

Supporting Information Cover Sheet

# **Physicochemical Properties of Aqueous Solutions of 2-Amino-2-hydroxymethyl-1,3- propanediol**

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Number of figures: 8

Figure S1 shows the variation of density of (AHPD + H<sub>2</sub>O) solutions at various temperatures.

Figure S2 shows the variation of viscosity of (AHPD + H<sub>2</sub>O) solutions at various temperatures.

Figure S3 shows the variation of Henry's law constant of CO<sub>2</sub> in water as a function of temperature.

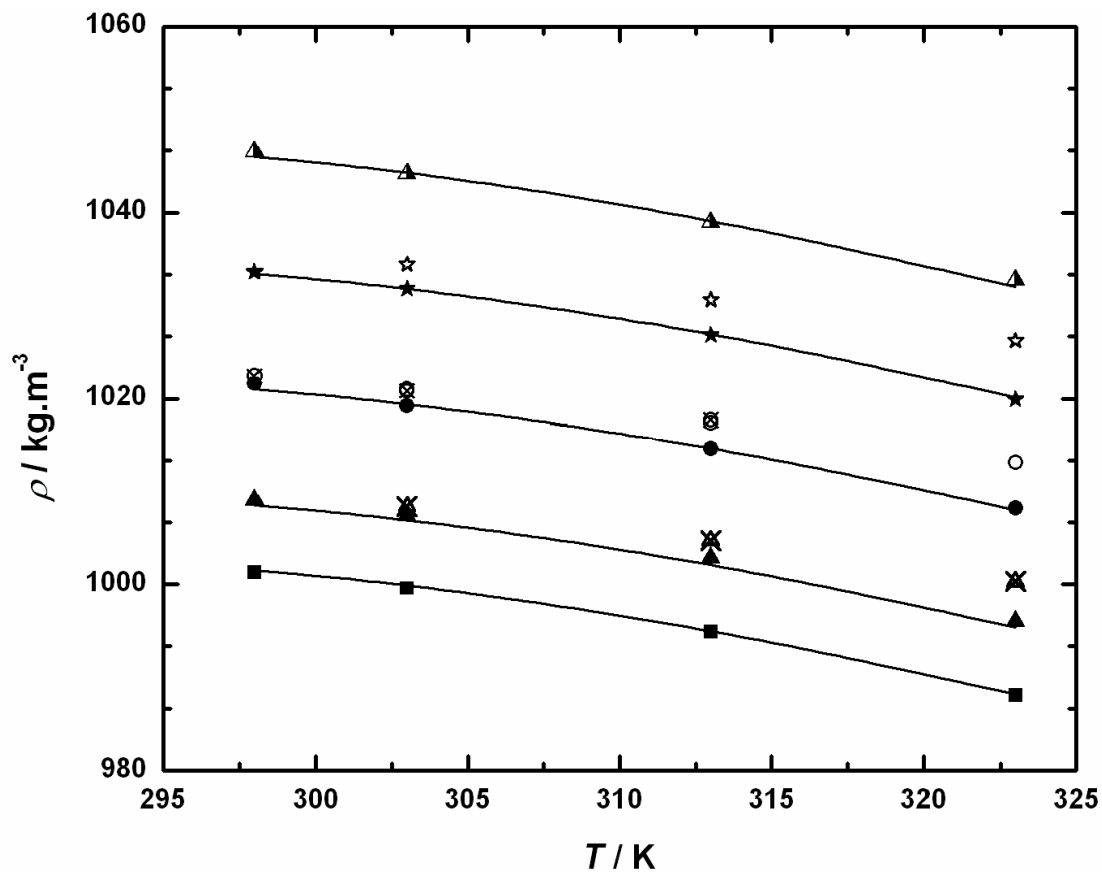
Figure S4 shows the variation of Henry's law constant of N<sub>2</sub>O in water as a function of temperature.

Figure S5 shows the variation of Henry's law constant of N<sub>2</sub>O in (AHPD + H<sub>2</sub>O) solutions at various temperatures.

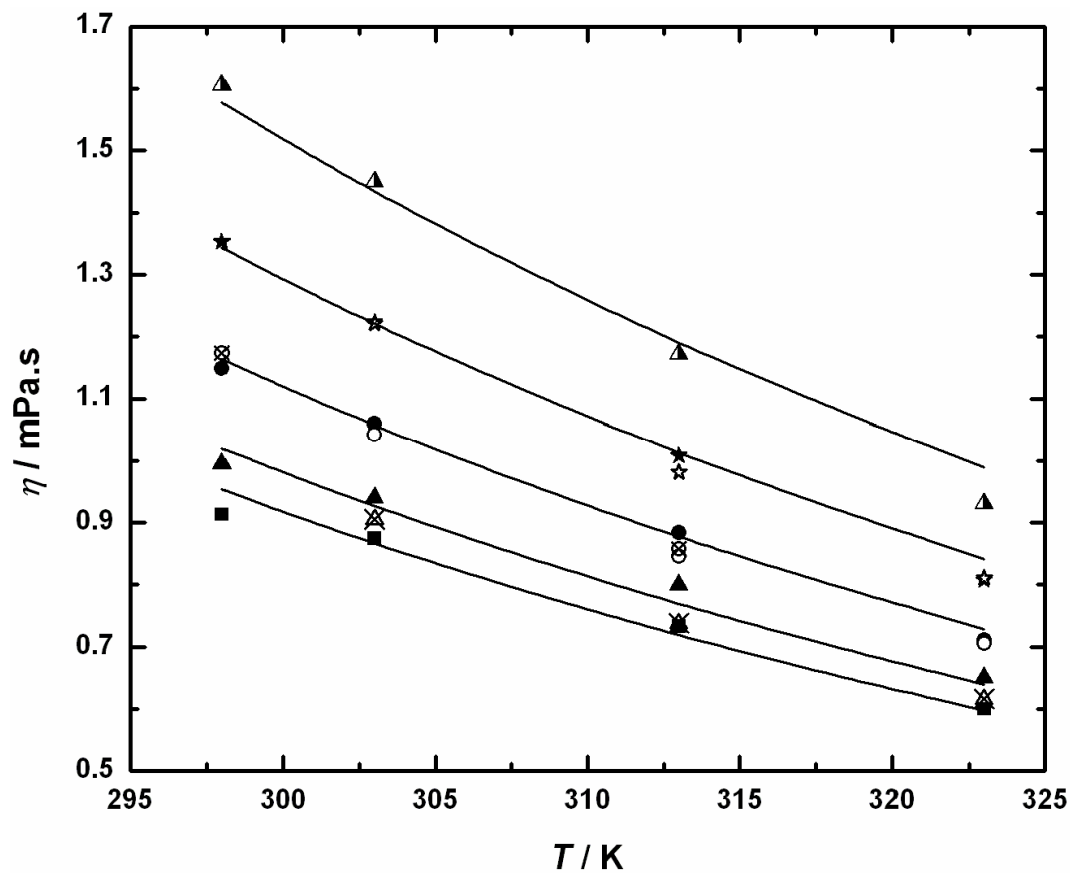
Figure S6 shows the variation of diffusivity of CO<sub>2</sub> in water as a function of temperature.

Figure S7 shows the variation of diffusivity of N<sub>2</sub>O in water as a function of temperature.

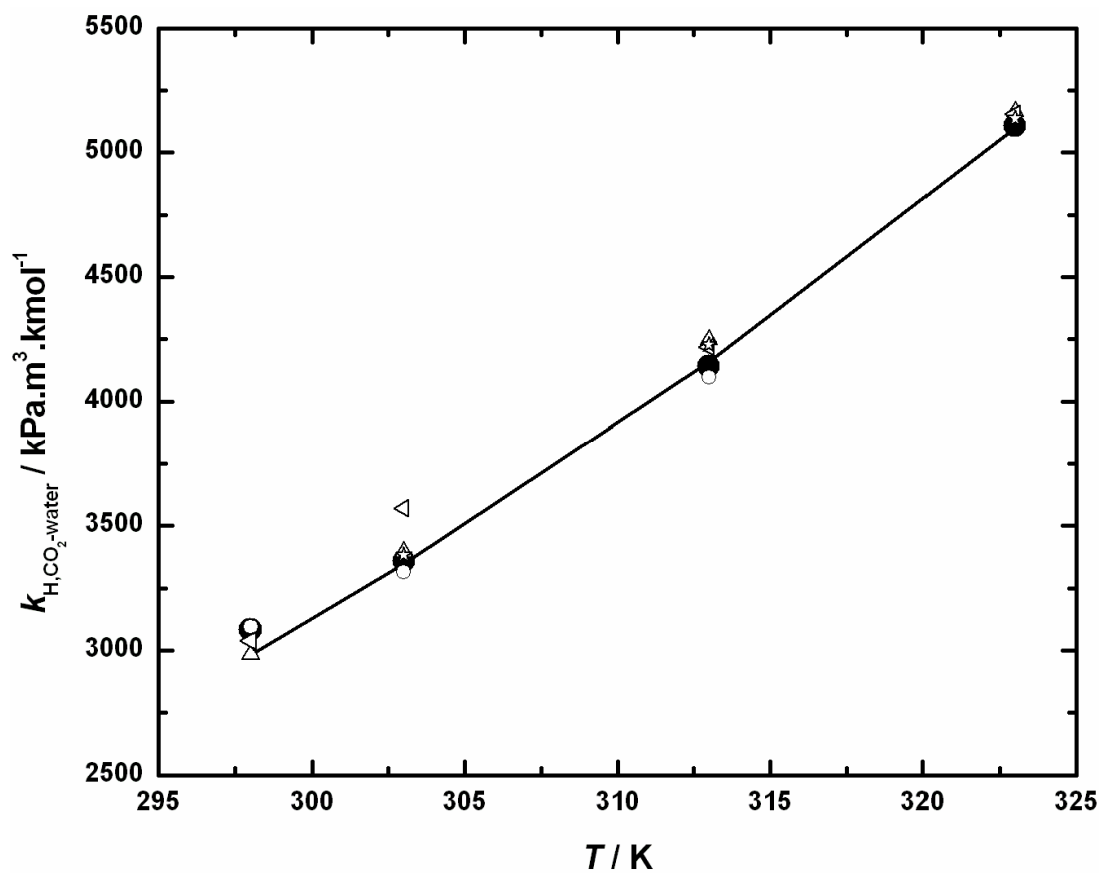
Figure S8 shows the variation of diffusivity of N<sub>2</sub>O in (AHPD + H<sub>2</sub>O) solutions at various temperatures.



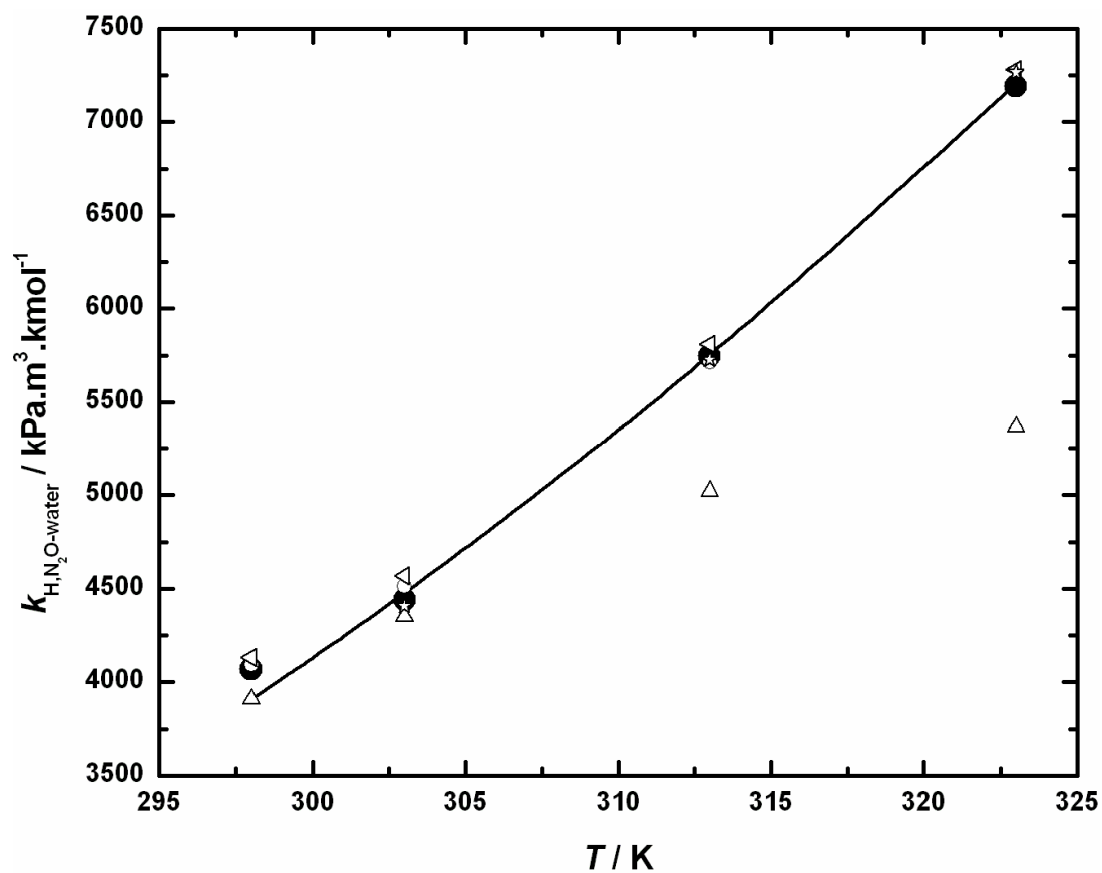
**Figure S1.** Density of (AHPD + H<sub>2</sub>O) solutions at various temperatures: ■,  $w_1 = 2.17$ , this study; ▲,  $w_1 = 5.10$ , this study; ⋈,  $w_1 = 5.00$ , Park et al.<sup>9</sup>; ●,  $w_1 = 10.3$ , this study; ○,  $w_1 = 10.0$ , Park et al.<sup>9</sup>; ⊗,  $w_1 = 10.0$ , Tourneux et al.<sup>10</sup>; ★,  $w_1 = 15.8$ , this study; ☆,  $w_1 = 15.0$ , Park et al.<sup>9</sup>; ▲,  $w_1 = 21.7$ , this study; —, calculated by eq 3.



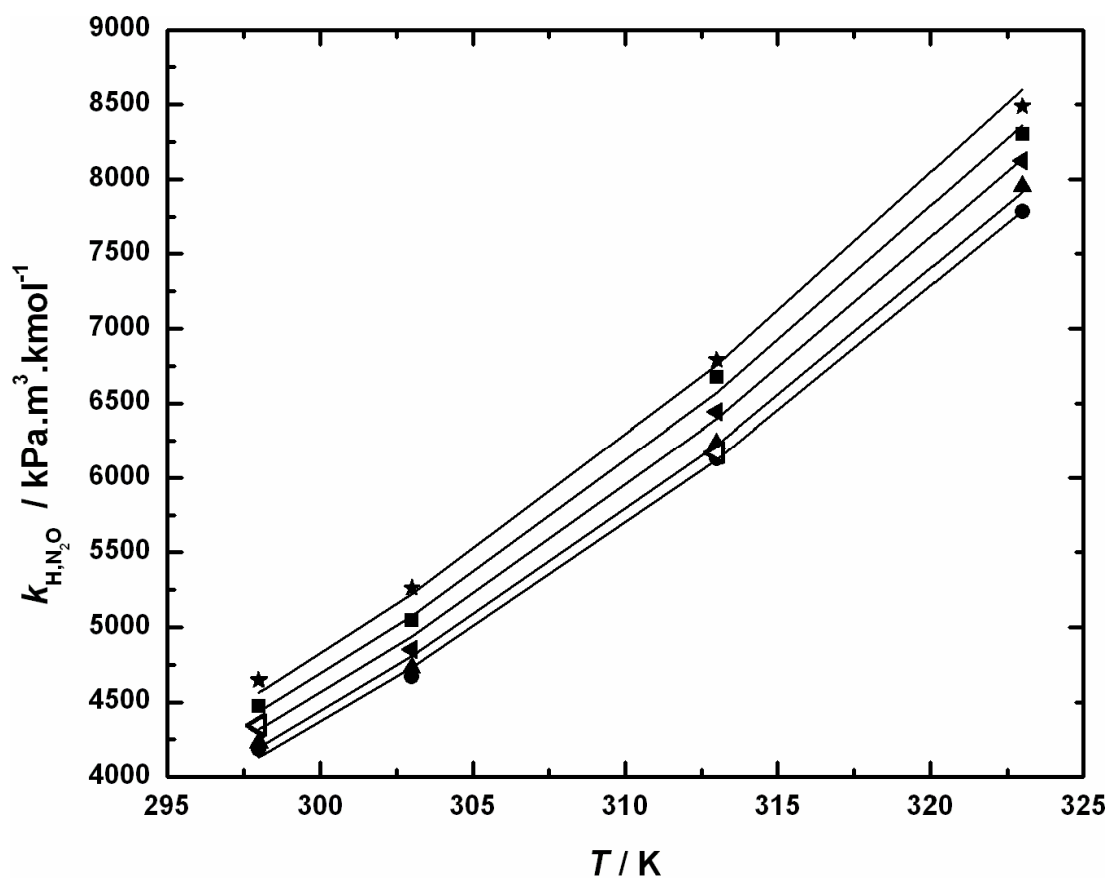
**Figure S2.** Viscosity of (AHPD + H<sub>2</sub>O) solutions at various temperatures: ■,  $w_1 = 2.17$ , this study; ▲,  $w_1 = 5.10$ , this study; ⋈,  $w_1 = 5.00$ , Park et al.<sup>9</sup>; ●,  $w_1 = 10.3$ , this study; ○,  $w_1 = 10.0$ , Park et al.<sup>9</sup>; ⊗,  $w_1 = 10.0$ , Tourneux et al.<sup>10</sup>; ★,  $w_1 = 15.8$ , this study; ☆,  $w_1 = 15.0$ , Park et al.<sup>9</sup>; ▲,  $w_1 = 21.7$ , this study; —, calculated by eq 4.



**Figure S3.** Henry's law constant of CO<sub>2</sub> in water as a function of temperature: ●, this study; ○, Mandal et al.;<sup>16</sup> △, Al-Ghawas et al.;<sup>17</sup> ◁, Versteeg and van Swaaij;<sup>18</sup> ☆, Li and Lai;<sup>19</sup> —, calculated by eq 5.

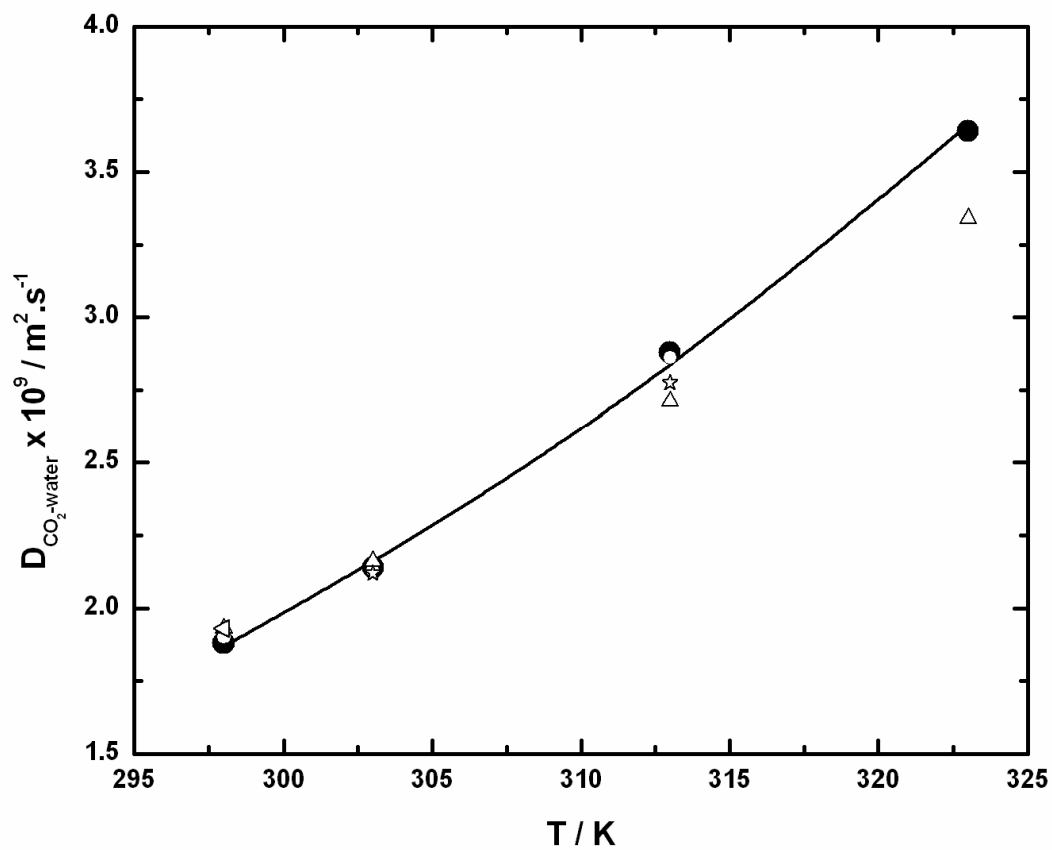


**Figure S4.** Henry's law constant of N<sub>2</sub>O in water as a function of temperature: ●, this study; ○, Mandal et al.;<sup>16</sup> Δ, Al-Ghawas et al.;<sup>17</sup> ◄, Versteeg and van Swaaij;<sup>18</sup> ☆, Li and Lai;<sup>19</sup> —, calculated by eq 6.



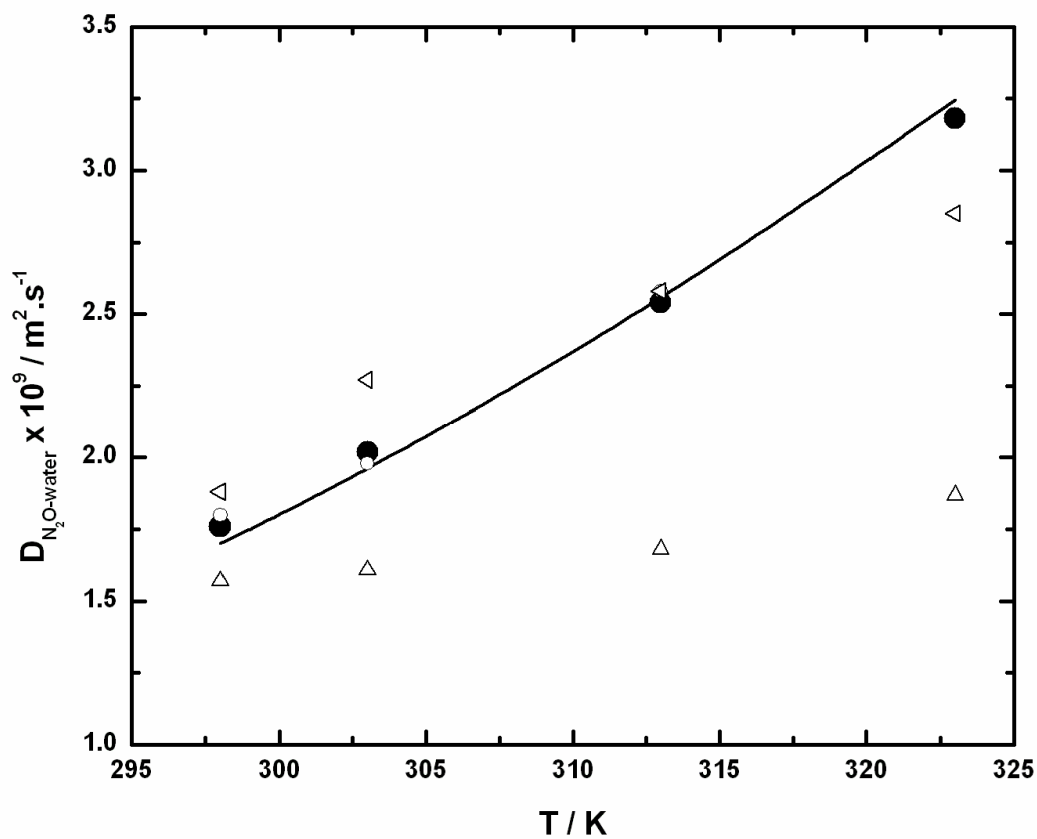
**Figure S5.** Henry's law constant of N<sub>2</sub>O in (AHPD + H<sub>2</sub>O) solutions at various temperatures:

●,  $w_1 = 2.17$ , this study; ▲,  $w_1 = 5.10$ , this study; ◄,  $w_1 = 10.3$ , this study; ◄,  $w_1 = 10.0$ , Tourneux et al.<sup>10</sup>; ■,  $w_1 = 15.8$ , this study; ★, this study;  $w_1 = 21.7$ , this study; —, calculated by eq 7.

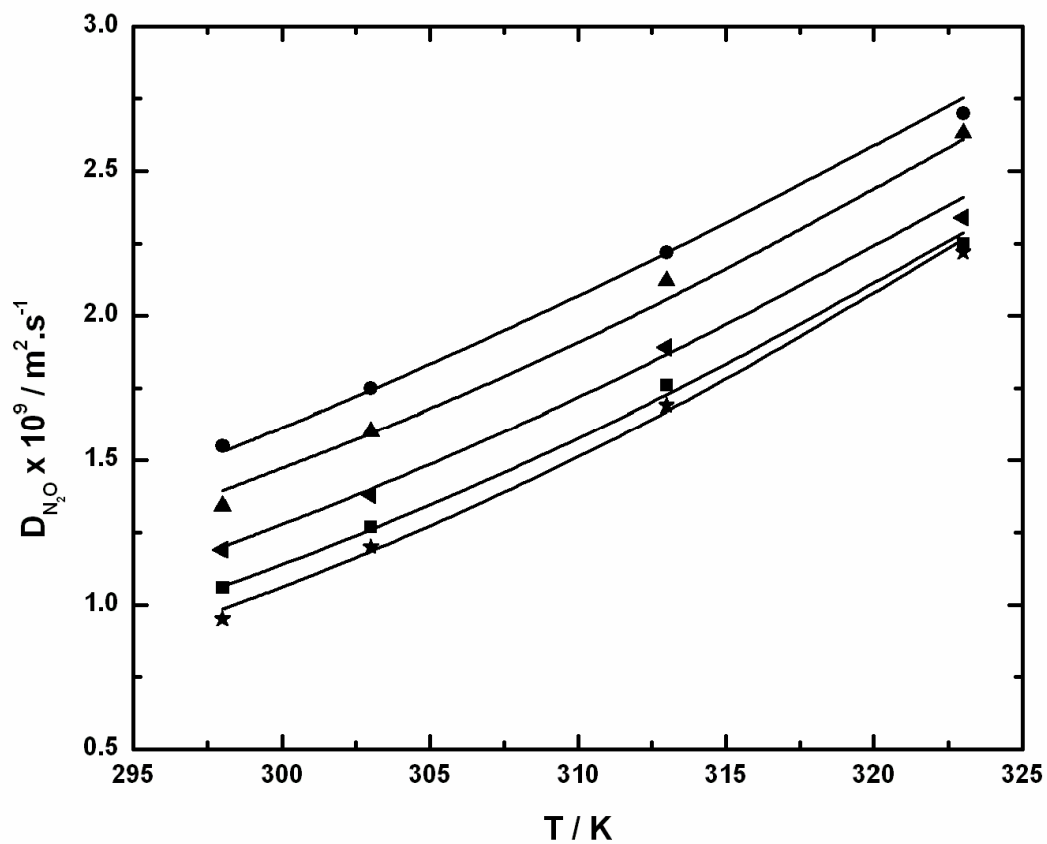


**Figure S6.** Diffusivity of CO<sub>2</sub> in water as a function of temperature: ●, this study; ○, Mandal et al.;<sup>16</sup> △, Al-Ghawas et al.;<sup>17</sup> ◊, Versteeg and van Swaaij;<sup>18</sup> ☆, Li and Lai;<sup>19</sup> —, calculated by eq 8.





**Figure S7.** Diffusivity of  $\text{N}_2\text{O}$  in water as a function of temperature:  $\bullet$ , this study;  $\circ$ , Mandal et al.;<sup>16</sup>  $\triangle$ , Al-Ghawas et al.;<sup>17</sup>  $\triangleleft$ , Versteeg and van Swaaij;<sup>18</sup> —, calculated by eq 9.



**Figure S8.** Diffusivity of  $\text{N}_2\text{O}$  in (AHPD +  $\text{H}_2\text{O}$ ) solutions at various temperatures: ●,  $w_1 = 2.17$ ; ▲,  $w_1 = 5.10$ ; ◄,  $w_1 = 10.3$ ; ■,  $w_1 = 15.8$ ; ★,  $w_1 = 21.7$ ; —, calculated by eq 10.