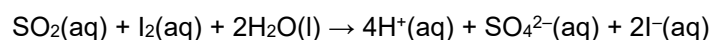


Vintage titrations: sulphur dioxide in wine

All wines contain sulphur dioxide. It is essential to add a certain amount to prevent the wine deteriorating and becoming unpalatable. The sulphur dioxide destroys bacteria that may cause unwanted secondary fermentation and it also acts as an antioxidant. However, if too much is added it will itself impart an unpleasant taste.

- Devise an analytical method to compare the amount of sulphur dioxide present in the samples of wine provided.

Free sulphur dioxide is present in wine as $\text{SO}_2(\text{aq})$, $\text{HSO}_3^- (\text{aq})$ and $\text{SO}_3^{2-}(\text{aq})$. It is determined by titrating the acidified wine with iodine, using starch as an indicator.



Most of the sulphur dioxide in wine is combined with various acids and ketones, therefore to break down these compounds the wine is first treated with sodium hydroxide and acidified. The titration then gives the total sulphur dioxide.

Health & Safety

In planning this activity, you should consider health and safety. Check your plans with your teacher before implementing them.

Eye protection (to BS EN166 3) must be worn.

Sodium hydroxide - Corrosive to skin and eyes

H_2SO_4 - Corrosive to skin and eyes

Credits

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Health & safety checked May 2018

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