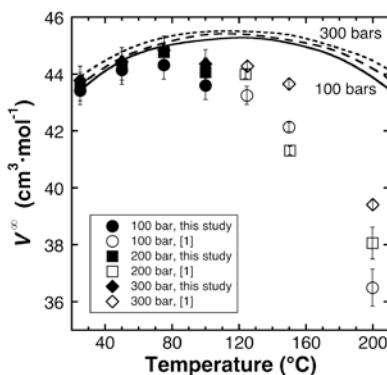


## Volumetric properties of dilute aqueous solutions of glycine to 125°C and 500 bar

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Glycine ( $C_2H_5NO_2$ ) is the smallest of the 20 amino acids that form proteins. The densities of aqueous solutions of glycine were measured using an Anton Paar DMA HP vibrating tube densimeter. Reproducibility of the density measurements was  $< \pm 0.0001 \text{ g}\cdot\text{mol}^{-3}$ . Figure 1 shows experimentally determined partial molar volumes at infinite dilution ( $V^\infty$ ) from this study, a previous study [1], and predictions from SUPCRT92 [2] using the parameters for glycine by [3].  $V^\infty$  increases with temperature to a maximum at  $\sim 90^\circ\text{C}$  followed by a sharp decrease with increasing temperature; this behavior is similar to that observed for other amino acids and aqueous electrolytes. We note that these data significantly expand the experimental database for glycine.



**Figure 1.** Experimentally determined values of  $V^\infty$  of glycine at 25-200 °C and 100-300 bars from this study (filled symbols) and [1] (open symbols). Error bars represent  $\pm 0.5 \text{ cm}^3\cdot\text{mol}^{-1}$  for this study and those reported by [1]. Estimates of  $V^\infty$  from SUPCRT92 [2, 3] at 100 bar (solid line), 200 bar (dashed line) and 300 bar (dotted line) are shown for comparison.

[1] Hakin *et al.* (1998) *J. Chem. Thermo.* **30**, 583-606.

[2] Johnson *et al.* (1992) *Computers & Geosci.* **18**, 899-947. [3] Dick *et al.* (2006) *Biogeosciences* **3**, 311-336.