

Supporting information for:

**Branching Defects in Dendritic Molecules: Coupling
Efficiency and Congestion Effects**

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This document tabulates the data plotted in Figs. 6–9

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Table S1: Decadic logarithm of the six sets of n_g plotted in Fig. 6 (left column, top panel) for a DP with $P = 0.8$. Remaining quantities, k_g^{free} , k_g^{blocked} , X_g^{eff} , and P_g^{eff} shown in the same figure (left column, lower panels) can be derived from the tabulated values via eqs 2–5, 37, and 38. The six data columns correspond to the the six symbols in the key of Fig. 6 and are abbreviated here for a better readability of the table. Thus the first data column contains $\log_{10}(n_g^{\text{ideal}})$. The headings "anal_{1.1}^{dead}" and "anal_{1.1}^{live}", respectively, abbreviate "analytic model (dead, $\rho = 1.1 \text{ g/cm}^3$)" and "analytic model (live, $\rho = 1.1 \text{ g/cm}^3$)".

g	ideal	anal. _{1.1} ^{dead}	anal. _{1.1} ^{live}	MC ^{dead}	MC ^{live}	asympt.
1	0.000	0.000	0.000	0.000	0.000	—
2	0.477	0.415	0.415	0.420	0.421	—
3	0.845	0.713	0.739	0.714	0.747	—
4	1.176	0.966	1.028	0.970	1.031	—
5	1.491	1.199	1.301	1.202	1.299	—
6	1.799	1.420	1.566	1.420	1.561	—
7	2.104	1.634	1.826	1.632	1.802	—
8	2.407	1.845	2.084	1.836	1.992	—
9	2.708	2.053	2.256	2.014	2.143	—
10	3.010	2.259	2.369	2.162	2.267	2.414
11	3.311	2.422	2.459	2.285	2.374	2.497
12	3.612	2.523	2.536	2.393	2.469	2.573
13	3.913	2.601	2.606	2.486	2.554	2.642
14	4.214	2.669	2.671	2.570	2.632	2.707
15	4.515	2.730	2.730	2.647	2.703	2.767
16	4.816	2.786	2.786	2.716	2.768	2.823
17	5.118	2.839	2.839	2.781	2.829	2.875

Table S2: Same as Tab. S1 for Fig. 6 (right column, top panel) for a dendrimer with $P = 0.8$.

g	ideal	anal. _{1.1} ^{dead}	anal. _{1.1} ^{live}	MC ^{dead}	MC ^{live}	asympt.
1	0.477	0.477	0.477	0.477	0.477	—
2	0.954	0.892	0.892	0.890	0.879	—
3	1.322	1.190	1.216	1.190	1.206	—
4	1.653	1.444	1.505	1.445	1.493	—
5	1.968	1.676	1.778	1.679	1.766	—
6	2.276	1.897	2.043	1.900	2.030	—
7	2.581	2.111	2.303	2.114	2.291	—
8	2.884	2.322	2.561	2.325	2.549	—
9	3.186	2.530	2.818	2.533	2.806	—
10	3.487	2.736	3.075	2.740	3.062	—
11	3.788	2.942	3.330	2.945	3.314	—
12	4.089	3.147	3.586	3.150	3.545	—
13	4.390	3.352	3.841	3.353	3.746	—
14	4.692	3.556	4.097	3.550	3.921	—
15	4.993	3.760	4.352	3.735	4.074	—
16	5.294	3.965	4.607	3.904	4.210	—
17	5.595	4.169	4.781	4.057	4.333	—
18	5.896	4.373	4.886	4.195	4.445	4.937

Table S3: Same as Tab. S1 for Fig. 7 (left column, top panel) for a DP with $P = 0.95$.

g	ideal	anal. _{1.1} ^{dead}	anal. _{1.1} ^{live}	MC ^{dead}	MC ^{live}	asympt.
1	0.000	0.000	0.000	0.000	0.000	—
2	0.477	0.462	0.462	0.460	0.462	—
3	0.845	0.814	0.820	0.812	0.818	—
4	1.176	1.126	1.141	1.123	1.139	—
5	1.491	1.422	1.446	1.417	1.444	—
6	1.799	1.709	1.743	1.697	1.728	—
7	2.104	1.992	2.020	1.930	1.947	—
8	2.407	2.163	2.171	2.103	2.113	—
9	2.708	2.281	2.284	2.240	2.248	—
10	3.010	2.378	2.379	2.355	2.362	2.414
11	3.311	2.462	2.462	2.455	2.462	2.497
12	3.612	2.537	2.538	2.544	2.551	2.573
13	3.913	2.607	2.607	2.625	2.631	2.642
14	4.214	2.671	2.671	2.698	2.704	2.707
15	4.515	2.730	2.730	2.766	2.771	2.767
16	4.816	2.786	2.786	2.829	2.834	2.823

Table S4: Same as Tab. S1 for Fig. 7 (right column, top panel) for a dendrimer with $P = 0.95$.

g	ideal	anal. _{1,1} ^{dead}	anal. _{1,1} ^{live}	MC ^{dead}	MC ^{live}	asympt.
1	0.477	0.477	0.477	0.477	0.477	—
2	0.954	0.940	0.940	0.938	0.942	—
3	1.322	1.291	1.297	1.289	1.299	—
4	1.653	1.603	1.618	1.602	1.618	—
5	1.968	1.899	1.923	1.897	1.924	—
6	2.276	2.186	2.221	2.184	2.222	—
7	2.581	2.469	2.514	2.467	2.516	—
8	2.884	2.750	2.806	2.747	2.809	—
9	3.186	3.030	3.097	3.027	3.099	—
10	3.487	3.310	3.388	3.303	3.380	—
11	3.788	3.589	3.678	3.556	3.626	—
12	4.089	3.868	3.968	3.774	3.832	—
13	4.390	4.147	4.258	3.958	4.007	—
14	4.692	4.425	4.511	4.116	4.158	—
15	4.993	4.618	4.644	4.255	4.292	—
16	5.294	4.733	4.743	4.380	4.412	—
17	5.595	4.823	4.826	4.492	4.522	—
18	5.896	4.901	4.902	4.596	4.623	4.937

Table S5: Same as Tab. S1 for Fig. 8 (left column, top panel) for DP with $P = 0.995$. Quantities, k_g^{free} , k_g^{blocked} , X_g^{eff} , P_g^{eff} , and M_g^{den} shown in the same figure (remaining panels) can be derived from the tabulated values via eqs 2–5, 37, and 38. M_g^{den} is obtained via eq 10 using values mentioned in Fig. 2. The six data columns correspond to the the six symbols in the key Fig. 8 (left column, top panel) and are abbreviated here for a better readability of the table. Thus the first data column contains $\log_{10}(n_g^{\text{ideal}})$. The headings "anal._{1.1}^{live}" and "anal._{1.4}^{live}", respectively, abbreviate "model (live, $\rho = 1.1 \text{ g/cm}^3$)" and "model (live, $\rho = 1.4 \text{ g/cm}^3$)", and the heading "exp." abbreviates "experiment ($N = 1000$)".

g	ideal	exp.	anal. _{1.1} ^{live}	anal. _{1.4} ^{live}	MC ^{live}	asympt.
1	0.000	0.000	0.000	0.000	0.000	—
2	0.477	0.476	0.476	0.476	0.476	—
3	0.845	0.843	0.843	0.843	0.844	—
4	1.176	1.173	1.173	1.173	1.174	—
5	1.491	1.483	1.487	1.487	1.488	—
6	1.799	1.768	1.794	1.794	1.773	—
7	2.104	—	2.032	2.097	1.986	—
8	2.407	—	2.175	2.268	2.146	—
9	2.708	—	2.286	2.386	2.276	—
10	3.010	—	2.379	2.483	2.388	2.414
11	3.311	—	2.462	2.567	2.485	2.497
12	3.612	—	2.538	2.642	2.572	2.573
13	3.913	—	2.607	2.712	2.650	2.642
14	4.214	—	2.671	2.776	2.723	2.707
15	4.515	—	2.730	2.835	2.790	2.767