



## FILMTEC Membranes

## Water Chemistry and Pretreatment: Strontium Sulphate Scale Prevention

Strontium Sulphate  
Scale PreventionCalculation <sup>1/8</sup>

Prediction of SrSO<sub>4</sub> scaling potential is performed in the same way as the previously described procedure for CaSO<sub>4</sub>:

1. Calculate the ionic strength of the concentrate stream ( $I_c$ ) following the procedure described in [Scaling Calculation General \(Section 2.4.1\)](#):

$$I_c = I_f \left( \frac{1}{1-Y} \right)$$

Eq. 5

2. Calculate the ion product ( $IP_c$ ) for SrSO<sub>4</sub> in the concentrate stream:

$$IP_c = \left[ (mSr^{2+})_f \left( \frac{1}{1-Y} \right) \right] \left[ (mSO_4^{2-})_f \left( \frac{1}{1-Y} \right) \right]$$

where:

$(mSr^{2+})_f = M Sr^{2+}$  in feed, mol/L

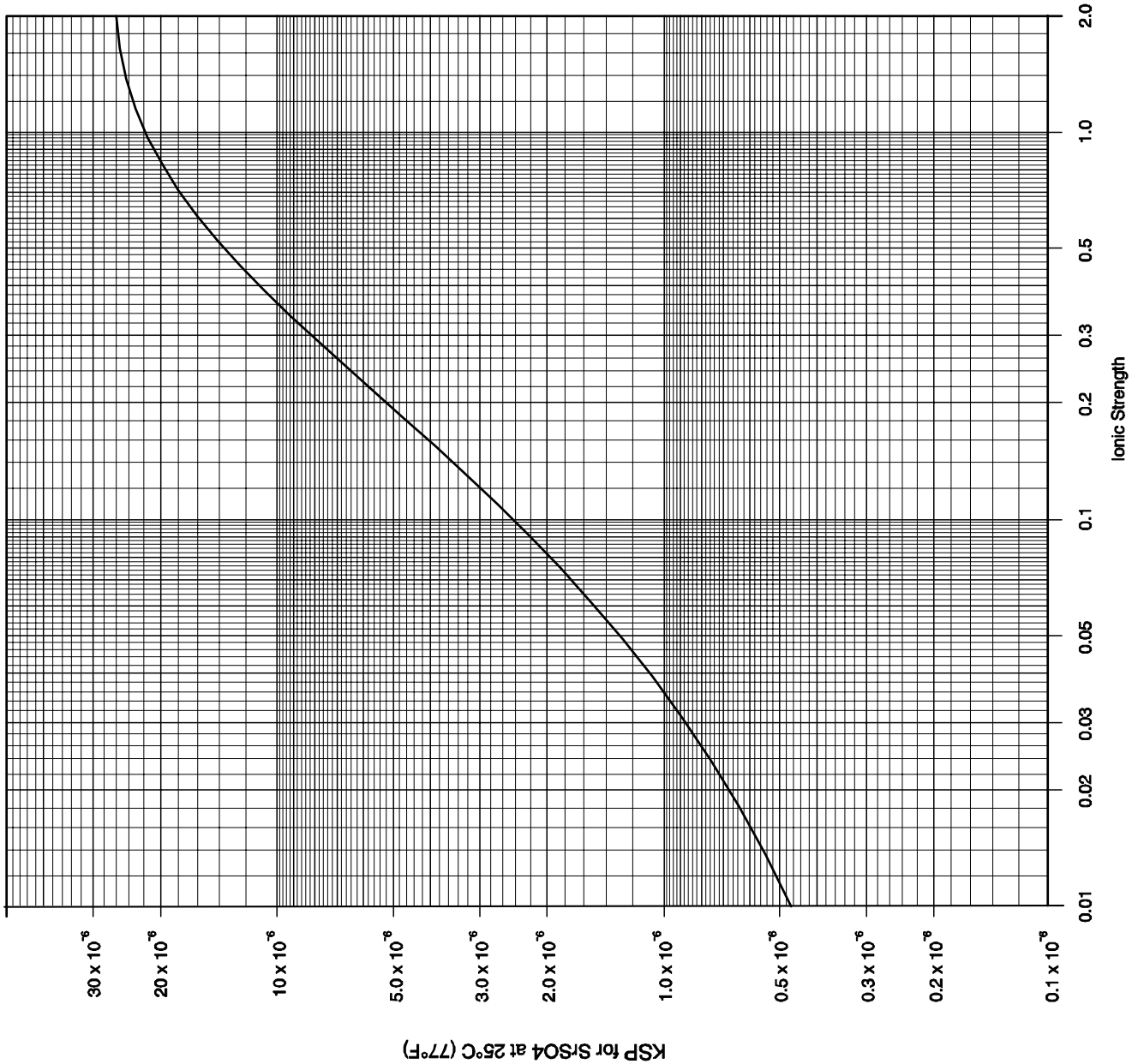
$(mSO_4^{2-})_f = M SO_4^{2-}$  in feed, mol/L

3. Compare  $IP_c$  for SrSO<sub>4</sub> with the solubility product ( $K_{sp}$ ) of SrSO<sub>4</sub> at the ionic strength of the concentrate stream, Figure 2.8. If  $IP_c \geq 0.8 K_{sp}$ , SrSO<sub>4</sub> scaling can occur, and adjustment is required.

Adjustments for SrSO<sub>4</sub> Scale Control

- The adjustments discussed in [Calcium Sulfate Scale Prevention \(Section 2.4.3\)](#) for CaSO<sub>4</sub> scale control apply for SrSO<sub>4</sub> scale control as well.

Figure 2.8  $K_{sp}$  for  $\text{SrSO}_4$  versus ionic strength /10/



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 For more information about FILMTEC membranes, call the Dow Liquid Separations business:  
 North America: 1-800-447-4369  
 Latin America: (+55) 11-5188-9222  
 Europe: (+32) 3-450-2240  
 Pacific (ex. China): +800-7776-7776  
 China: +10-800-600-0015  
<http://www.filmtec.com>

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