RESINTECH INC
INNOVATIONS IN ION EXCHANGE

TECHNICAL DATA SHEET

OXYGEN REMOVAL CAPACITY RESINTECH SIR-800

The table below illustrates the oxygen (O2) removal capacity of ResinTech SIR-800 based on the following assumptions:

Tank Volume: 3 cubic feet
Flowrate: 10 gpm = 14,400 GPD per tank
Oxygen Concentration: 100 ppb, 300 ppb, 500 ppb and 1 ppm
Chlorine Concentration: 0

O_2 Cone	Capacity gal/c.f.	Capacity Gallons	Run Length
1 ppm	54,500	163,500	11 days
500 ppb	109,000	327,000	22 days
300 ppb	327,000	981,000	68 days
100 ppb	545,000	1,680,000	113 days

Therefore, if the average oxygen concentration runs between 100 and 300 ppb, the estimated run length should be 2 – 3 months.

Note that if the concentrations increase to the range of 500 ppb – 1 ppm, the run lengths are seriously reduced to a matter of a few weeks.

The ResinTech SIR-800 is made with a type 1 strong base anion resin like ResinTech SBG1. There are 2 methods to consider. Both methods start with first putting the resin into the hydroxide form.

The sodium sulfite method uses a dosage of 8 lbs/cu.ft. applied at 5 to 10 percent, the lower the dosage the better. The resin gets converted to about 90% in the sulfite form, and therefore has an alkaline pH due to the remaining 10% of the resin left in the hydroxide form. At an alkaline pH, the sulfite doesn't come off, and the resin can be used in a polishing application, featuring good TOC rinsedown and oxygen removal below 50 ppb in a single pass.

The sodium metabisulfite method uses the same dosage and percent chemical. However, it is acidic and therefore the bisulfite can hydrolize off the resin at appreciable levels, 10 to 20 ppm and can be quite odiferous. This method produces a resin that will remove saturated oxygen down to 0. This is best for bulk oxygen removal from water and is not good for ultrapure applications.

In either case, do not expose the resin or waste regenerant to pH conditions less than 5. Do not discharge the waste to a neutralization tank that contains an acidic solution. The smell can be overpowering!

There is one other method out there that uses a combination of 16 lbs/cu.ft. of sulfite, 3 lbs/cu.ft. of salt, and 2 lbs/cu.ft. of caustic, but you cannot load the resin nearly as much as if you use one of the methods shown above. The chloride in the salt competes for sites and you don't get as high a conversion. It is much better to convert the resin to the intermediate hydroxide form, and then expose it to the sulfite solution.

Shelf life is very limited on this resin in the sulfite form. We make it to order. Mylar liners work best to prevent atmospheric oxygen from exhausting the resin