



Top design for sustainable, advanced water treatment

SIX

# Resin treatment technology for drinking water

PWN Technologies is a leading company when it comes to developing innovative drinking water technology. We translate our know-how into sustainable solutions for water supply. Our latest solution is called SIX: a new resin treatment technology for drinking water, which has many advantages compared to other ion exchange processes.

### Additional advantages:

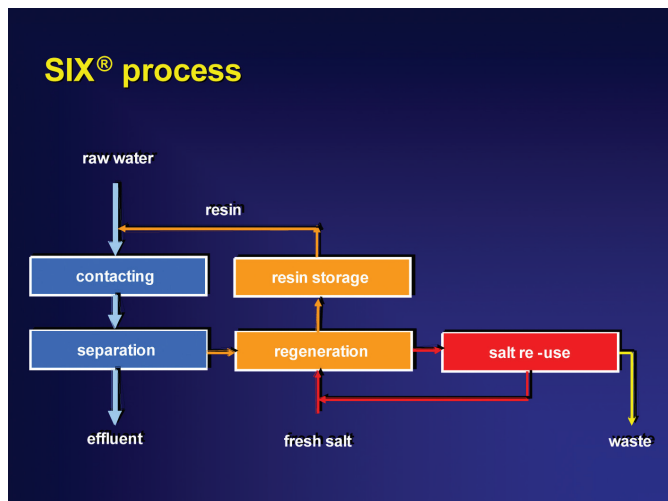
- ▶ No pumps are used to displace the resin, resulting in low attrition rates
- ▶ New sensors are used to control resin concentration and water quality
- ▶ Additional technologies have been developed to reduce salt usage

### Benefits

- ▶ Unit is very compact with a small footprint
- ▶ Model is fully validated
- ▶ Reduced resin inventory
- ▶ Full control
- ▶ 100% regeneration of dosed resin
- ▶ No risk of resin blinding
- ▶ Short resin contact times; no risk of biofouling
- ▶ Low resin attrition; minimal resin loss
- ▶ Can be used with all commercially available resins

### PWN Technologies, partner in water supply

PWN Technologies is a wholly owned subsidiary of PWN Water Supply Company North Holland. PWN supplies water to about 1,7 million people in Holland. PWN Technologies was founded in order to share the impressive R&D programme of PWN Water Supply Company with others. Our revenues are invested in our R&D programmes. This enables us to enhance our position as a leading solution provider.



In the past three years PWN Technologies has developed a new ion exchange process for the direct treatment of water containing high amounts of suspended matter and organics. Such as surface waters.

SIX is a suspended ion exchange process, suitable for purifying untreated surface waters. It involves not just an ion exchange process, but also resin separation and dosing of regenerated resin. In addition SIX includes techniques for reducing the level of salt regeneration. The process design is based on a fully validated model and can be adapted to all commercially available resins.

Only a limited amount of test data is needed to design a pilot or a full size plant. The process can achieve a very high rate of organics removal.

Compared to other ion exchange processes for treating water containing suspended matter and organics, the single pass ion exchange process (SIX) distinguishes itself by compactness, a low resin concentration and inventory, low salt usage, high effluent quality and full control of the adsorption process without blinding the resin or producing biomass. The adsorption of the SIX process has been modeled to such a degree of accuracy that it is possible to design a reliable installation for any commercially available resin based on only a few jar tests. As the resins used have optimal adsorption capacities and rates, the overall performance is unsurpassed.



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