

Supporting information.

An assessment of the dispersion of glycerol in dimethyl carbonate in a stirred tank

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The following Supporting Information contains 3 Tables and 1 Figure to give additional data to the main manuscript as follows:

Table S1. Sauter mean diameters obtained from the entire set of experiments varying impeller speeds, volumetric fraction of dispersed phase and temperature (i.e., viscosity of dispersed phase).

N, rpm	d _{3,2} , μm				μ _d , mPa s
	Φ _d = 0.30	Φ _d = 0.22	Φ _d = 0.15	Φ _d = 0.08	
300	1033	870	739	697	945
350	954	779	652	590	
400	880	699	572	498	
450	773	633	529	448	
500	686	579	495	410	
300	389	350	325	297	81.3
350	321	296	276	245	
400	277	263	232	206	
450	258	236	207	189	
500	239	206	191	175	
300	334	321	310	294	50.6
350	282	273	255	246	
400	249	237	219	201	
450	220	206	190	182	
500	195	187	186	173	

Table S2. Constants and exponent values of data fitting to Equation 4.

ϕ_d	C_2	C_3	Exponent	R^2	μ_d , mPa s
0.30	0.06 ± 0.02	3.3 ± 0.2	-0.38 ± 0.01	0.9657	945
0.22	0.07 ± 0.01	4.3 ± 0.1	-0.43 ± 0.03	0.9986	
0.15	0.07 ± 0.02	6.6 ± 0.5	-0.47 ± 0.07	0.9686	
0.08	0.09 ± 0.01	10.3 ± 0.4	-0.53 ± 0.01	0.9957	
0.30	0.04 ± 0.01	3.4 ± 0.2	-0.50 ± 0.07	0.9798	81.3
0.22	0.04 ± 0.01	4.4 ± 0.2	-0.53 ± 0.03	0.9949	
0.15	0.04 ± 0.01	7.1 ± 0.3	-0.55 ± 0.01	0.9952	
0.08	0.05 ± 0.02	10.4 ± 0.9	-0.58 ± 0.01	0.9812	
0.30	0.04 ± 0.01	3.5 ± 0.1	-0.52 ± 0.01	0.9992	50.6
0.22	0.04 ± 0.01	4.5 ± 0.1	-0.54 ± 0.01	0.9994	
0.15	0.05 ± 0.02	7.2 ± 0.6	-0.57 ± 0.01	0.9782	
0.08	0.05 ± 0.02	10.9 ± 1.0	-0.59 ± 0.01	0.9790	

Note: the error in the estimation of the parameters is given at **95 %** of confidence

Table S3. Constants and exponent values of data fitting to Equation 9.

Volume fraction, ϕ_d	C_{10}	Exponent	R^2	η , mPa s
0.30	757 ± 56	-0.255 ± 0.091	0.9657	945
0.22	619 ± 10	-0.265 ± 0.022	0.9986	
0.15	518 ± 16	-0.270 ± 0.043	0.9943	
0.08	436 ± 17	-0.357 ± 0.040	0.9957	
0.30	249 ± 18	-0.328 ± 0.080	0.9802	81.3
0.22	226 ± 7	-0.335 ± 0.061	0.9969	
0.15	203 ± 8	-0.361 ± 0.040	0.9955	
0.08	183 ± 13	-0.363 ± 0.079	0.9861	
0.30	213 ± 3	-0.345 ± 0.021	0.9994	50.6
0.22	201 ± 2	-0.362 ± 0.012	0.9996	
0.15	190 ± 7	-0.367 ± 0.040	0.9804	
0.08	179 ± 15	-0.375 ± 0.010	0.9809	

Note: the error in the estimation of the parameters is given at **95 %** of confidence

Figure S1. Example of images of varied volume fraction of the dispersed phase at constant impeller speed $N=300$ rpm and $\mu_d=945$ mPa s: (A) $\phi_d=0.30$; (B) $\phi_d=0.22$; (C) $\phi_d=0.15$ of and (D) $\phi_d=0.08$.

