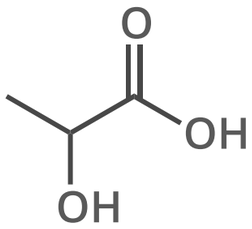
THE CHEMISTRY OF CAMEMBERT

Camembert is a surface-ripened cheese made from cow's milk. What's behind its strong smell and gooey texture? This graphic takes a look.

WHY DOES CAMEMBERT SOFTEN AS IT RIPENS?

LACTIC ACID

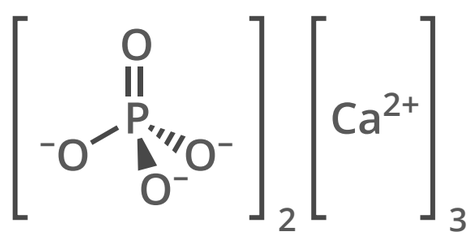
Formed by the breakdown of lactose in the cheese



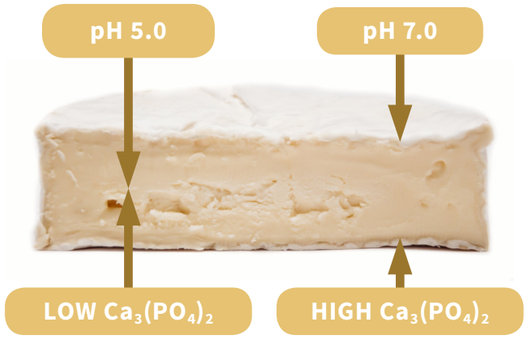
pH 4.6 → **pH 7.0**

As the lactic acid is broken down by the surface mould, the acidity of the cheese decreases.

Lactic acid is formed by the breakdown of lactose in the cheese. The surface mould that forms on the camembert, called *penicillium camemberti*, can then break down this lactic acid into carbon dioxide and water. This raises the pH of the cheese, from around 4.6 to 7.0.

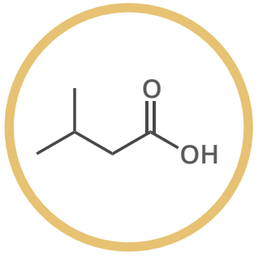


CALCIUM PHOSPHATE

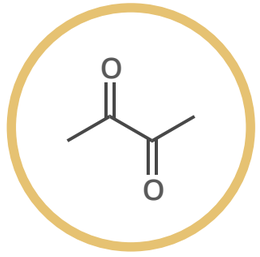


Calcium phosphate helps hold casein protein micelles together in the cheese. As lactic acid is broken down and pH increases, calcium phosphate becomes less soluble, and precipitates on the cheese's surface. This draws the calcium phosphate from the cheese's centre, making it soften.

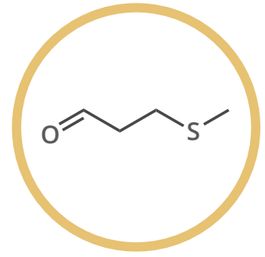
WHAT MAKES CAMEMBERT SMELL SO STRONG?



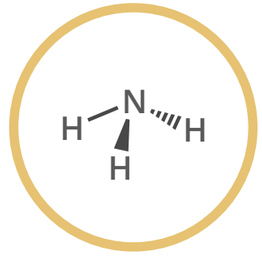
ISOVALERIC ACID



DIACETYL



METHIONAL



AMMONIA

A range of compounds contribute to camembert's aroma. These include isovaleric acid, which smells of feet, diacetyl, which has a buttery aroma, and methional, which smells like boiled potatoes. Other compounds are 1-octen-3-one (mushroom), methanethiol (cabbage) and butyric acid (sweaty). The smell of ammonia increases as the cheese ripens and amino acids are deaminated.