Defoamer -

Mode of Action

BL Interface & Performance

EVONIK
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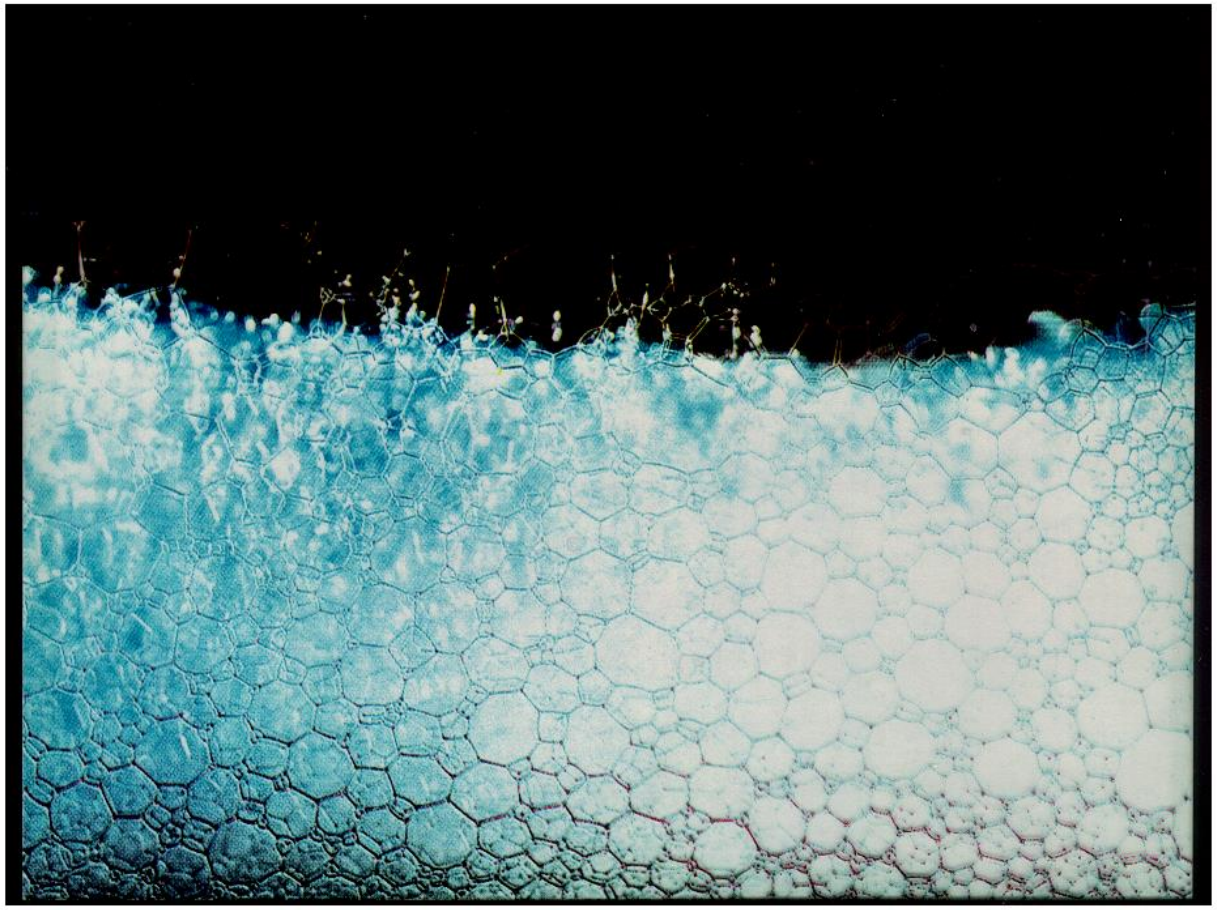
Stabilized Foam



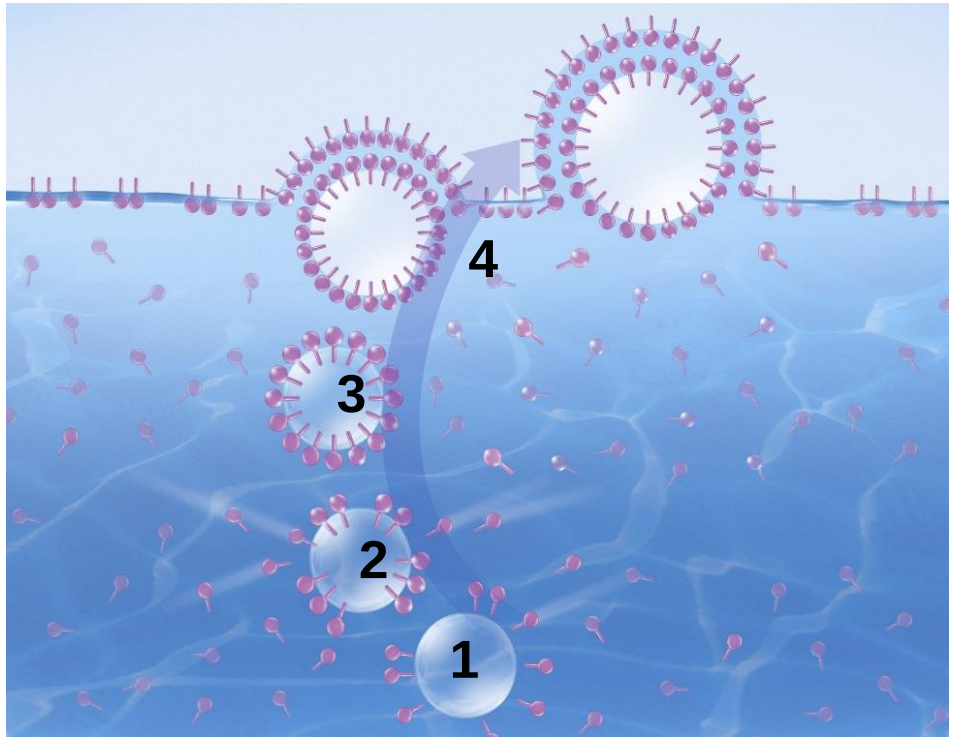
Gas Bubbles in Pure Liquids

When the bubble reaches the surface it bursts immediately

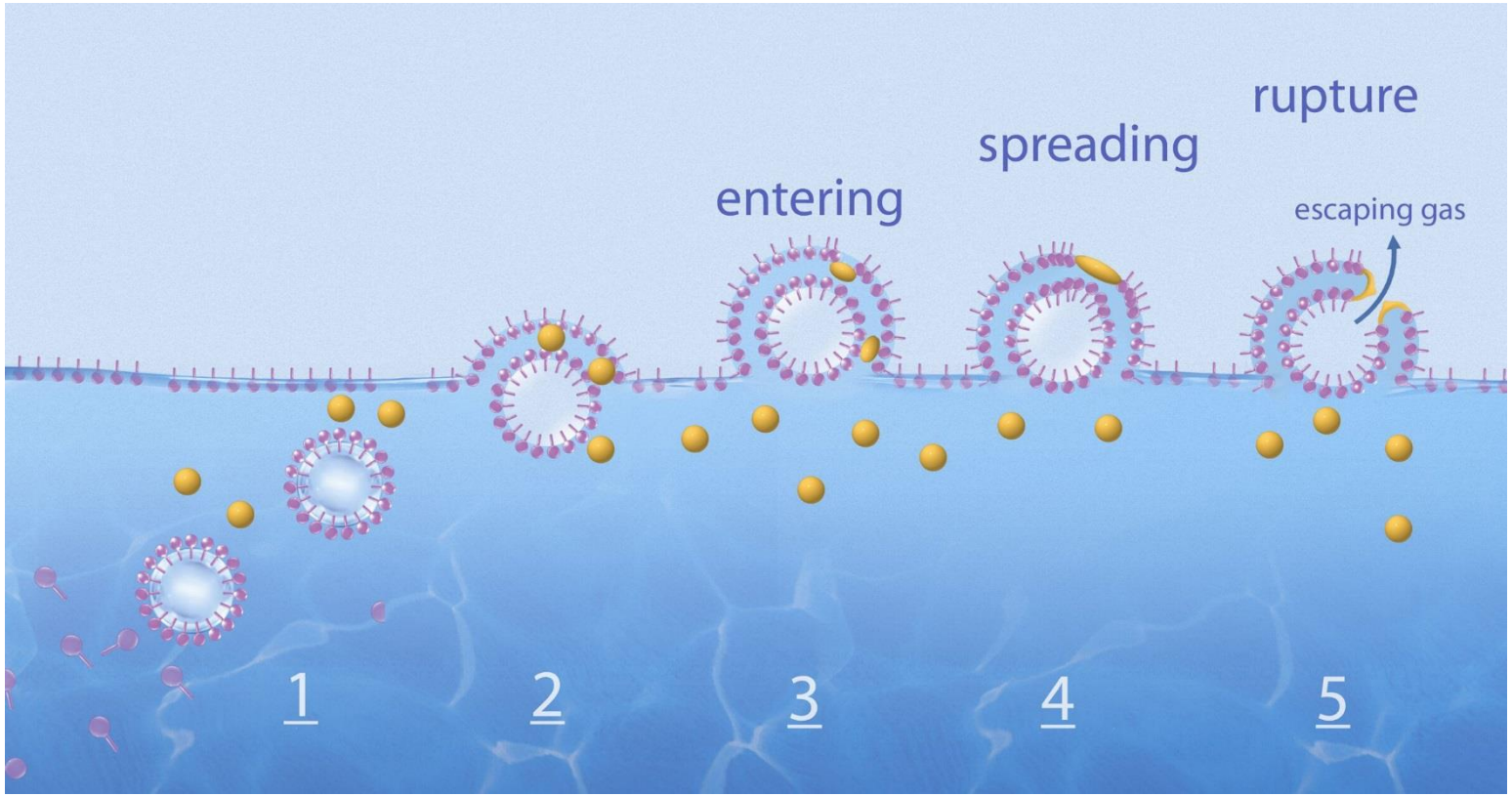
No stable foam can be build

Foam Formation

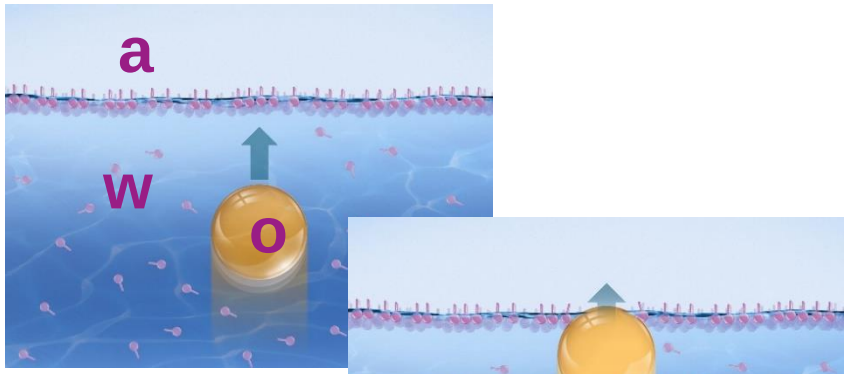
1. Introduction and dispersion of gas or air - formation of bubbles
2. Stabilization by dissolved amphiphilic molecules
3. Rising of stabilized bubbles
4. Penetration of the surface formation of the double layer

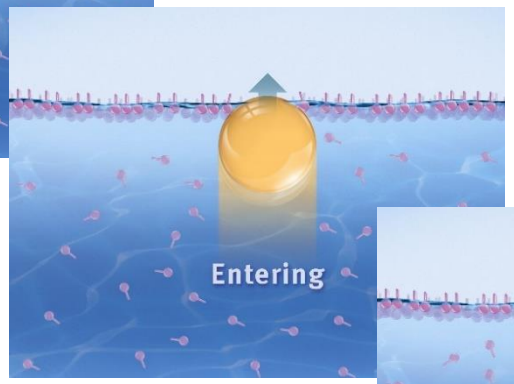


Defoaming: Mechanism Theory



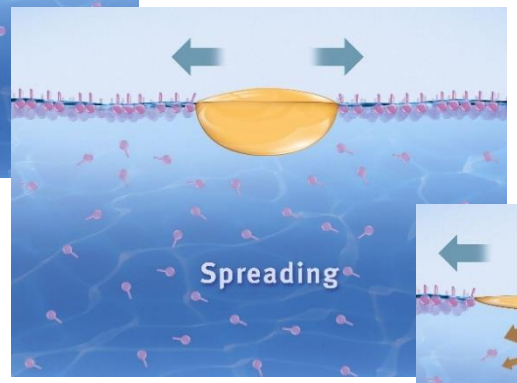
Defoaming: Entering-Spreading





Entering - E

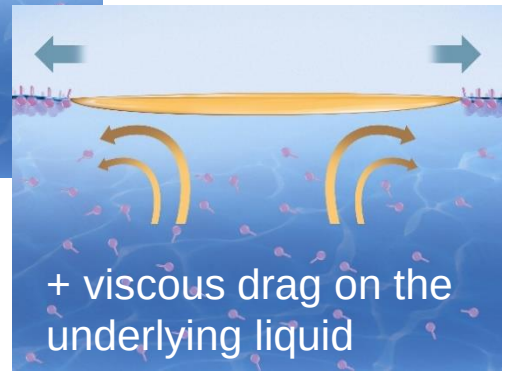
$E = g_{w/a} + g_{w/o} - g_{o/a} > 0$



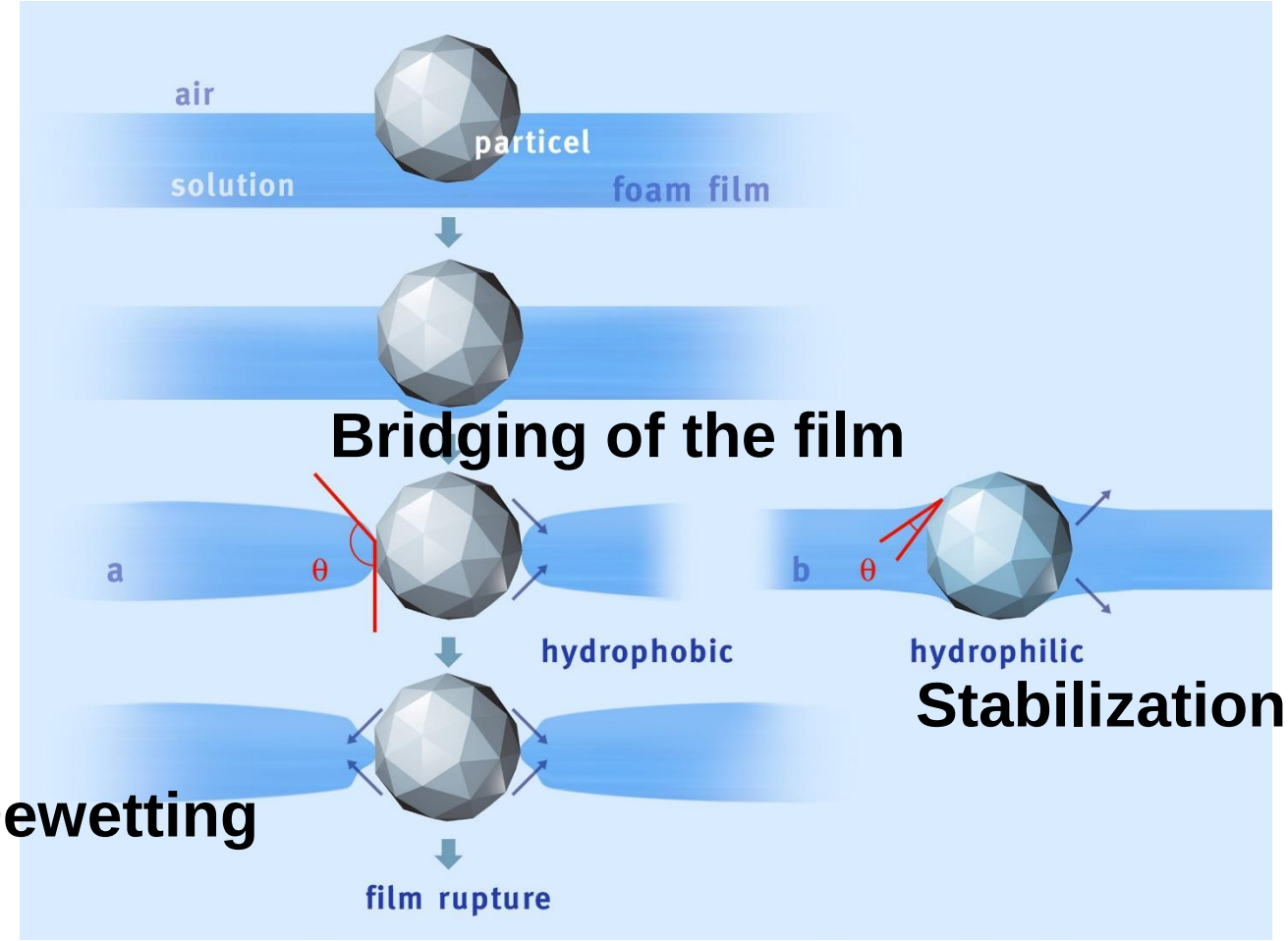
Destabilization

Spreading - S

$S = g_{w/a} - g_{w/o} - g_{o/a} > 0$



Defoaming: Dewetting



Properties of Defoamer

- Defoamer must be insoluble in the foaming medium
- The defoamer droplet must have an entering effect (low surface tension)
- Hydrophobic particles support the "dewetting mechanism“ and improve the defoaming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