The Chemistry of Port

COMPOUND INTEREST




Ruby Port

Aged for a short time in oak vats. Reserve Ports and Late Bottled Vintage Ports are aged for slightly longer; Vintage Ports are aged for two years in vats then many more in bottles.

Tawny Port

Aged for longer periods in oak barrels. Tawny Ports come in 10, 20, 30 and 40-year-old blended varieties, reflecting the number of years of barrel ageing they've undergone.

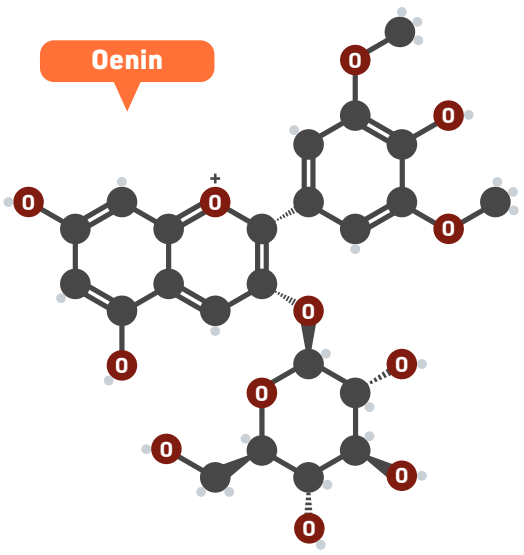
Rosé Port

The newest style of port wine, only introduced in the late 2000s. Technically, it is a ruby port, but made with minimal contact with the grape skins that give ruby port its colour.

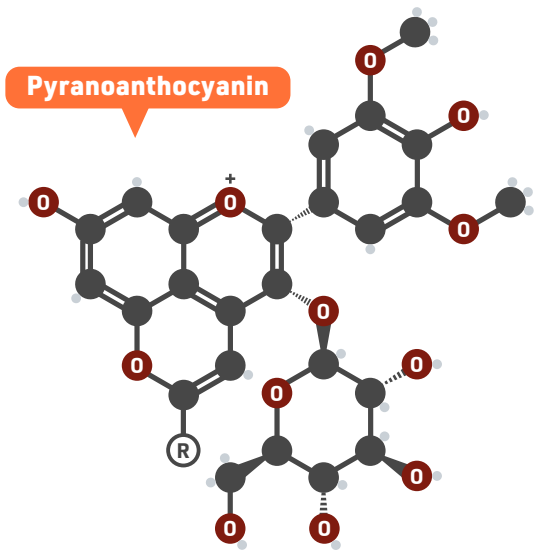
White Port

White ports are made from white grapes. Like ruby ports, they're aged for two to three years in oak vats before bottling. There are several different styles, including aged varieties.

Colour

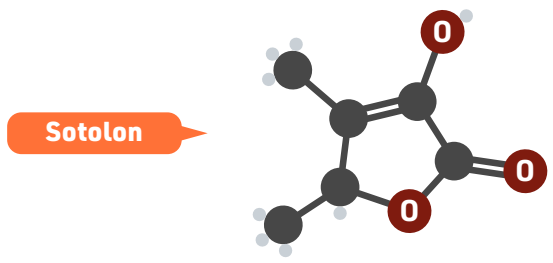


The red colour of port wines is caused by anthocyanins such as oenin which are found in grape skins. The concentration of these compounds decreases as port ages.

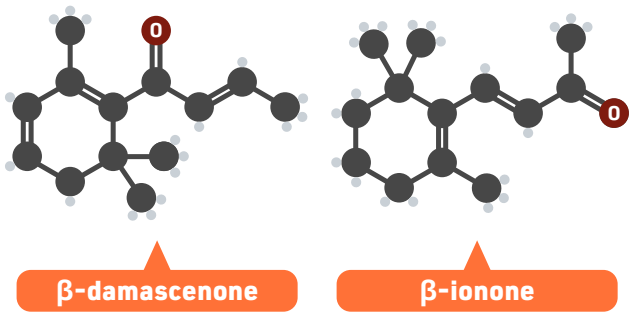


Anthocyanins form pyranoanthocyanins during aging, responsible for a change towards orange hues. They also form polymeric pigments over time, giving orange-brown colours.

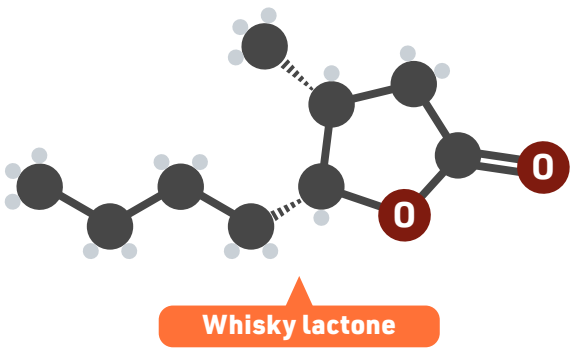
Flavour and aroma



Sotolon is a key odour molecule in aged port. Its concentrations in port correlate with the length of aging. Sotolon contributes an aroma described as nutty and spice-like.



Bottle-aged ports develop floral notes, contributed to by some of the molecules above. Barrel-aged ports gain some compounds, such as lactones, from barrel wood which also contribute to flavour and aroma.



KEY: Carbon · Oxygen · Hydrogen · Variable part of molecule