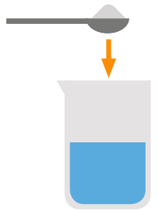
MOLECULAR COCKTAILS: FOAMS & AIRS

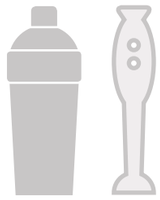
Foams and airs are often utilised to modify the texture and flavour of cocktails. They are usually created by the use of a number of agents broadly referred to as surfactants. Both the agents and techniques used affect the type of foam created.

THE METHOD



1

A surfactant is added to the cocktail mixture, or the liquid from which the foam will be made. A number of different agents can be used as surfactants (see below).



2

The foam can be generated using a hand blender, or shaking in a cocktail shaker. Another method is to use a cream whipper, which forces nitrous oxide (N_2O) into the liquid.

AGENTS TO MAKE FOAMS

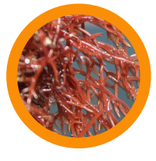
The agent chosen depends on the type of foam required. Below are four common agents used to create cocktail foams.

EGG WHITE

10% protein.
Mousse-like foam.

LECITHIN

From egg yolk or soy.
Makes big bubbles.



AGAR-AGAR

Seaweed extract.
Wet, sloppy foam.

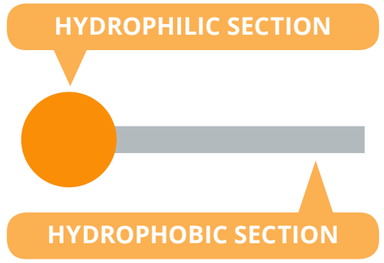
GELATINE

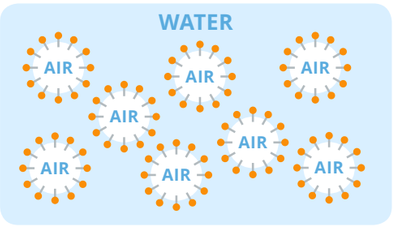
From animal collagen.
Stable, elastic foam.

A.X. FIZZ

Amaretto and Xanté pear liqueur shaken with lemon, sugar and soya extract. Long and fresh like the Prince of Bel Air.

THE SCIENCE





Surfactants stabilise air bubbles

Surfactant molecules contain both hydrophilic (water-loving) and hydrophobic (water-hating) regions. They arrange themselves around air bubbles in the water, with the hydrophilic sections dissolving in water and helping to stabilise the bubbles, preventing them from popping.

SHAKER

Aerates the cocktail to generate foam, but also chills. Chilling by shaking occurs more quickly than chilling by stirring.

HAND BLENDER

Whips air in to generate the foam. Most useful when the foam is being generated separate from the cocktail.

N_2O WHIPPER

Uses N_2O cartridges; pressure in the whipper can be up to 6 times atmospheric pressure, making N_2O dissolve.