Separating a mixture of iron, stones, salt and sand

**Equipment List:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| |  | | --- | | * Mixture * Magnet | | * Water * Paper Towel | | * Bunsen Burner * Matches * Gauze mat * Tripod * Gas | * Sieve * Beaker x 3 * Petri Dish x 3 * Safety Glasses |

**Method:**

1. Gather the equipment (Put safety glasses on)
2. Place petri dish on scale and zero the scale.
3. Put mixture in a petri dish and weigh the mass of the mixture.
4. Place a beaker under a sieve and pour mixture into the sieve. This will separate the stone from the iron, sand and salt.
5. Hold a paper towel between the magnet and the mixture and collect iron from the mixture.
6. Move the collected iron on the paper towel to another petri dish. Move the magnet away from the paper towel to allow the iron to drop into the petri dish.
7. Repeat steps 5-6 until all the iron is removed from the mixture.
8. Put the mixture into a beaker and add 50ml of water to the mixture.
9. Stir the mixture until all of the salt has **dissolved**.
10. Put filter paper into a funnel and place the funnel into another beaker.
11. Remove the sand by pouring the water over the funnel. The salt water **solution** will move through the filter paper and the sand will remain in the beaker or on top of the filter paper.
12. Set up the bunsen burner and place the beaker with the **solution** on top of a gauze mat to bring to boil. This will cause the water to **evaporate** and the salt will remain.
13. Weigh each of the separate **substances** (make sure you zero the scale with the petri dish on before adding the substance to weigh)

**Questions:**

1. What is the total mass of the mixture: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the mass of the different substances & percentage (%):

Stones: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Iron: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sand: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Salt: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. In a perfect world we would expect % stones, % sand, % iron + % salt to equal 100%. What factors may have caused errors in your results?

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