

# INDION

## Industrial Mixed Bed Deioniser

### Product Description

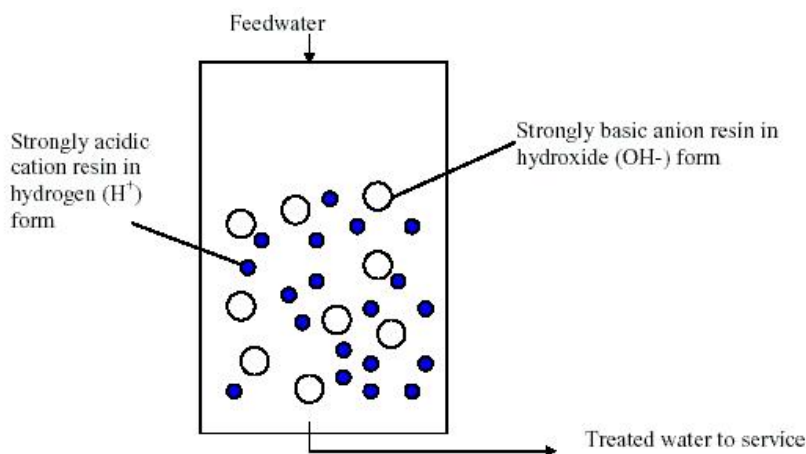
INDION Industrial Mixed Bed Deionisers are designed to produce high purity treated water required by the pharmaceuticals and electronic industries. These deionisers can be used as polishing units after two bed deionisers or directly to obtain high purity water. Mixed Bed Deionisers are single column units, filled with strongly acidic cation and strongly basic anion exchange resins mixed together evenly. Dissolved solids in the water are thus removed, producing water of very high quality - confirming to IP specifications of purified water. The treated water, however is not free from bacteria and pyrogen.

### Working principle

There are four distinct stages in the operation of an industrial mixed-bed deioniser:

- Service/exhaustion
- Backwashing
- Regeneration
- Rinse/remix

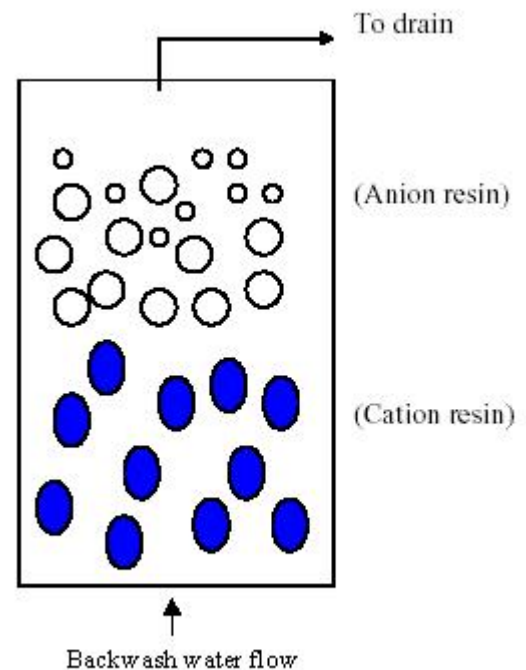
### Service/exhaustion



### Backwashing

Once the resins are exhausted, the bed is backwashed. Backwashing is initiated by introducing a uniform upward flow of water through the resin bed. The backwash step serves two important functions:

Firstly, it expands the resin bed releasing any entrapped particulate matter and resin fines. Secondly, the backwash flow separates the denser cation resin from the lighter anion resin, forming two distinct layers in the vessel.

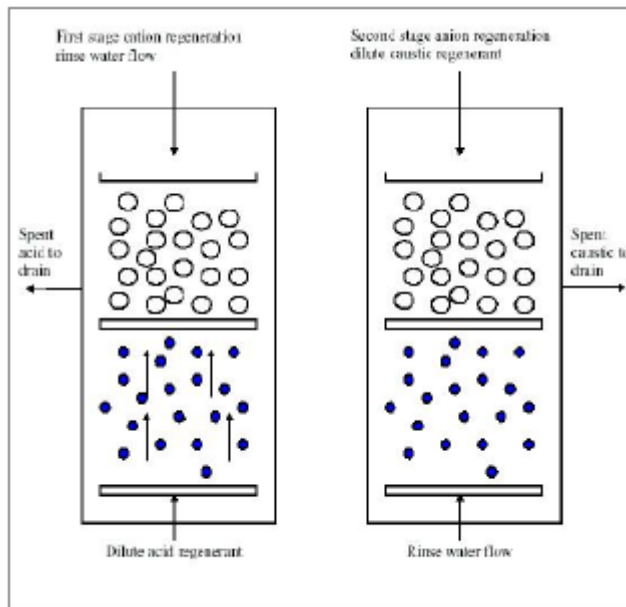


## Regeneration

The first stage in the process of regeneration involves passing a dilute solution of acid, usually hydrochloric, through the cation bed. After the cation resin has been regenerated, the anion resin is regenerated by passing a dilute solution of

caustic (sodium hydroxide) through the anion resin bed. As a result, the cation resin is reconverted to the hydrogen form and the anion resin to the hydroxyl form.

### In-situ Regeneration



## Rinse / Remix

The final stage of regeneration is to rinse the resins of excess regenerant and then remix with air.

## Advantages

- Easy to install
- Simple to operate
- Complete with regeneration equipment and control
- Produces deionised water of very high purity, confirming to IP specifications.