

Table 2. Transport properties of organisms of different sizes. c_0 is c for Sh_0 . $D_v = 5 \times 10^{-8} \text{ cm}^2 \text{ s}^{-1}$. Particle concentrations calculated assuming that each type of particle occupies 10^{-6} of the total volume

Type:	Bacterium	Flagellate	Small dinoflagellate	Large dinoflagellate
Diameter (μm)	1	5	25	125
c_0 ($\mu\text{m}^3 \text{ s}^{-1}$)	31.4	157	790	3930
Volume (μm^3)	0.52	65	8181	1.02×10^6
P (cells cm^{-3})	1.9×10^6	1.53×10^4	122	0.98
Speed ($\mu\text{m s}^{-1}$)				
v , swimming	39	121	373	1149
w , sinking	0.24	1.52	10.0	63.4
On marine snow	1000	1000	1000	1000
Sherwood numbers (Sh)				
Swimming	1.53	2.98	6.66	15.8
Sinking	1.01	1.18	2.35	6.33
On marine snow	3.43	5.50	9.05	15.12
Shear $\gamma = 0.1 \text{ s}^{-1}$	1.05	1.25	2.34	4.5
Shear $\gamma = 0.1 \text{ s}^{-1}$	1.02	1.08	1.4 ^a	3.18
Shear $\gamma = 0.1 \text{ s}^{-1}$	1.00	1.02	1.13	1.7 ^a
c ($\mu\text{m}^3 \text{ s}^{-1}$)				
Swimming	48	468	5230	62050
Sinking	32	185	1850	24860
Shear $\gamma = 0.1 \text{ s}^{-1}$	33	196	1840	17640
k (s^{-1})				
Pure diffusion	6.0×10^{-5}	2.3×10^{-6}	9.6×10^{-8}	3.8×10^{-9}
Swimming	9.1×10^{-5}	7.2×10^{-6}	6.3×10^{-7}	6.2×10^{-8}
Sinking	6.1×10^{-5}	2.8×10^{-6}	2.3×10^{-7}	2.4×10^{-8}
Shear $\gamma = 0.1 \text{ s}^{-1}$	6.3×10^{-5}	3.0×10^{-6}	2.2×10^{-7}	1.8×10^{-8}

^a Sherwood numbers extrapolated from Eqs. 6 & 7