ADSORBER DIVISION

WATCH WATER®
WATCH WATER
a Water Company

RED-OXY TREATMENT
FILTRATION
ADSORPTION
FILTERSORB
INSTANT PRODUCTS

ADSORBENTS FOR WATER TREATMENT®

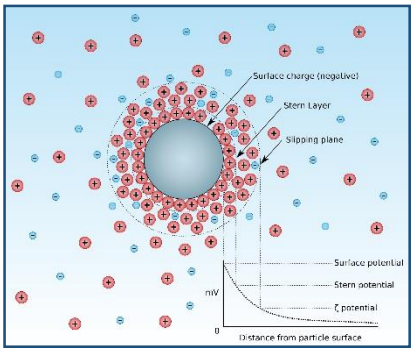
TRAPPSORB

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** and among others.

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 TRAPPSORB®, the surface has been treated with 400 °C to obtain Activated Adsorber.



1

2

Removal of

Ammonia

Boron

Hydrogen Sulfide

Heavy Metals

Phosphorus

Suspended Solids

Silica

and many more...

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ADSORBERS Division

TRAPPSORB®

Each TRAPPSORB® 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 2-5 mm in diameter. Within the above range a wide selection of TRAPPSORB® 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® BEADS

HE PUREST ABSORBER

At present, commercially available filtration media's based on manganese 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 TRAPPSORB® is available in the water treatment industry. **The TRAPPSORB® produced by Watch Water is 99.99% pure MgO + CaO free-flowing uniform bead's.**

TRAPPSORB® is a porous, amorphous form of Magnesium (MgO). Although it has the same chemical composition as granular products, is 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 Macroscope pores. As opposed to granular MgO, TRAPPSORB® have larger pores with a wide range of diameters. To ensure drinking Water Quality, all Adsorber division products are certified by WQA/NSF.

Physics

TRAPPSORB® 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® 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, Phospates, Ammonia ca be adsorbed on TRAPPSORB® . Mesoporous Magnesium Oxide is the world's number 1 product for capturing Co2 and H2S.

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Usage of TRAPPSORB®

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

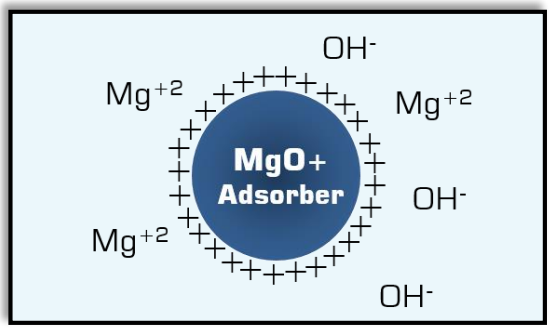
- To Filter out suspended solids
- Due to its high alkalinity, its easy to control the pH without using any chemicals.
- Remove silica effectively compared to Ion exchange Resin's and Membranes.
- Remove Phosphorus effectively compared to any other technology available in the Market.
- Remove CO2 and H2S including Ammonia in the water or wastewater.
- In the event that Heavy metals are present in the water or waste water, TRAPPSORB® 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 of the pipes with Magnesium Hydroxide. No effect on scale.
- The simplest process of enriching water with Mg2+ ions to be salinated and softened water.
    - * The world health regulations specify that the mineralization of desalinated water must confirm to the following water quality criteria.
    - Mg2+ ion concentration to the level of 25-30 mg/l
    - Alkalinity content above 100 mg/l as CaCo3
- 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-scalant's and corrosion inhibitors.
- Solve all scaling problem's in waste water tanks with its long-lasting alkalinity/pH control. Easy and safe to handle since
    - ➢ NON-HAZARDOUS
    - ➢ NON-CORROSIVE
    - ➢ NON-TOXIC

Mechanism

Plus
- Adsorption
- Ion Exchange

Adding different chemicals to raise pH in water, solutions of sodium hydroxide (NaOH), sodium carbonate (NaCO3) 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 feed, 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 figure).



Positive ion's from the water to remove heavy metal's by a mechanism of adsorption and releasing OH- 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.**

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RED-OXY TREATMENT

- REDOXY
- REDOXY-3C
- GREENOXY
- BLACKOXY
- WHITEOXY

FILTRATION

- ZEOSORB
- KATALOX LIGHT
- CRYSTOLITE
- DYNALOX FILTER

ADSORPTION

- ZEOSORB
- KATALOX LIGHT
- CRYSTOLITE
- TRAPPSORB

FILTERSORB

- FILTERSORB SP3
- FILTERSORB CT
- PROXIMA SYSTEM

INSTANT PRODUCTS

- ISOFT CHEMICALS
- OXYDES
- OXYDES-P
- OXYSORB
- BIOXIDE
- SCALE-OVER
- GREEN-ACID

TRAPPSORB®
Technical Description & DATA

Description	TRAPPSORB® beads specifically designed for potable water as well as waste water treatment. Removal of Silica, Phosphates, Ammonia, CO2, H2S 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	Typical Magnesium Oxide (MgO) % 80% Calcium Oxide (CaO) % 10% Proprietary 10% Chemically inert, No metals present
Bulk Density	Grade 2-5 mm and 5-8 mm beads SI 1300 kg/m3 US 81.16 lb/ft^3
Packaging Standard	28.3 liter/bag Big Bags available on Request
Manufacturing Mannheim, Germany	Fahrlachstr. 14 68165 Mannheim Germany
Storage	Store in a dry place.
Sizing of TRAPPSORB® System's	Watch Water Pressure Filter Design and Installation Guidelines.

Note: Prior to starting the design of Watch Water System's 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 + Manganese, Arsenic, Radium, Hardness, pH and etc.) For proper design, please contact us.

To know and learn more about this huge potential of TRAPPSORB® please contact us:

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