



CS pure water preparation

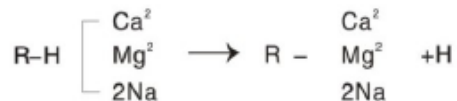
CS application and principle:

Ion exchange is a novel water treatment technology developed rapidly in recent 20 years. It can be effectively used in hard water softening, pure water preparation, purification and separation of rare and radioactive elements, extraction and purification of organic compounds, decolorization and purification of food and drugs in electronics, electric power, chemical industry, medicine, lightness, textile, metallurgy, transportation, shipping and national defense industries, Recovery of important chemical raw materials and treatment of three wastes.



Principle of preparing pure water by CS:

- a. The raw water is exchanged with strong acid cation exchange resin (H type) to produce H, as shown in the following reaction formula:



- b. Working principle of degassing tower:

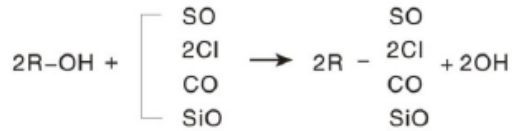
After hydrogen ion exchange of raw water, bicarbonate is converted into carbonic acid, which is removed together with the carbonic acid originally contained in the water by carbon remover. The lower the pH value of water, the more unstable the carbonic acid in water. It can be seen from the following balance equation:



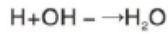
The greater the H concentration in the water, the easier the balance will shift to the right. When the pH value in the water is lower than 4.3, almost all the carbonic acid compounds in the water exist in the form of free carbon dioxide. The free carbon dioxide in the water can be regarded as the gas dissolved in the water. Therefore, the partial pressure of carbon dioxide on the water surface can be reduced to get out of CO₂.

- c. Anion bed:

The strong basic anion exchange resin (oh type) essentially exchanges inorganic acids to produce Oh, and the reaction formula is as follows:



Then H and OH in raw water combine to form H₂O to remove impurities. The reaction formula is as follows:



d. Mixed bed:

The anion and cation exchange resins are mixed and filled in the same exchange column according to a certain proportion. Its function can be regarded as an ion exchange equipment for direct desalination without array double bed series operation. The reaction formula is as follows:

