

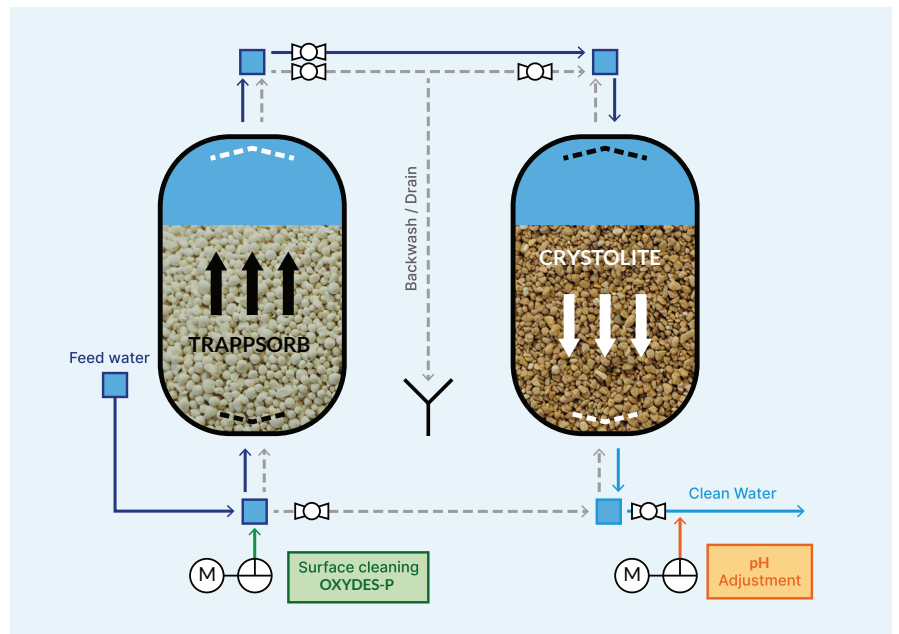
# TRAPPSORB®

## ADSORBENTS FOR WATER TREATMENT

**TRAPPSORB®** is an adsorber filter material, which is the purest form of **MAGNESIUM OXIDE (MgO) BEADS** with a unique outer surface and structure. **TRAPPSORB®** is porous, amorphous form of MgO. It's unique manufacturing process gives it uniformity and macroscopic pores.

### ACTIVATED ADSORBER

Word activated is well known in water treatment industry. To activate any surface, product has to be treated with high temperature. For the conversion of Magnesium Hydro-Oxide to, the surface has been treated with 400°C to obtain Activated Adsorber.



### REMOVAL OF



Ammonia



Boron



Hydrogen Sulfide



Heavy Metals



Phosphorus



Total Suspended Solids



Silica

Adsorber Division is a core business of **Watch Water®**, which is one of the largest innovative Water Treatment Companies, has its focus strongly on Filtration and Adsorber products.

These include **KATALOX-LIGHT**, **CRYSTOLITE**, **ZEOSORB**, **CATALYTIC CARBON**, **TITANSORB**, **FERROLOX** and among others.



NSF/ANSI /  
CAN 60



PREMIUM QUALITY  
MADE IN GERMANY

**TRAPP SORB**

**FILTERSORB  
FILTRATION  
ADSORPTION  
INSTANT PRODUCTS  
OXY TREATMENT  
SYSTEMS**

**ACIDTRAPP**  
pH Correction, Neutralization

**CARBONTRAPP**  
Capturing of CO<sub>2</sub>

**CORRTRAPP**  
Corrosion Prevention

## WHAT IS TRAPPSORB<sup>®</sup>?



Each **Trappsorb<sup>®</sup>** bead is only a few microns across to be of use in fixed bed Adsorption process. It is necessary to form beads in the range of 1.2 - 3.4 mm in diameter. Within the above range a wide selection of **Trappsorb<sup>®</sup>** beads sizes can be produced to suit the specific needs of the customer.

The information gained from last 40 years of research has shown that the usage of Bead Shaped bodies of the Adsorber columns is the optimal solution due to the outstanding mechanical characteristics and excellent Adsorption rate properties.

## STRUCTURE AND COMPOSITION OF TRAPPSORB<sup>®</sup> BEADS

### THE PUREST ABSORBER

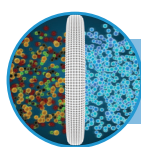
At present, commercially available filtration media's based on magnesium oxide in the form of granules contains impurities which produce water with these impurities. The drinking water industry has required a high purity magnesium oxide to use as a pretreatment media for the removal of suspended solids, heavy metals and removing all types of acids from water. The purest magnesium oxide now in the form of is available in the water treatment industry. The **Trappsorb<sup>®</sup>** produced by **Watch Water<sup>®</sup>** is 99.99 % pure MgO + CaO free-flowing uniform beads.

**Trappsorb<sup>®</sup>** is a porous, amorphous form of Magnesium (MgO). Although it has the same chemical composition as granular products, it radically different to other MgO-based materials due to its unique outer surface and structure, it is composed of a unique manufacturing process giving it's uniformity and Macroscopic pores. As opposed to granular MgO, **Trappsorb<sup>®</sup>** have larger pores with a wide range of diameters. To ensure drinking Water Quality, All Adsorber division products are certified by WQA to meet ANSI/NSF 61 standard.

**Trappsorb<sup>®</sup>** porous outer surface, when exposed to liquids, exhibit a strong physical affinity for these fluids (Physisorption). The molecules of Ionic bounding in liquids, become trapped on the outer surface of **Trappsorb<sup>®</sup>** macrospores. These molecules are called "Adsorbates" and are "Adsorbed" in the process of Adsorption.

Different surfaces exhibit different Adsorption properties and different molecules are Adsorbed to different capacities. For both, Outer surface and Outer Pores, this "Adsorption Process" is completely reversible. Molecules which have been adsorbed, can be released with slow backwash when reduce in pressure or concentration of molecules. Molecules larger than the pores opening of the molecular sieve can not be adsorbed. Smaller molecules can (Silica, Phosphates, Ammonia) can be adsorbed on **Trappsorb<sup>®</sup>**.

Mesoporous Magnesium Oxide is the world's number 1 product for capturing CO<sub>2</sub> and H<sub>2</sub>S



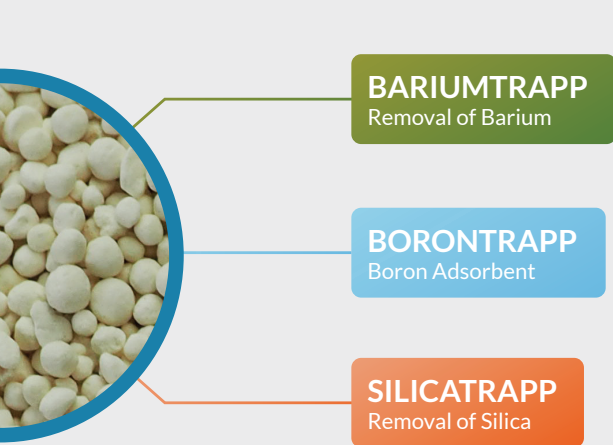
### Filtration

- Filter out suspended solids
- Effective Silica Removal
- Effective Phosphorous Removal
- CO<sub>2</sub> & H<sub>2</sub>S removal



### Prevention

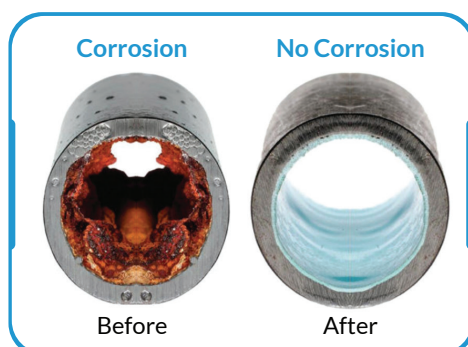
- pH control
- Heavy Metal Precipitation
- Corrosion Control
- Enriching water with healthy minerals



## USAGE OF TRAPPSORB®?

This Brochure describes 10 applications where **Trappsorb®** can be used to purify process water in 10 ways

- ♦ To filter out suspended solids.
- ♦ Due to its high alkalinity, its easy to control the pH without using any chemicals.
- ♦ Remove silica effectively compared to Ion exchange Resin's and Membranes.
- ♦ Remove Phosphorus effectively compared to any other technology available in the Market.
- ♦ Remove CO<sub>2</sub> and H<sub>2</sub>S including Ammonia in the water or wastewater.
- ♦ In the event that Heavy metals are present in the water or waste water, will be able to allow them to precipitate effectively and then extracted followed by **ZEOSORB®** or **CRYSTOLITE** Filter.
- ♦ Controlling Corrosion of the Municipal and Utilities network without adding any Corrosion inhibitors and through coating the inner surface
- ♦ The simplest process of enriching water with Mg<sup>2+</sup> ions to be salinated and softened water. of the pipes with Magnesium Hydroxide. No effect on scale.
  - The world health regulations specify that the mineralization of desalinated water must confirm to the following water quality criteria.
  - Mg<sup>2+</sup> ion concentration to the level of 25-30 mg/l
  - Alkalinity content above 100 mg/l as CaCO<sub>3</sub>
- ♦ High purity Magnesium Oxide in water forms a very stable corrosion resistant film which does not break. All results have proved that Magnesium Oxide coatings on surface are without the addition of any Anti-scalants and corrosion inhibitors.
- ♦ Solve all scaling problems in waste water tanks with its long-lasting alkalinity/pH control.



## Mechanism Plus

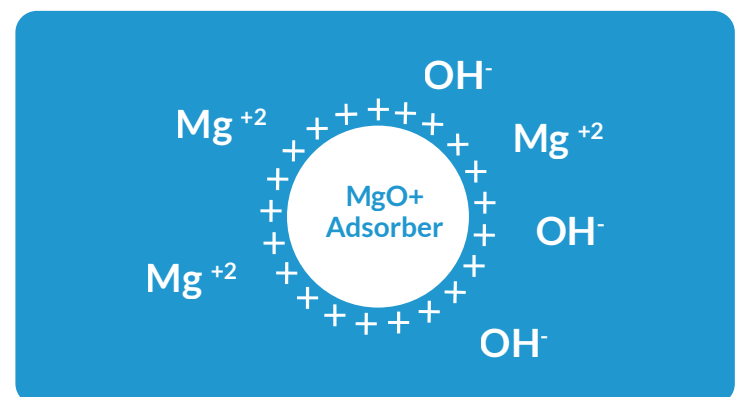
- Adsorption
- Ion Exchange

## Easy and safe to handle since

- Non-Hazardous
- Non-Corrosive
- Non-Toxic

Adding different chemicals to raise pH in water, solutions of sodium hydroxide (NaOH), sodium carbonate (NaCO<sub>3</sub>) or potassium hydroxide (KOH) are typically used. To add chemicals into water or waste water is difficult, problematic and very expensive. A dosing system for household, point of entry and point of use for raising pH in conjunction with another household device is not suitable and does not exist. If there is mechanical failure in the dosing system or if the storage tank containing (NaOH) is not periodically filled, the pH of the feed water will revert to the feed water pH.

For heavy metal's removal application, this means the consumer will drink water with lead, copper, zinc, nickel and will have corrosive and scale in household piping. **Trappsorb®** will help the whole water treatment industry to get rid of expensive closing system's and using unhealthy caustic solution's to raise pH. The **Trappsorb®** media is an adsorber media, meaning Trapping (see fig. 1).



Positive ion's from the water to remove heavy metal's by a mechanism of adsorption and releasing OH<sup>-</sup> Ions to increase move specifically, by predominantly adsorption or predominantly Ion-Exchange. The **Trappsorb®** media is nonbonded particulate and the material is in the firm of RESIN BEADS. Casted molded material an invention of **Watch Water®** Group.



**FILTERSORB  
FILTRATION  
ADSORPTION  
INSTANT PRODUCTS  
OXY TREATMENT  
SYSTEMS**

## YOU SHOULD KNOW...

**Watch Water®** is a world leader in Adsorbent manufacturing for water purification solutions. With our branches for sales, technical service and representatives and Logistics centers in Seven continents, we are always there to serve you globally. See report on Global Adsorbent Market and **Watch Water®** is one of the major Adsorbent manufacturer

### Note:

Prior to starting the design of Watch-Water® Systems the raw water quality should be reviewed so that appropriate Watch Media and pre-treatment process(es) can be properly selected.

If there is no sufficient raw water quality data, adequate water samples from all sources of supply should be collected and analyzed by state certified laboratory. The water analyzes are dependent on the parameters/contaminants (i.e Organic, Iron and Manganese, Arsenic, Radium, Hardness, pH and etc.) For proper design, please contact us.

## TECHNICAL DESCRIPTION & DATA

**Description:** **Trappsorb®** beads specifically designed for potable water as well as waste water treatment. Removal of Silica, Phosphates, Ammonia, CO<sub>2</sub>, H<sub>2</sub>S and heavy metals. Neutralization of all acidic water as specifically designed for corrosive deionized, soft water and for enriching water with Magnesium and Calcium.

Chemical and Physical Properties	Magnesium Oxide (MgO)	Typical 80 %
	Calcium Oxide (CaO)	10 %
Composition	Proprietary	10 %
	Chemically inert, no metals present	
Bulk Density	1153 – 1275 kg/m <sup>3</sup>	
Granules Size	1.2 - 3.4 mm	
Packaging Standard	28.3 liter/bag*	
Storage	Store in a dry place	
Sizing Trappsorb® Systems	See Watch-Water® Pressure Filter Design and Installation Guidelines.	
Service Velocity	10 m/h	
Backwash Velocity	28-30 m/h	

\* big bags available on request

**Disclaimer :** The information in this publication is based on reliable data and is provided in good faith, without warranty or performance guarantee, as product use conditions are beyond our control. Watch Water GmbH, Germany, does not offer express or implied warranties, including merchantability or fitness for a specific purpose. Users should assess product suitability and performance with their equipment. Specifications may change without notice. Please note that the filter media in this brochure do not eliminate bacteria. Do not use our products with microbiologically unsafe or unknown-quality water without proper disinfection. Watch Water GmbH, Germany, is not liable for consequential or incidental damages, such as lost profits from product use.



### Standard Packaging

Packaging	Weight of product	Quantity/ pallet	Gross Wt./ pallet	Certification
Bag (28 L)	37 kg	25	950 kg	NSF/ANSI/ CAN 60
Bulk Bag (908 L)	1200 kg	1	1225 kg	

\* Other packaging can be considered on request

