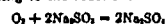


Water Conditioning With Sodium Sulphite

► IDEALLY, to rid feedwater of dissolved oxygen it need only be boiled but, actually, it proves safer to use a reagent in addition, to scavenge whatever amounts may remain or be absorbed after boiling. Sodium sulphite proves an effective chemical for this purpose. It works according to the reaction:



An excess of sulphite should be maintained above this theoretical requirement to insure complete chemical combination with oxygen.

As concentrations of all impurities in the boiler water are affected by blowdown, it is necessary to consider the blowdown rate in calculating amount of chemical required. Amount of chemically pure sodium sulphite needed to maintain the recommended excess is given by:

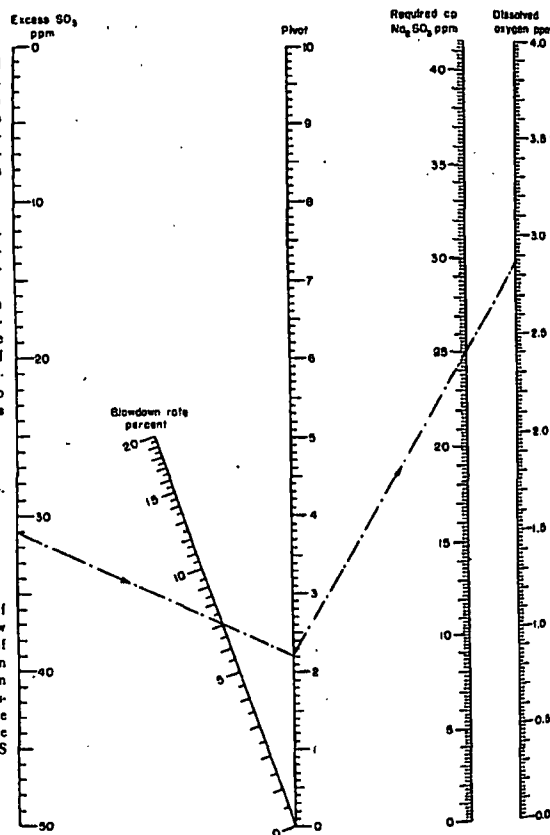
$$\text{ppm } Na_2SO_3 = 0.01 \text{ ppm excess } Na_2SO_3 \times \text{blowdown rate in \%}$$

The amount needed to unite with oxygen theoretically is:

$$\text{ppm } Na_2SO_3 = \text{ppm } O_2 \times \frac{\text{equivalent wt sodium sulphite}}{\text{equivalent wt oxygen}} = 7.875 \text{ ppm } O_2$$

The nomogram facilitates the making of these calculations for conditions of low oxygen content. Connect the value of recommended excess and blowdown rate and produce to the pivot line. Then connect this point with the value of dissolved oxygen. The result gives the chemically pure sodium sulphite dosage in ppm. To convert to lb per 1000 US gallons divide by 120.

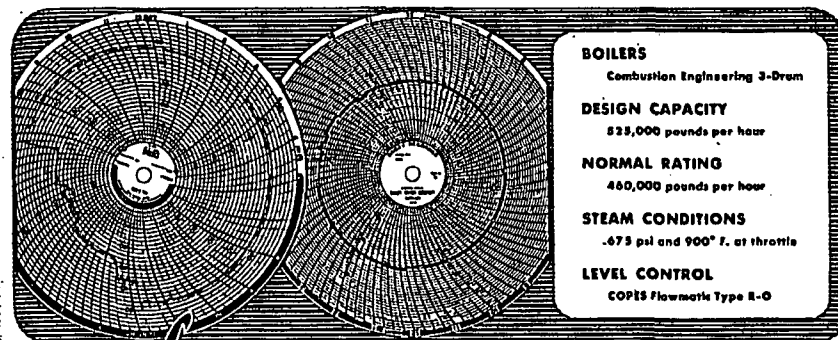
By JOHN F HYAM Sarnia, Ontario



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from 460,000 down to 320,000 pounds per hour in 15 minutes . . . 280,000 up to 400,000 pounds an hour in another 15 minutes . . . and level held closely . . .

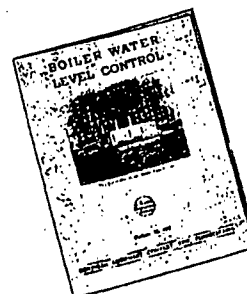
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