

Oxygen Removal

Various techniques are available for removing oxygen from water. These techniques include mechanical means, such as vacuum deaeration, and chemical methods involving the addition or reducing agents, such as sulfites and hydrazine. There are times, however, when these techniques are not adequate and other means must be considered.

Several studies have demonstrated that deionized water, for example, can be effectively deoxygenated by passage of the water through a bed of a strong base anion exchange resin in sulfite form. ResinTech SIR-800 is quite effective for this purpose. This strong base anion exchanger has been specially treated with 15 lbs. of a mixture sulfite (90%), sodium hydrosulfite (5%), and sodium hydroxide (5%) applied as a 4 percent solution to the hydroxide form of the resin at a flow rate of 0.25 – 0.50 gpm per cubic foot.

Under normal deionization conditions, one can reduce the oxygen content of water from 2,000 parts per billion (ppb) to essentially zero with an operating capacity of 5 to 6 grams of oxygen per liter of anion exchange resin. This value corresponds to approximately 0.35 lbs. oxygen per cubic foot.

