

# TRACKER™ Automatic CMC

It can be useful to know the value of the Critical Micellar Concentration (CMC) for a given surfactant and under certain conditions (temperature, pH, ionic strength) because many properties of surfactant solutions change at CMC.

Indeed, quantities such as surface tension, electrical conductivity (for a charged surfactant), osmotic pressure, light scattering vary differently before and after CMC. For example, CMC is interesting:

- If you whether search for the presence of micelle, for example during polymerization reactions
- To predict emulsion stability: if the surfactant concentration exceeds CMC, the emulsion remains more stable
- To understand and choose molecules in formulating
- When the relationship between formulation and skin penetration is studied
- To anticipate the release of encapsulated active ingredients....

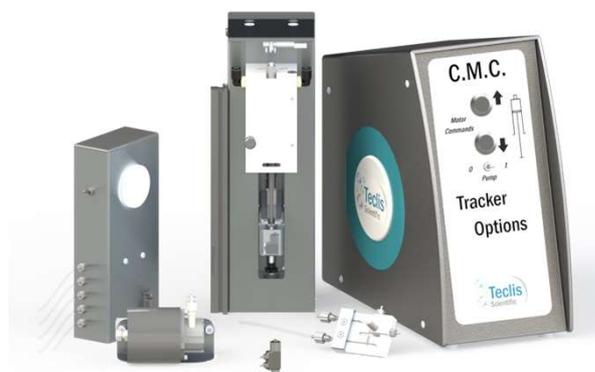
CMC is a good way to characterize and compare surfactants with each other, particularly in terms of temperature and salinity conditions. On the other hand, sweeping in concentration can provide information on the presence of impurities.

## AUTOMATIC CMC

When the surfactant concentration increases in the aqueous phase, some of the surfactant molecules are adsorbed at the water/air surface and the surface tension decreases rapidly (Figure zone I).

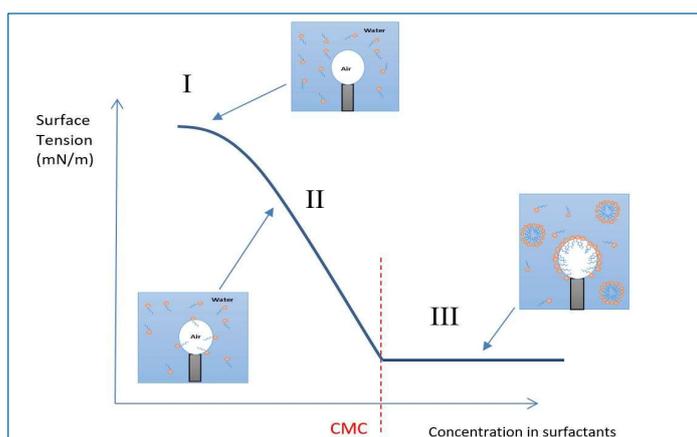
Above a certain value, a mono molecular film of surfactant is formed on the surface of the water and the surface tension decreases linearly with the logarithm of the concentration (Figure zone II).

When the surface tension no longer decreases, the critical micellar concentration is reached (CMC). The surfactants in solution are grouped in micelles within the liquid to stabilize each other (Figure zone III).



TRACKER™ CMC automatically determines the critical micellar concentration. The surface tension between the air and a surfactant solution at different concentrations is measured successively. The automatic CMC option allows up to 4 solutions of different concentrations to be used to extend and finely control the concentration range to be scanned. The dosed volume and concentration are fully controlled by an algorithm that calculates the concentration levels in order to optimize the accuracy of the CMC determination.

Low concentration measurements are very useful to define adsorption models, but they can be difficult to perform due to the presence of impurities. To facilitate measurements and eliminate these impurities, TRACKER™ CMC has a panel that controls the automatic cleaning cycles.



### Technical specifications

Compatibility	TRKS, TRKH
Cleaning mode	Automatic
System	Liquid / Liquid – Liquid / Gas