



Offshore dosing unit, with Hadex polycans



Drinking water

The importance of water to life is self-evident. Water is the basis of our lives. However, water is also one of the major sources of infection, and the cause of many forms of illness. Bacteria, algae and other micro-organisms can develop extremely quickly in water and, just like food, water deteriorates. The purity of drinking water aboard ships, for example, cannot be taken for granted. Hadex ensures that drinking water is safe.

Hadex®

Hadex is a safe, effective and easily applied product, especially intended for disinfecting drinking water in tanks and pipelines. Hadex also keeps the drinking water in good condition.

Hadex is ready for immediate use as delivered. Hadex is a liquid product which mixes quickly and easily with water. Because of the longer term working of Hadex in water, it also disinfects the tank(s), pipelines and water fed equipment.

Drinking water once treated with Hadex remains fit for consumption. It is approved as a continuous disinfectant in drinking water. In this way, Hadex prevents water wastage and saves time, as against other disinfecting agents which are harmful, dangerous and/or difficult to dose. Hadex starts disinfecting immediately, and the water is ready for consumption after a short

period of only 30 minutes. We recommend the water to be examined periodically for bacteriological quality, certainly in the case of new installations or when repairs have been carried out. We can arrange the sampling, analysis and reporting, which are carried out according to official standards.

Hadex treatment is based on the tried and tested use of chlorine in the preparation and final treatment of drinking water. Hadex treatment combines this traditional practice with a number of important advantages, meeting the highest standards set for a drinking water disinfectant!

What standards should one expect off an effective drinking water disinfectant?

- 1 It should swiftly destroy any harmful organisms, and should remain active for a sufficiently long period.
- 2 It should have no adverse effects on water quality, and should not allow the water to become corrosive.
- 3 It should be cost-effective per cubic metre of water treated.
- 4 It should be simple and, above all, safe in transport, storage and use.
- 5 It should be immediately and easily soluble in water.

Hadex meets all these standards! It is easily stored, and

has a shelf life of at least one year under normal conditions ($t = 25\text{ }^{\circ}\text{C}$). If Hadex is stored cool ($t = < 6\text{ }^{\circ}\text{C}$) it has a shelf life of at least three years. Other products have a shorter shelf life.

For example, industrial sodium hypochlorite loses about 30% of its effectiveness after storage for 30 days at $30\text{ }^{\circ}\text{C}$! This can cause great difficulty in accurate dosing, leading to a dosage which is either too high or too low. Furthermore, the corrosive properties of sodium a.o. calcium hypochlorite can create difficulties and even danger in storage and transport.

Hadex is a very pure, stable and safe product, which facilitates swift and accurate dosing. Hadex has been tested and approved by a number of (maritime) authorities in the Netherlands and abroad. For example, it has been approved by the Dutch Ministry of Health (CTB registration No. 9574 N), the Dutch Directorate General for Shipping and Maritime Affairs - Shipping Inspection Division NSI (NL), DOT (UK), NMD (Norway), GL (Germany) and NATO.

Hadex is available from a large number of suppliers, including pharmaceutical distributors, outdoor activity and water sport stores, ship's chandlers and agents. For the individual traveller Hadex comes in handy 25 ml bottles. Specially for shipping and offshore applications, Hadex is available in 2 1/2, 10 and 25 litre polycans





Dosing with Hadex®

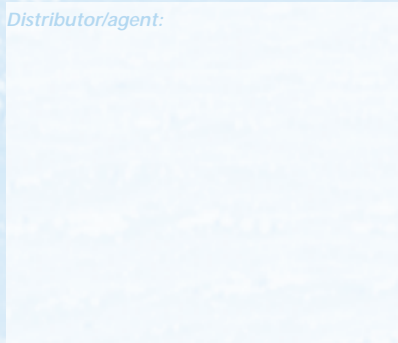


25 ml. bottle for individual use



Standard dosing unit

Distributor/agent:



HATENBOER -WATER

Hatenboer-Water b.v.
 Mercuriusweg 8
 3113 AR Schiedam
 P.O. Box 6013
 3002 AA Rotterdam
 The Netherlands
 Phone [31] 10 409 12 00
 Fax [31] 10 409 12 10
 e-mail info@hatenboer-water.com
 internet www.hatenboer-water.com

There are three (3) standard dosages for drinking water treatment in most situations. After the prescribed working time, drinking water treated with Hadex is ready for drinking. Any odour or taste difference occurring will disappear within a few days. Hadex can be added simply to the water through the filling pipe (flush afterwards with drinking water) or through the tank opening. An automatic and accurate Hadex dosing unit is also available. Please contact us for any further information about Hadex and/or other drinking water treatment systems.

1 Normal dosage

The normal dosage of Hadex is only 1 litre Hadex: 50 m³ (50,000 litres) of drinking water. This dosage is intended for the reduction and prevention of growth of bacteria, algae and other micro-organisms. The water to be treated should be clear and of a normal quality, meeting the usual public health requirements. This dosage meets the standards laid down by the DSI/DOT/NMD and other maritime authorities.

Hadex contains < 50,000 mg (< 50 gm/dm³) active chlorine per litre of product. This results in a theoretical concentration of ± 1 mg/litre total chlorine after addition of 1 litre: 50 m³. However, in practice, the free chlorine measurement after dosing will come out at ± 0,5 mg/litre (ppm), dependent on the water quality (organic matter, pH, etc.). An accurate testing kit, complete with instructions for use, is available.

Hadex should be added regularly to the water. As a rule, it should be added during each bunkering, dependent on the amount of fresh water being bunkered, or every 2 weeks (in areas with a warm climate), up to a maximum of every 4 weeks.

2 Extra dosage

The extra Hadex dosage is 1 litre Hadex : 25 m³ (25,000

litres) of drinking water. This dosage can be applied where the water is of inferior or doubtful quality. It can also be applied when the water contains an abnormal amount of floating particulate and filtration is not possible. The presence of particulate can promote bacteria growth; Hadex helps prevent this.

3 High dosage (shock treatment)

High dosage is 1 litre Hadex : 5 m³ (5,000 litres) of drinking water. This should be applied when treating drinking water under epidemic conditions and/or when the water is suspected of being infected. For example, where people have gastric or intestinal complaints, or after tests have indicated that the water is polluted. This sort of situation is more likely to occur in high-risk, tropical areas. For additional advice, consult a medical expert or your Hadex supplier.

High dosage (shock treatment) should also be used as an initial treatment for the disinfection of tanks and pipelines after repairs or renewals. For details of this treatment, please read the following instructions.

Procedure for shock treatment after repairs or renewals.

Before the drinking water in a repaired or renewed system is potable, the whole system should be cleaned thoroughly. The coating of an existing tank should be inspected and, when necessary, repaired or renewed. Allow sufficient drying out time. Visible contamination should be removed from the tank, after which the tank should be flushed with drinking water, which should subsequently be discharged. The tank may then be filled with water treated with Hadex (dosage 1 litre Hadex : 5 m³ drinking water) until the tank starts overflowing. When necessary, 30 minutes after Hadex dosing leave all drinking water taps open for 15 minutes to ensure that the pipework

system has been flushed clean. After allowing the water to stand in the tank for a minimum of 6 hours, this should be pumped out for disposal; the tank may not be entered after this. The tank may then be filled with fresh drinking water and the normal Hadex dosage should be added (1 litre : 50 m³). We recommend a water analysis to be carried out to check the water quality.

Safety

Hadex may be transported and stored without any special safety precautions. It is classified as 'non-restricted' cargo by IATA and therefore may be transported by normal airfreight. This means that it can be supplied quickly, worldwide. Hadex must be transported and stored in its original packing. Hadex may be used only in accordance with the dosages and applications prescribed. It may not be mixed or used in combination with any other chemical or agent. While Hadex is a safe product, avoid contact with the eyes or skin. In its undiluted form, Hadex has an irritating effect on the eyes. In the event of such contact, rinse the eyes thoroughly with clean water and seek expert medical advice. The product will cause toxic gases if it comes into contact with acids. Beware of spots upon clothes (only with concentrated product). Hadex is not inflammable or explosive.

Hadex has been in use to good effect since 1979, not only by shipping lines, the offshore industry and shipyards, but also by international aid organisations. Hadex is suitable for treating drinking water anywhere, on land or at sea.

A stock of Hadex can ensure that immediate action can be taken whenever pollution occurs. A regular dosage in the water supply will prevent any microbiological growth and guarantee a high quality of drinking water.