

The Chemistry of Champagne

5

The approximate number of litres of carbon dioxide gas released from a typical 0.75 litre bottle of champagne.

20 MILLION

The approximate number of bubbles of carbon dioxide released in a single champagne flute (assuming a volume of 0.1 litres)

5-6 atmospheres

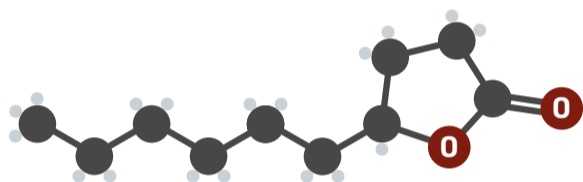
The pressure in a champagne bottle. For comparison, most car tyres have an approximate pressure of 1.5 to 2.5 atmospheres.

20%

Percentage of carbon dioxide lost from champagne via bubbles. The rest is lost by direct diffusion from the liquid.

As the bubbles in champagne rise to the surface, they carry flavour and aroma compounds with them; when they burst at the surface, the compounds are dispersed in fine liquid droplets, with some being significant contributors to champagne's aroma. A selection of identified compounds in champagne bubbles are shown here.

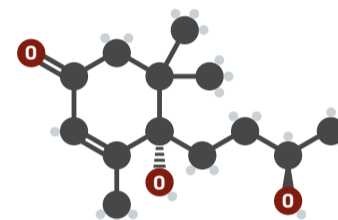
γ -Decalactone



Fruity, peachy and sweet aroma

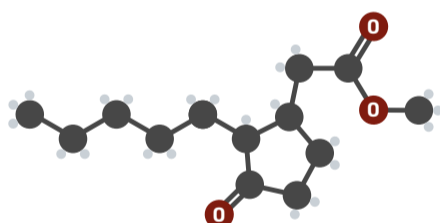
KEY: ● Carbon ○ Oxygen ● Hydrogen

7,8-dihydrovomifoliol



Contributor to fruity aroma

Methyl dihydrojasmonate



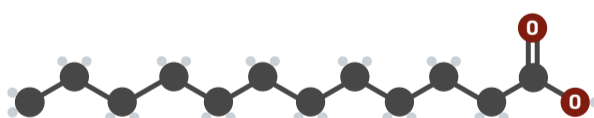
Sweet, fruity, floral aroma

Ethyl myristate



Sweet and waxy aroma

Dodecanoic acid



Dry and metallic notes

Palmitic acid



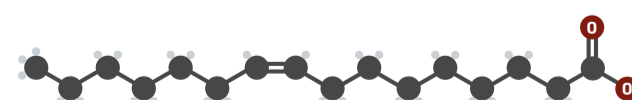
Waxy and creamy aroma

Decanoic acid



Acid and toasty aromas

Palmitoleic acid



Oily and waxy aroma

