SUPPORTING INFORMATION

Solubilities of Ammonia in Polyethylene Glycols at (298.2 to 353.2) K and (0 to 200) kPa

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Table S1. Solubilities of CO_2 in PEG200

Measured in this work [a]			Literature data cited from reference 31[b]		
T/K	P_{CO2}/kPa	m_{CO2}/(mol·kg^{-1})	T/K	P_{CO2}/kPa	m_{CO2}/(mol·kg^{-1})
313.2	63.5	0.026±0.004	313.2	72.2	0.0312±0.0003
313.2	108.2	0.049±0.004	313.2	91.9	0.0386±0.0003
313.2	147.7	0.068±0.004	313.2	154.8	0.0669±0.0003
313.2	194.5	0.089±0.004	313.2	273.3	0.1240±0.0005
313.2	300.5	0.138±0.004			

[a] T is the temperature; P_{CO2} is the pressure of CO_2; m_{CO2} is the solubility of CO_2; standard uncertainties u are $u(T)$=0.1 K and $u(P_{CO2})$=1.2 kPa, $u(m_{CO2})$ are reported following the ± sign. [b] T is the temperature; P_{CO2} is the pressure of CO_2; m_{CO2} is the solubility of CO_2 in PEG200; standard uncertainties u are $u(T)$=0.1 K and $u(P_{CO2})$=0.2 kPa, $u(m_{CO2})$ are reported following the ± sign.

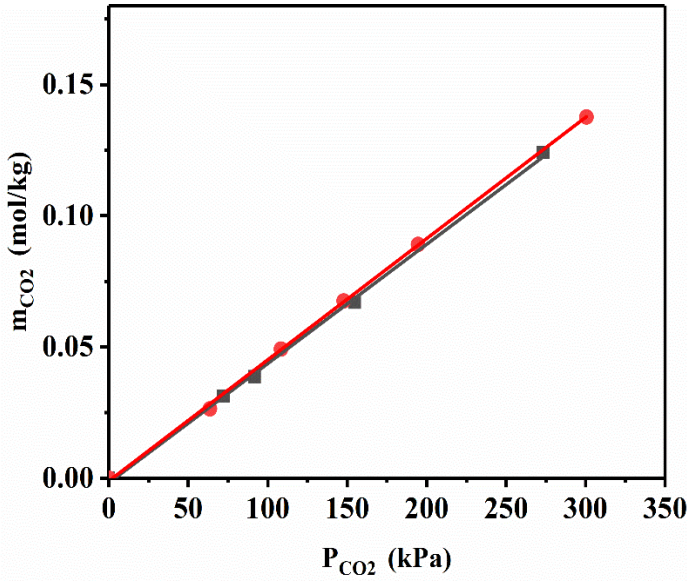

Figure S1. Solubilities of CO_2 in PEG200 (■: literature data cited from reference 31; ●: measured in this work).

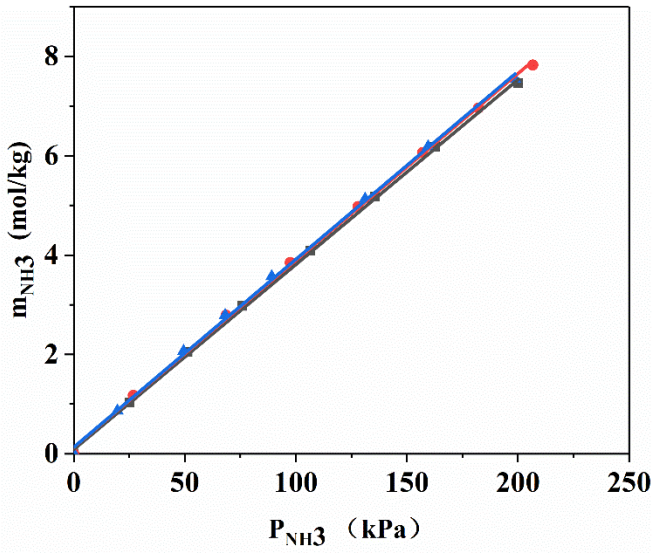

Figure S2. Solubilities of NH_3 in Di-EG at 313.2 K (■: first test; ●: second test; ▲: third test).

Table S2. Experimental and literature densities of PEGs[a]

Solvent	T (K)	Experimental/(kg/m^3)	Literature/(kg/m^3)
Di-EG	293.2	1116	1116.0
	303.2	1109	1108.9
	313.2	1101	1101.7
	323.2	1095	1094.4
	333.2	1087	1087.1
	343.2	1080	1079.7
	353.2	1072	1072.2
Tri-EG	293.2	1123	1123.1
	303.2	1115	1115.3
	313.2	1108	1107.5
	323.2	1100	1099.6
	333.2	1092	1091.8
	343.2	1084	1083.9
	353.2	1076	1076.1

[a]The literature densities are cited from reference 44.

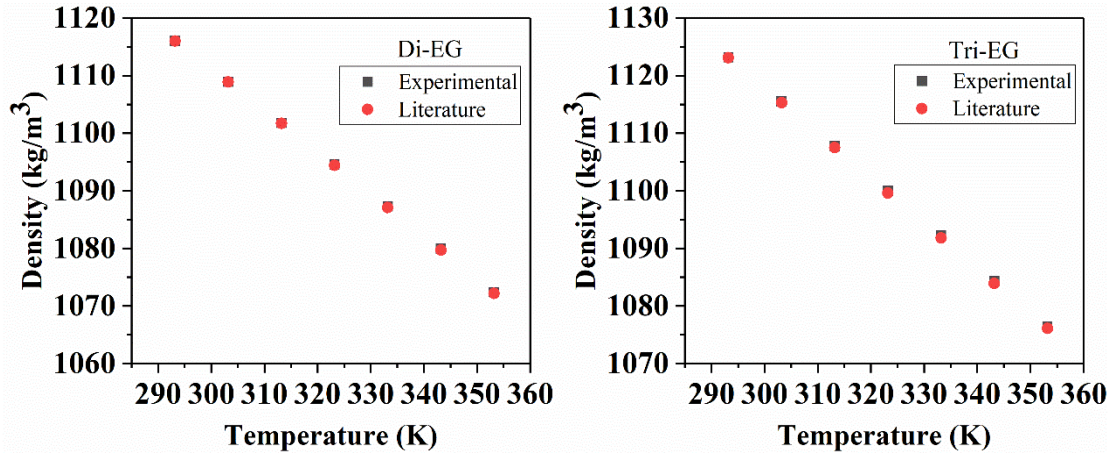

Figure S3. Comparison of experimental and literature densities of PEGs.

Table S3. Experimental and literature surface tensions of PEGs[a]

Solvent	T (K)	Experimental/(mN/m)	Literature/(mN/m)
Di-EG	298.2	44.25	45.22
	303.2	43.91	44.08
	313.2	43.38	
	323.2	42.80	
	333.2	42.15	
	343.2	41.47	
Tri-EG	293.2	45.28	
	303.2	44.71	44.71
	313.2	44.16	
	323.2	43.36	
	333.2	42.43	
	343.2	41.55	

[a]The literature surface tensions are cited from references 45 and 46.

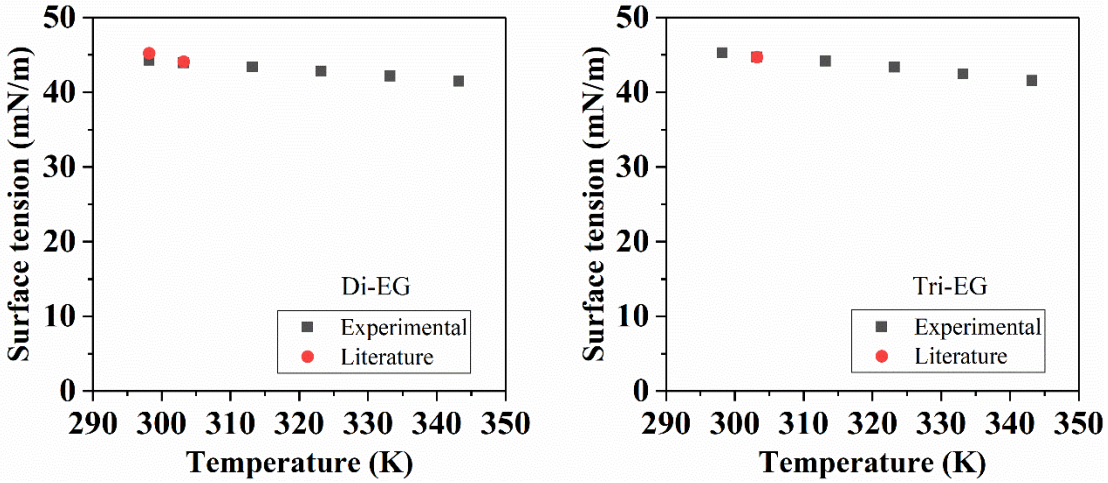

Figure S4. Comparison of experimental and literature surface tensions of PEGs.