ESI

Novel stabilisation of emulsions by soft particles: polyelectrolyte complexes

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Figure S1. (a) Average particle diameter and (b) PDI *versus* x_{PSSNa} for aqueous PEC dispersions prepared from 0.5 g L^{-1} individual PEL solutions for freshly prepared dispersions (unfilled circles) and values 24 days after preparation (filled circles).

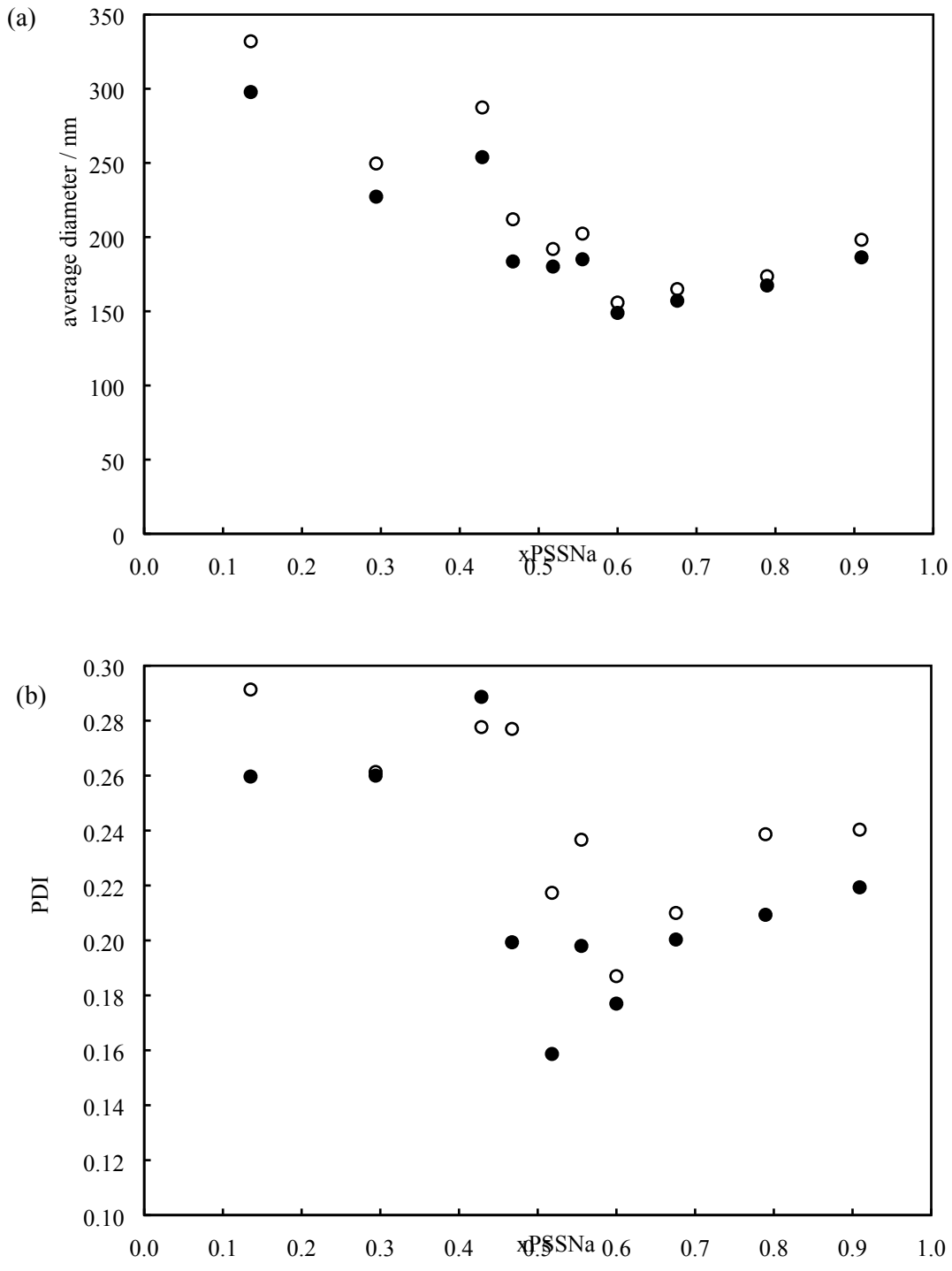


Figure S2. Variation of zeta potential with x_{PSSNa} for aqueous PEC dispersions in Figure S1.

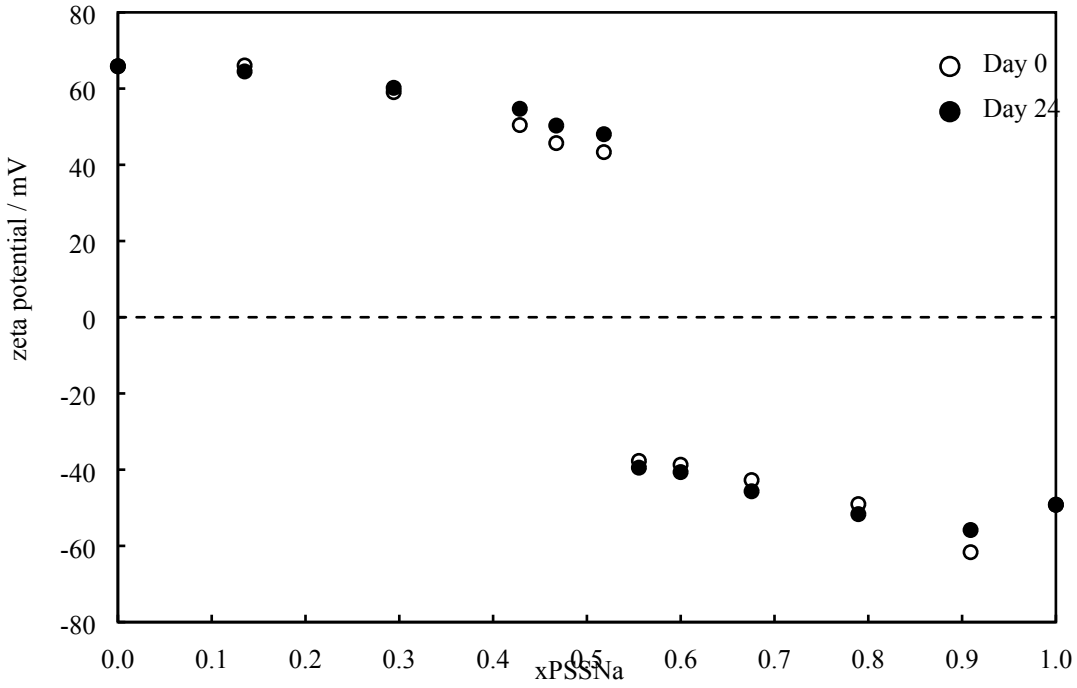
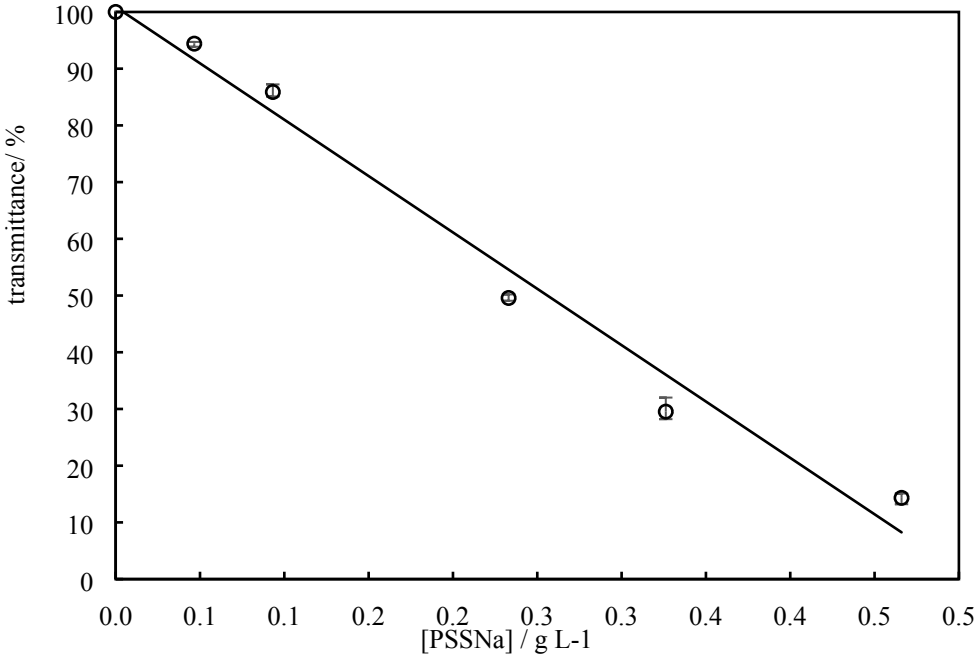


Figure S3. (a) Variation of the transmittance at λ = 500 nm of aqueous PEC dispersions prepared at $x_{PSSNa} \approx 0.54$ with concentration of PSSNa. (b) Plot of zeta potential *versus* [PSSNa] for the above dispersions.

(a)


100
90
80
70
60
50
40
30
20
10
0
transmittance/ %
0.0
0.1
0.1
0.2
0.2
0.3
0.3
0.4
0.4
0.5
0.5
[PSSNa] / g L-1

(b)

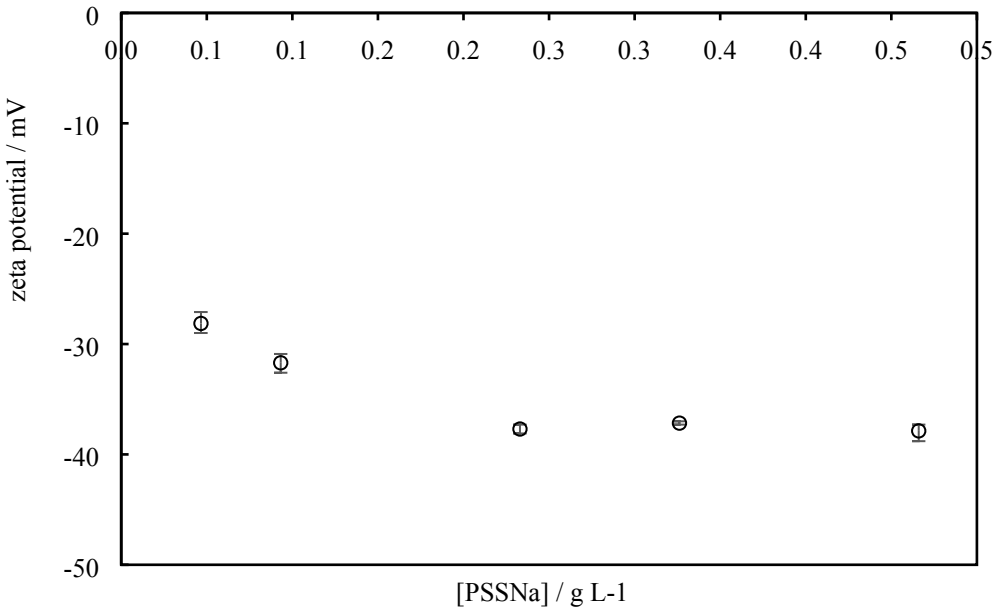

0
-10
-20
-30
-40
-50
zeta potential / mV
0.0
0.1
0.1
0.2
0.2
0.3
0.3
0.4
0.4
0.5
0.5
[PSSNa] / g L-1

Figure S4. (a) Average particle diameter and (b) PDI *versus* x_{PSSNa} for aqueous PEC dispersions prepared from 0.1 g L^{-1} individual PEL solutions of different molecular weight; Mw_{PSSNa} = 976 kDa, $Mw_{PDADMAC}$ = 160 kDa.

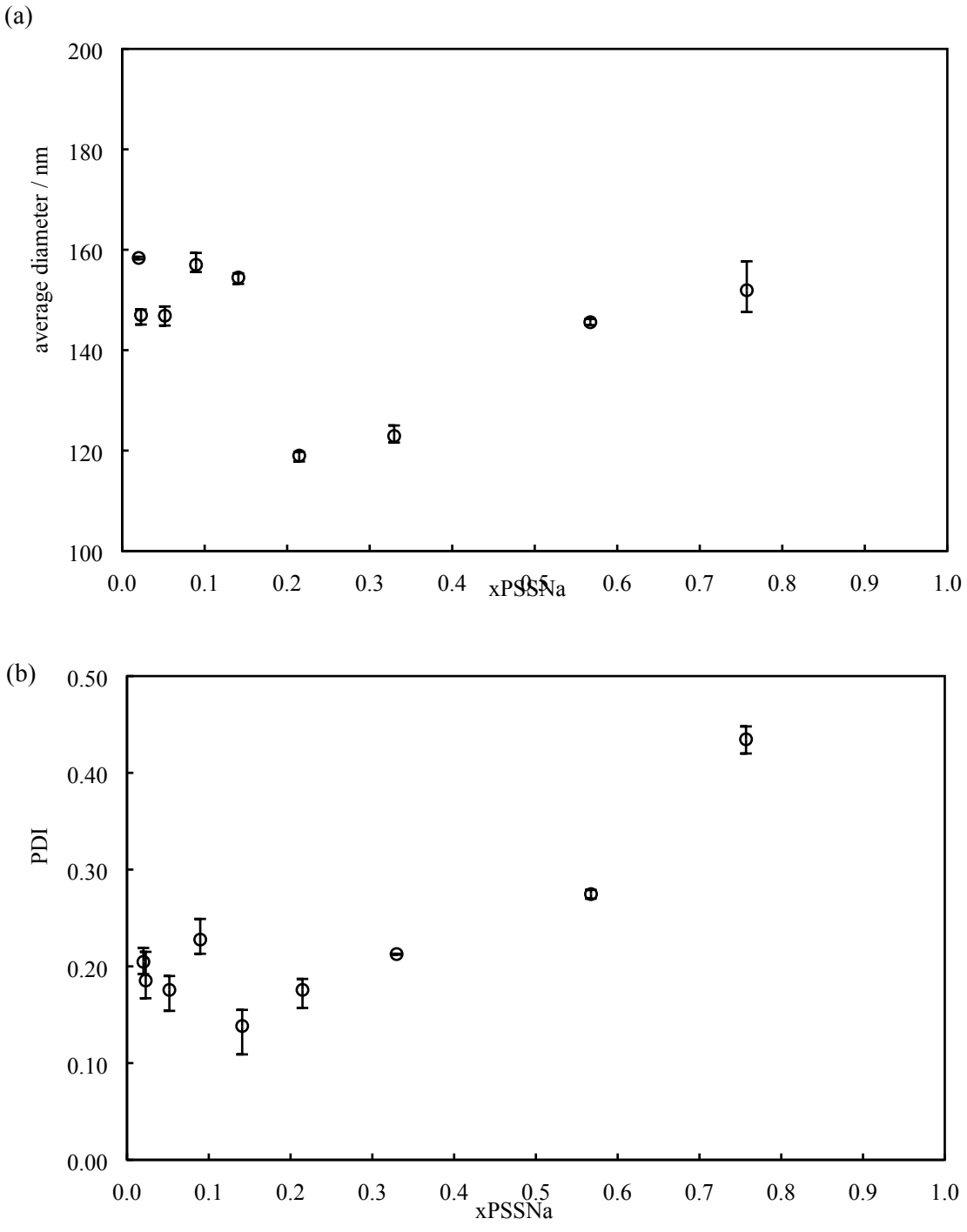
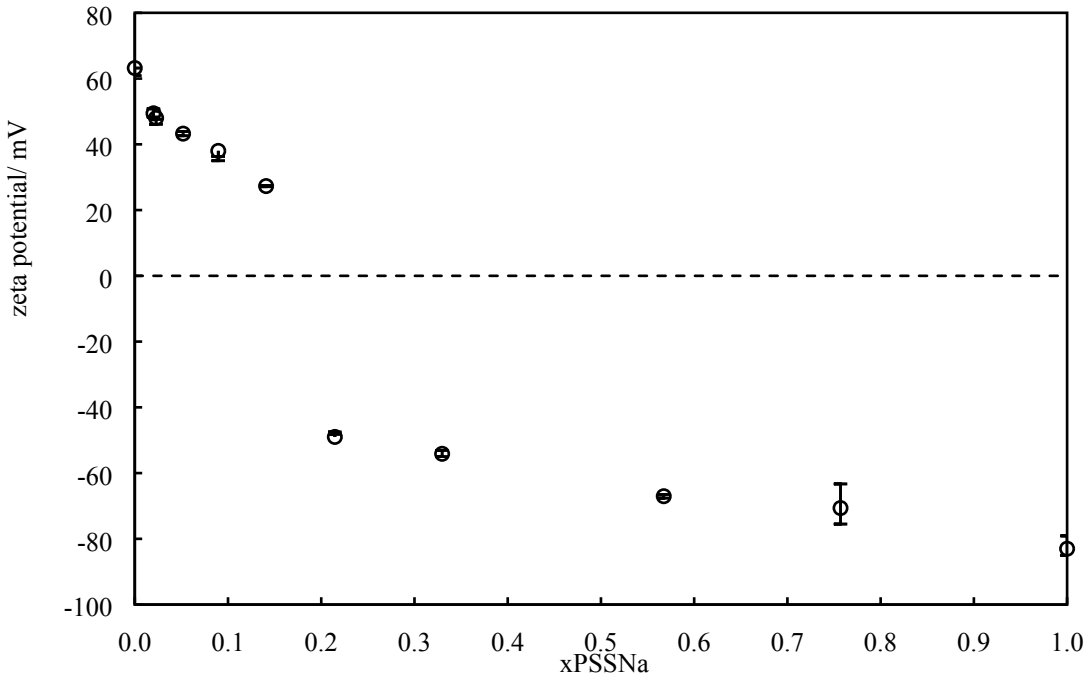


Figure S5. (a) Variation of zeta potential with x_{PSSNa} for aqueous PEC dispersions given in Figure S4, (b) appearance of dodecane-in-water emulsion (ϕ_o = 0.2) stabilised by PEC particles with x_{PSSNa} = 0.13 prepared from 20 g L^{-1} individual PEL solutions of different molecular weight.

(a)



(b)

Figure S6. Cryo-SEM images of dodecane-in-water emulsions (ϕ_o = 0.2) stabilised by PEC particles prepared from 25 g L^{-1} individual PEL solutions and x_{PSSNa} = 0.52. (d) is of the continuous aqueous phase.

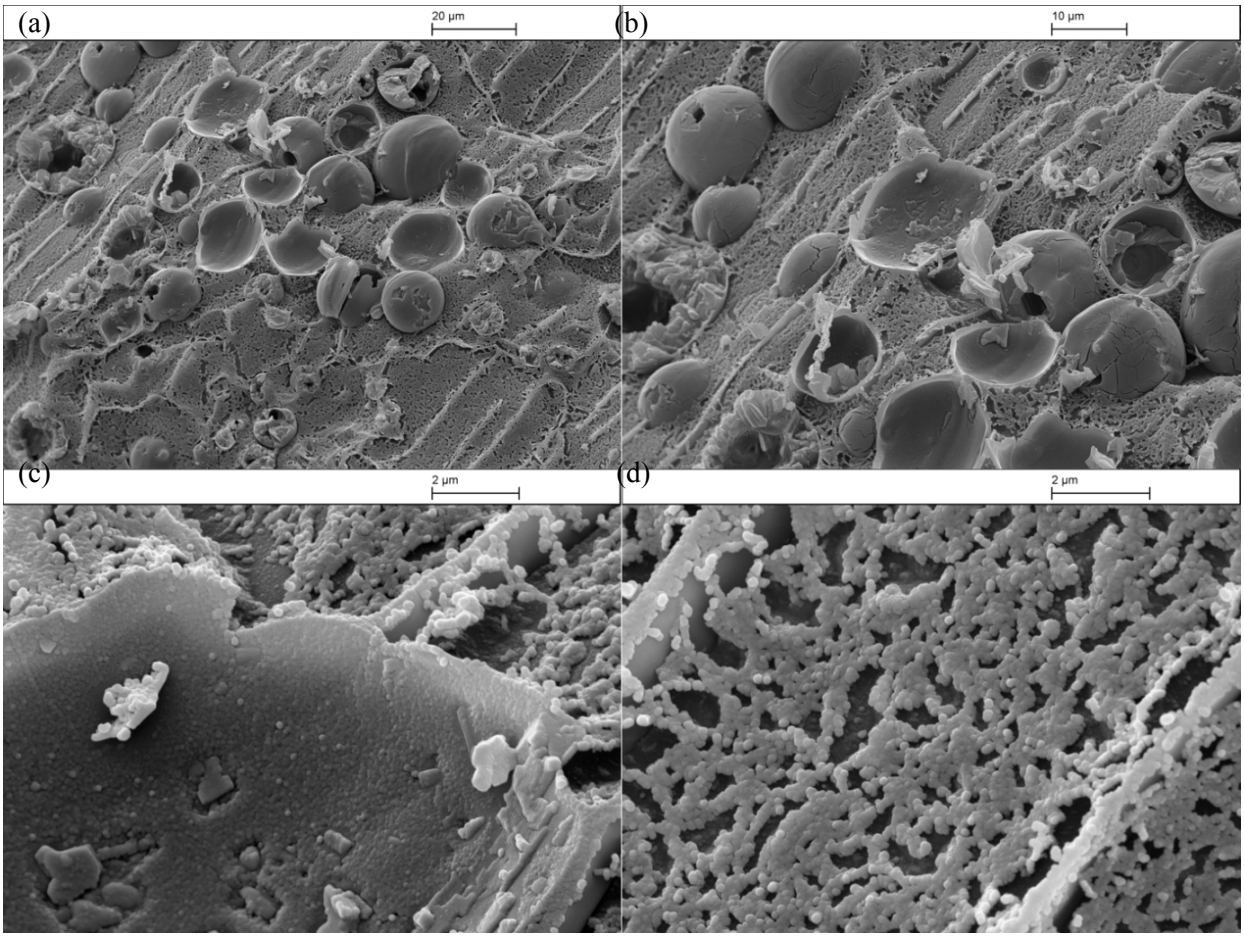


Figure S7. (a) Appearance of the 1 g L^{-1} PEL solutions in 5 M NaCl after hand shaking for 30 s for (1) PDADMAC and (2) PSSNa. (b) Appearance of the emulsions prepared between n-dodecane (ϕ_o = 0.2) and 1 g L^{-1} PEL solution after preparation for (1) PDADMAC and (2) PSSNa. Scale bar = 1 cm.

(a) (b)