

# Demineralised Solutions

**Demineralisation Solutions from Envirogen are used to produce** pure water and ultra-pure water for a range of applications and markets



## What is Demineralised Water?

Demineralised water, also known as deionised water, is water that has been purified by removing the dissolved minerals and salts such as sodium and chloride. This can be achieved by using ion exchange resins to exchange dissolved charged impurities, for hydrogen and hydroxyl ions, or reverse osmosis membranes that retain the salts and prevent them passing through into the demineralised water. In high purity applications several stages of demineralisation can be used to obtain the required quality

### The Process

A Demineralisation Plant consists of two pressure vessels containing cation and anion exchange resins. Various types of ion exchange resins can be used for both the cation and the anion process, depending on the type of impurities in the water and what the final water is used for.

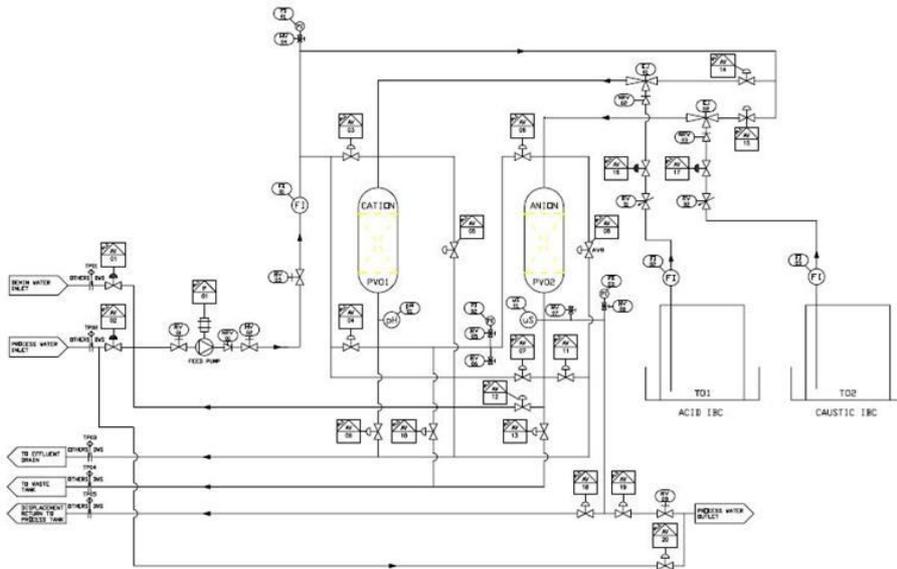
Typically, the cation resin operates in the hydrogen cycle. The cations in the water (i.e. calcium, magnesium and sodium) pass through the cation exchange resin where they are chemically exchanged for hydrogen ions.

The water then passes through the anion exchange resin where the anions (i.e. chloride, sulphate, nitrate and bicarbonate) are chemically exchanged for hydroxide ions. The final water from this process consists essentially of hydrogen ions and hydroxide ions, which is the chemical composition of pure water.

Envirogen have a range of demineralisation plant options depending on application, budgetary requirement, and need

- Co-Current
- Counter Current
- Rapid Regen
- Mixed Bed

## Process Diagram



## Benefits of Envirogen Demineralisation Solutions

A range of demineralisation options

- Co-Current
- Counter-Current
- Rapid Regen
- High Performance
- Lower running costs
- Efficient use of chemicals
- Short cycle options
- Skid mounted
- Pre commissioned
- Fully automatic



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