

PARTIAL THERMAL DEGRADATION OF CARBON DIOXIDE FOAMED SACCHARIDES WITH PROTEIN INCLUSIONS

Important -- Since the product of this experiment is edible, cleanliness is necessary. You will work in pairs, and if you are to finish in time, with coordination.

1. Into a clean 250 mL beaker, weigh out 75 g of sucrose. Transfer to a clean 400 mL beaker.
2. Into the 250 mL beaker weigh out 62 g of a solution of glucose, fructose and maltose.
3. Pour the glucose/fructose/maltose solution into the 400 mL beaker. Use a total of 19 mL water in two batches to rinse the small beaker with a stirring motion. Add rinsings to the large beaker.
- 4a. Heat this mixture slowly. Stir constantly. Bring to a boil. Use as cool a flame as will maintain boiling but avoid burning the saccharides.
- b. Weigh out 9.5 g of solidified mixed esters on a watch glass.
5. Add the solidified mixed esters to the boiling glucose/fructose/maltose-sucrose solution.
- 6a. Continue to heat and stir. Use paper towels to hold the beaker.
- b. Weigh out .3 g of NaCl and 55 g of protein pellets on waxed paper.
7. When the temperature reaches 138 C, add the NaCl and protein pellets (arachin, conarachin and oleic-linoleic glycerides).
- 8a. Continue to stir.
- b. Weigh out 3.7 g of NaHCO_3 on waxed paper, and obtain 1.3 mL of 4-hydroxy-3-methoxy-benzaldehyde. Prepare a pad of paper towel. Lightly coat a one-foot square of aluminum foil with solidified mixed esters.
9. When the temperature reaches 154 C, remove the flame, place the beaker on a paper towel near the Al foil. Remove the thermometer.
10. While one partner holds the beaker and is prepared to stir, the other adds the 4-hydroxy-3-methoxy-benzaldehyde and NaHCO_3 . Stir vigorously. When the mixture nears the top of the beaker, pour the mixture on the Al foil and spread thinly.
11. When cool, break up the product and consume at will.
12. Clean all apparatus.