Manufactured in Germany

WATCHER® WATCH WATER a Water Company

FILTERSORB
FILTRATION
ADSORPTION
INSTANT PRODUCTS
OXY TREATMENT
SYSTEMS

NITRO TRAPP

SELECTIVE NITRATES ADSORPTION & DESORPTION

INTRODUCTION

Adsorber Division is a core business of **Watch Water®**. One of the largest specialty Water Treatment companies, as it focusses strongly on Filtration and Adsorber products.

These include Katalox-Light, Crystolite, Zeosorb, Catalytic Carbon, Titansorb, Ferrolox, TRAPPSORB and among others.

Watch Water® Systemsis eadquartered in Germany with representation in the USA, Australia, central and sout America, Asia, and Africawith having customers in more than 70 countries.

APPLICATION

- Muncipal Systems
- Point-of-Entry (POE)
- Point-of-Use (POU)
- Aquafarm's & Fish Farming
- Waste Water
- Nitrate Removal From Drinking Water

NitroTrapp® is the first high-capacity adsorber and de-adsorber for selective nitrate removal. It has 5 times higher capacity than any other commercially available adsorber in the market.

NitroTrapp® is certified and has been specially manufactured to meet Drinking Water standards and has passed,

- Taste and Odor tests
- 100% De-adsorption test

ENVIRONMENT
MAXIMUM ACCEPTABLE CONCENTRATION (MAC)
10MG NO3-/LITER

HEALTH PROTECTION

Adsorber division of **Watch Water®** has developed the **NitroTrapp®** adsorber and Deadsorber to remove nitrates fromwater and waste water. Nitrate is the most common contaminant of 21st century related health problems.

MEMBER Water Quality ASSOCIATION

PREMIUM QUALITY
MADE IN GERMANY

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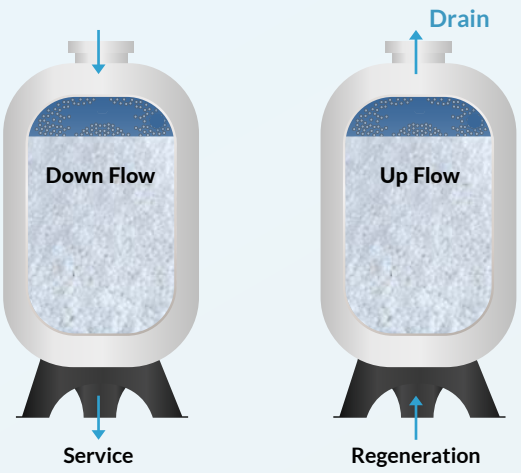
NITRO PACKED BED



SIMPLE DESIGN, POWERFUL RESULTS NITROTRAPP FOR EFFORTLESS NITRATE REMOVAL

NEW METHOD OF PURIFYING WATER

The only method of purifying any water containing Nitrates.

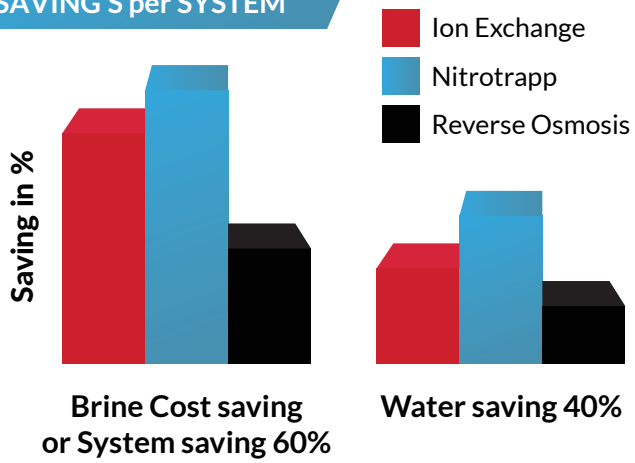
1. Water flows through NitroTrapp® to remove nitrates. Regeneration with a safe brine solution allows reuse. Brine wastewater would be valuable Fertilizer solution.
2. Rinsing the Adsorber of residual with deadsorb solution by passing five bed volumes of clean water through the Adsorber. The rinse water is either feed water or purified feed water without **NITRATES.**
3. And now this feed water can be; ground water, surface water, agriculture field drainage, process feed water for food + beverage, process waste water, water from aquarium's or fish farms. The concentration of Nitrates in the feed water can be up to 1000 mg/l or ppm. The concentration of Nitrates in the feed water is reduced to 99% or more. The waste water is 100% commercial fertilizer.

DETAILS OF INNOVATION

NitroTrapp® offers unique advantages over other nitrate removal systems. The custom designed adsorber removes not only nitrates from drinking water, but also provides healthy bicarbonates. "This can't be achieved simply by any other media, which are based on Ion Exchange or Reverse Osmosis." Anion exchange for nitrate removal is similar to a water softener, where relatively large amount of sodium chloride are typically used as follow's.

*Eight equivalent of sodium chloride (NaCl) to remove one equivalent nitrate from resin Relatively large waste volumes, which are very difficult to dispose. "Spent brine from water softeners and nitrate removal systems cannot be disposed to waste water plants in the future." Reverse Osmosis with nitrates will absolutely be forbidden in the future. NitroTrapp® : Simplicity Meets Performance – The Future of Nitrate-Free Water

SAVING'S per SYSTEM



APPLICATION-NITRATE REMOVAL

The only method of purifying any water containing Nitrates.

- NR1 product for point of use cartridges
- Ideal for resident Point-of-Entry systems
- Has been specially prepared to use for Municipal systems
- Nitrate removal from drinking water
- Nitrate removal from aquarium and fish farming water
- Nitrate removal from waste water.

FROM FARMLAND TO FAUCET – STOPPING NITRATE CONTAMINATION AT THE SOURCE

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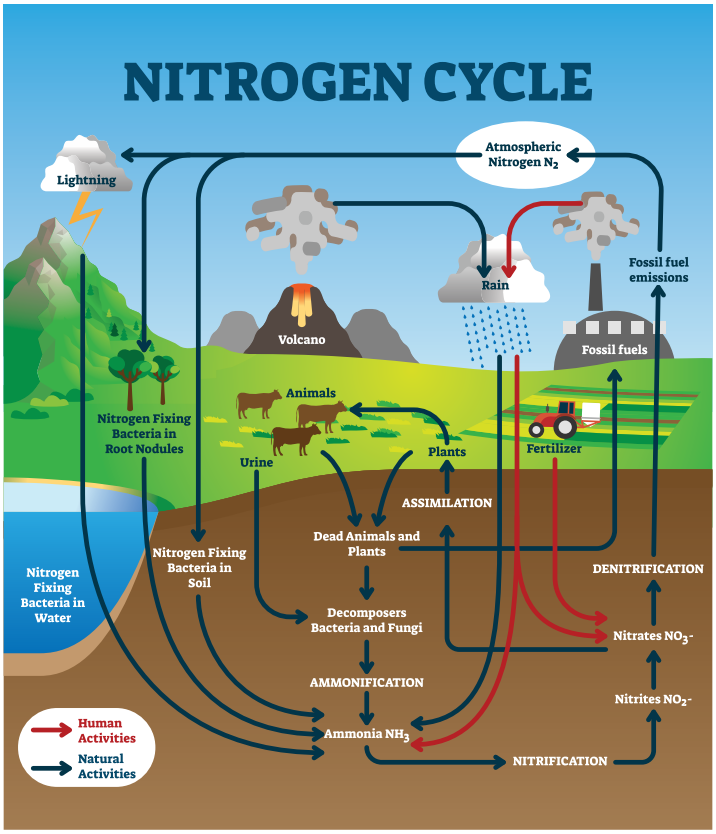
INTRODUCTION

Many different parts of the world have been facing the problem of Nitrate contaminated surface and ground waters. Half of the world population that is three billion people, including 500000 infants are consuming drinking water with Nitrate concentrations over the Maximum Contaminant Level (MCL) of the 10 mg NO3-/L

Significant sources of Nitrate in water include nitrate-based chemical fertilizers decaying vegetable and animal and human waste, domestic efficient (sewage sludge disposal and industrial discharge) atmosphere washout, septic systems, pesticides and waste contamination through storm and urban runoff of these synthetic fertilizers are the major contribution to water contamination. All these products can be converted to Nitrate through a series of bacterial reactions collectively known as Nitrification.



In the Nitrification process bacteria degrade nitrogen-containing compounds and release ammonia. Some bacteria such as Nitrosomonas can oxidize the released ammonia to nitrite and other bacteria such as Nitrobacteria further oxidize the nitrite to nitrate.

NITRATE HEALTH ISSUES

Nitrate is one of the most common groundwater contaminants in rural areas. It is regulated in drinking water primarily because excess levels can cause methemoglobinemia, or **"blue baby syndrome"** disease. in which blood lacks the ability to carry sufficient oxygen to the individual body cells causing the veins and skin to appear blue. Nitrate do indicate the possible presence of other more serious residential or agricultural contaminants, such as bacteria or pesticides.

Cancer. Nitrate is converted to nitrite after ingestion, This nitrite reacts with both natural and synthetic organic compounds to produce N- Nitroso compounds in the human stomach. Many of these N-Nitroso compounds are carcinogenic in humans with high nitrate levels in drinking water may increase cancer risks.

FORMULATION

NitroTrapp® media is Bead-like-Material that traps Nitrate ions from liquid and water.

NitroTrapp® is a deadsorable or in other words a reversible process in which Nitrate ions from insoluble permanent solid medium are exchange for healthy ions. **NitroTrapp®** beads are based on very selective chemical and physical properties of both beads and ions. However, **NitroTrapp®** with higher selectivity for Nitrate and none of the other competitive ions like sulfate, silicates, phosphate or bicarbonates.

NitroTrapp® beads are selectively manufactured in chloride form but can be regenerated with following available salts

- Potassium Chloride
- Magnesium Chloride
- Magnesium Bicarbonate or
- Potassium & Magnesium Hydroxide

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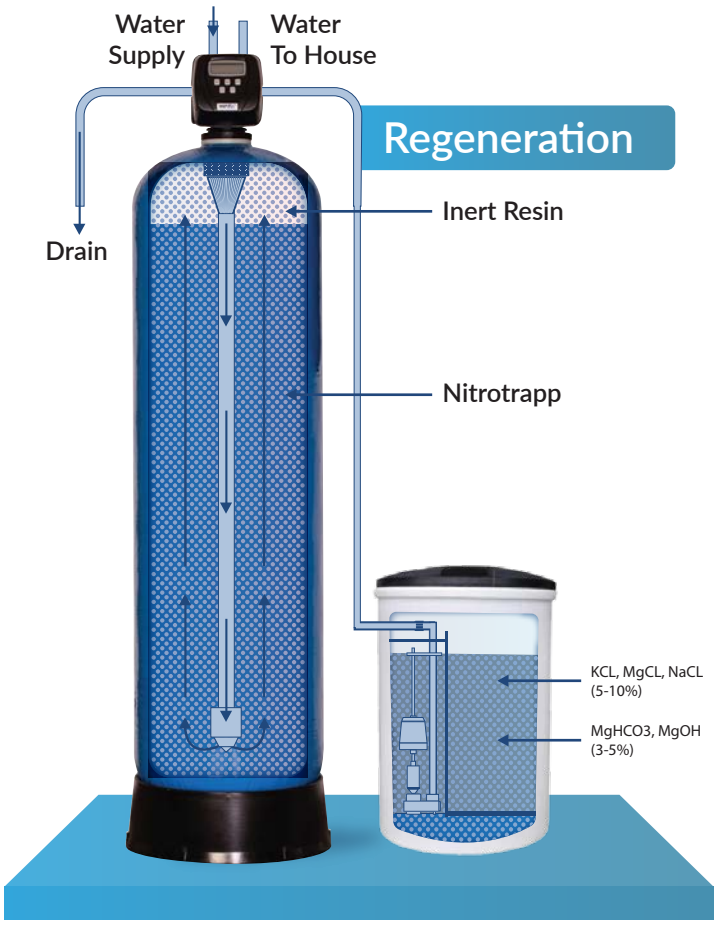
NitroTrapp® has been introduced by **Watch Water® Germany** as a Nitrate Removal Technology and approved as a Best Available Technology **BAT** for Nitrate Removal from drinking water. It is not regenerated by sodium chloride there is no need of waste water treatment plant. Total annual costs operation, maintenance and salt of the **Watch Water®-NitroTrapp®** system's is calculated to be **18.5 US cents per 1000 gallons** of drinking water. Rejected Nitrate after regeneration can be sold as fertilizer for **0.50 cents per Gallon** of Magnesium or Potassium Nitrate of nearby farmers or gardens. **Watch Water®** has built several fully automated systems with magnesium chloride regeneration for well head treatment of Nitrate contaminated wells in the world. Complete systems are constructed in a standard **20 feet** or **40 feet** container and can be delivered to the client side. All projects are customer proprietary and such not referenced. In all sites, nitrate concentrations exceeded the MCL and are now being treated to acceptable levels. The waste produced by these systems in a range of **0.1-0.2%** which is quite low and valuable for Agriculture Horticulture.



OPERATING PARAMETERS	
Service Flowrate	40 – 60 BV/H
Rinse Flowrate	Same as service flowrate or 10 – 30 BV/h
pH Range	0 – 14 (Operating: 4.5 - 8.5)
Appearance	White to light yellow opaque spheres
Particle Size	0.39 – 1.30 mm
Moisture	46%-56%

Standard Packaging

Packging	Weight of product	Quantity/ pallet	Gross Wt./ pallet
Drum (60 L)	40 kg	18	808 kg

★ *Other packaging can be considered on request*

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