lot. Start by cleaning to remove the organic matter and then disinfect by spraying or rinsing with a 1 % Halamid<sup>®</sup> solution (or with a 2 % in case of heavy contamination).

**Equipment disinfection**: Spray all equipment used with a 1 % Halamid<sup>®</sup> solution or dipped the equipment into the Halamid<sup>®</sup> solution for 30 min. Halamid<sup>®</sup> is recommended by the OIE for disinfection of equipment against Gyrodactylus and is also acknowledged by the OIE for the efficiency against IPN- and ISA-virus.

**Net disinfection**: Nets should not only be cleaned between each production cycles but also disinfected. Use a 1-2 % Halamid<sup>®</sup> solution for net disinfection, with a contact time of 30 min. Compatibility of aquaculture net made of Polyamide 6 with a Halamid<sup>®</sup> solution was tested by a polyamide manufacturer and the results indicate that Halamid<sup>®</sup> does not have any negative effect on the net properties.

**Well boat disinfection**: Insufficient well boat disinfection is believed to be responsible for spreading of several pathogenic microorganisms - e.g. the IPN virus in Norway. This underlines the need to apply a strict hygiene management on well boats. Well boats must be disinfected with a 1-2 % Halamid® solution between each transport. Rinsing with water may be required to remove residual Halamid®.

**Water treatment**: Halamid<sup>®</sup> reduces the pathogenic microorganisms' level in pond's water and is especially useful against bacteria and parasites.

**Fresh water raceway set up**: Halamid<sup>®</sup> is added at a concentration of approx. 10-20 ppm (10-20 g/m³). After 1 hour, flush with fresh water to remove residual Halamid<sup>®</sup>. This can be repeated up to 4 times on consecutive or alternate days.

**Stagnant freshwater ponds**: Halamid<sup>®</sup> is added at a concentration of 3 ppm (3 g/m<sup>3</sup>) once a week. Water pH and hardness are two important parameters to consider to optimize the Halamid<sup>®</sup> concentration. Generally, with acidic pH, a lower concentration should be used and with increasing water hardness, a higher Halamid<sup>®</sup> concentration is recommended.

If using a biofilter in a recirculated water system - contact Jorenku A/S for more info.

**Artemia disinfection**: Halamid<sup>®</sup> is recommended by the FAO for disinfection of Artemia nauplii at the concentration of 60 ppm with a contact time of 3 min followed by rinsing with clean water.

**Fish egg disinfection**: To reduce surface contamination, fish eggs can be dipped in a 1 g/l Halamid<sup>®</sup> solution for 10 min followed by a clean water wash.

**Fish hobbyists**: Halamid<sup>®</sup> is widely used by fish hobbyists against external bacteria and parasites. It is for example particularly useful against external flukes in koi fish. Water hardness as well as pH are two important parameters to consider when adapting the concentration to the right conditions.



### Halamid<sup>®</sup> for garden centres, fruit and vegetables, store- and cold rooms

- Disinfection of greenhouses, equipment, vehicles, and footbath
- Removes biofilm
- Economical in use
- Does not corrode materials

### When using Halamid® for garden centres, fruit and vegetables, store, and cold rooms the following is recommended:

Halamid® is effective against many bacteria, viruses, and fungi that are related to greenhouses.

Microorganisms are responsible for both qualitative and quantitative losses in the horticulture market. Pathogenic microorganisms are easily spread from plant to plant via contaminated tools and equipment, or from crop to crop if the greenhouse is initially infected.

To avoid spreading of bacteria and viruses due to infected tools and equipment, growers can rely on Halamid<sup>®</sup> for its wide activity spectrum and because it does not damage materials.

Tomato growers will appreciate the proven efficacy of Halamid® against the Pepino Mosaic virus.





**General disinfection**: Meticulous cleaning is a required preliminary step before disinfection to ensure the best results. Without proper cleaning, dirt, and organic matter reduce the effect of Halamid<sup>®</sup>.

**Method**: Start by dry cleaning to remove most of the organic matter, followed by cleaning with water or a detergent solution. Once it is done, disinfect with the indicated solution with Halamid<sup>®</sup>. Halamid<sup>®</sup> is always applied as an aqueous solution. Dissolve Halamid<sup>®</sup> in clean water at the required concentration (see below).

**Surfaces and greenhouse disinfection**: In empty buildings clean thoroughly and disinfect with a Halamid® solution, applied by spraying, nebulization, or fogging. For spraying, use 300 ml/m² of a Halamid® solution at a concentration of 0.5-1 % per 2.5 m² to cover the total surface area incl. walls and ceiling. For fogging, use a Halamid® solution with a recommended volume of 40-50 ml/m³ at a concentration of 2-3 %.

**Truck disinfection**: By transport wit truck from farm to farm there is a great risk of transmission of diseases. Therefore, it is important to make sure all vehicles (incl. the wheels) are well disinfected prior entrance to the farm. Optimally, a solution of 1 % Halamid® is used prior arrival. Halamid® is interesting to use as solutions are non-corrosive to materials and the product is active even at low temperature.

**Footbath**: Place a footbath at the entrance of each building and everybody must use it. A 2 % Halamid® solution is prepared and refreshed as often as needed, however, at least twice a week.

**Food and beverage industry**: After preliminary cleaning, disinfect with a 0.3-0.5 % (3-5 g Halamid® per litre) Halamid® solution. Halamid® is either sprayed with a traditional spray gun or applied with a brush or mop. In any case, dissolve the required amount of Halamid® in water (if possible lukewarm) and stir until dissolved. Halamid® can also be used in flushing systems (CIP). It is possible for several days to store a Halamid® solution, if it is produced with clean water and stored away from light and heat. Halamid® destroys microorganisms by creating an irreversible oxidation so that no resistance builds up, unlike certain quaternary ammonium compounds. Halamid® has a mild scent and is easily rinsed off all surfaces.

**Public and private areas**: disinfect with a 0.3-0.5 % (3-5 g Halamid® per litre) Halamid® solution depending on the cleanliness of the surface. Use the higher concentrations for porous and rough surfaces such as wood and concrete. Halamid® is either sprayed with a traditional spray gun or applied with a brush or mop. In any case, dissolve the required amount of Halamid® in water (if possible lukewarm) and stir until dissolved.



