Learning activity 1

Caramelisation of sucrose and fructose

**Objective**

To examine the temperature for different sugars to caramelise

**Principle**

Heating sugar at high temperature can form brown caramel pigment with caramel flavour. Different sugars have different caramelisation temperature.

**Equipment & materials**

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| **Equipment** | **Materials** |
| Scale  Saucepan  Thermometer  Timer | Sucrose 50g (granulated or caster)  Fructose 50g  Water 25ml x 2 (50ml) |

**Procedure**

1. Dissolve 50g sucrose with 25ml water in a saucepan.
2. Heat the solution and stir all the time.
3. Use the thermometer to keep checking the temperature of the syrup.
4. Record the temperature for the initial brown pigment formed.
5. Keep heating for 1 more minute.
6. Record the observation of the colour changes and the aroma.

Repeat the steps using fructose.

**Results**

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| --- | --- | --- | --- |
| **Sample** | **Temperature oC of initial brown pigment formation** | **Colour of the final syrup** | **Aroma of the final syrup** |
| Sucrose |  |  |  |
| Fructose |  |  |  |

**Questions**

1. Which sugar forms brown pigment faster?
2. What is the caramelisation temperature for each sugar respectively?