Table S1 Surface properties of CnEAC at 25 ºC.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Surfactants | *cmc*/  (mmol/L) | *γ*cmc/  (mN/m) | *π*cmc  (mN/m) | *pc*20 | *cmc*/c20 | *Г*max/  (μmol/m2) | *A*min/  (nm2) |
| C10EAC | 27.4 | 34.44 | 35.95 | -0.53 | 8.12 | 1.41 | 1.18 |
| C12EAC | 5.02 | 33.65 | 37.56 | 0.52 | 16.69 | 1.45 | 1.15 |
| C14EAC | 0.29 | 33.00 | 37.60 | 2.11 | 37.18 | 1.22 | 1.36 |
| C16EAC | 0.07 | 31.71 | 39.16 | 2.91 | 56.45 | 1.06 | 1.57 |







Fig. S1 Effect of NaCl/Na2CO3 on the interface dilatation rheology of C14EAC solutions.



Fig. S2 The plots of the NaCl/Na2CO3-C16EAC complex moduli with different concentration of C16EAC.





Fig. S3 Effect of Na2CO3 concentrations of 1, 2 and 5 mmol /L on the C16EAC complex moduli.