

Fat Content in Hamburger

Introduction:

Many foods contain fat, which allows for the foods to taste better. However, consuming too much fat is unhealthy. The fat content in some foods is regulated by law. Regular ground beef can contain a maximum of 30% fat while lean ground beef can contain no more than 15% fat. Some grocery stores have lower maximum levels than what the law states. In this experiment, you will compare the amount of fat in different types of ground beef.

Purpose:

The purpose of this laboratory is to determine the amount of fat in ground beef and determine which type of ground beef contains the most fat.

Materials:

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| 400 mL beakers | 25 mL glass beakers |
| stirring rods | analytical balances |
| 8- 125 mL bottles of hexane | 8-10- glass petri or crystallizing dishes |
| ground meat sample | |

Safety:

- Always wear safety goggles and an apron in the laboratory
- Do not use hexane near any flames, as the hexane vapors are very flammable.

Procedure:

1. Mass 25 g of uncooked, ground meat on an analytical balance and place it in a 400 mL beaker. Record the exact mass and the type of meat sample on the data table.
2. Add 25 mL of hexane to the meat and mix thoroughly with a glass stirring rod for about 15-20 minutes. CAUTION: Do NOT use the hexane flames near any flame since its vapors are very flammable.
3. Record the mass of one half of a glass petri dish on the data table.
4. Carefully drain the hexane solvent into the massed petri dish.
5. Repeat steps 2-4 one or two more times.
6. Allow the solvent to evaporate overnight.

- Once all of the solvent has evaporated, re-mass the petri dish and residue. The residue should be the fat in the ground meat sample.

Data Table:

| Type of meat sample | Mass of meat sample (g) | Mass of petri dish (g) | Mass of petri dish and fat (g) | Mass of fat (g) | % of fat in meat sample |
|---------------------|-------------------------|------------------------|--------------------------------|-----------------|-------------------------|
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Calculations:

- Calculate the amount of fat in each type of meat.
- Determine the percent of fat in the meat sample by dividing the mass of fat by the mass of the meat sample and multiplying by 100.

Questions:

- What is the purpose of the hexane?
- Which type of meat had the most fat?
- Design an experiment that would determine the amount of water in each of the meat samples.