calculated from a constant $-\Delta C_p$ extrapolation of existing measurements up to 90°C as summarized by Barnes et al. (1966), and including the more recent measurements by Ellis and Milestone (1967). The $K_{H_3SiO_4^-}$ of Ryzhenko (1967) used in the computation is believed to be rather uncertain. However, at the calculated pH of 9.8, $H_2SiO_4^{2-}$ is not the dominant species, and moderate errors in the second ionization constant do not significantly affect final results.

At 150°C and a total analytical Na_2S content of 0.113 m/kg Dickson (1966) reports a quartz solubility of 0.078 m/kg. For the same conditions the above model results in a total silica concentration of 0.061 m/kg. In view of the considerable (but unknown) uncertainties involved in the values of K_{H_2S}, K_{HS^-}, and K_{NaHS}, the fairly close agreement between observed and calculated solubilities indicates that complexes containing both sulfur and silica are not necessarily of major significance under the conditions tested.

While this paper was under review, Ostapenko et al. (1969) published additional data on the solubility of quartz in NaOH and Na_2S solutions at 280°C, and also came to the conclusion that silica–sulfur complexing is not quantitatively significant.

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