

Unknown mixtures lab report



**ASSIGN
BUSTER**

-Unknown Mixtures Lab- Purpose: The aim of this experiment was to find out the two substances of the unknown mixture from salt, sugar, dirt, and baking soda by looking at its properties. Hypothesis: Find the unknown substance by testing it out by heating it, pouring water, vinegar, and observing it .

Procedure: 1) Materials- * 100ml of water * Vinegar * Bunsen Burner * 2 beakers * 1 spatula 2) First, do steps (3-6) to find out the properties of salt, sugar, dirt, and baking powder. 3) Observe and record the appearances of the four known substances. 4) Burn the known substances one by one to see what will happen. When it starts to burn take the beaker off of the burner. 5) Add water to all substances. Make sure to stir well (until the salt and sugar dissolve) to see how each substance reacts with water 6) Add vinegar to all substances. Make sure to stir well (until the salt and sugar dissolve) to see how each substance reacts with vinegar 7) Observe your unknown substance and write down how it looks 8) Add water to the unknown substance.

Check to see if it turns to mud and that the white substance dissolves. 9) Heat up unknown substance until it starts to burn. Check and see if the substance starts to turn brown and smell good and dry up and crack. This is to see if the unknown substance is a combination of dirt and sugar. Safety Precautions- * Remember to wear closed shoes just in case someone drops something like glass and it lands on your foot. * Always wear goggles, and for girls tie their hair, when near a burner so it doesn't burn your hair or get something in your eye. Be careful not to drop the beakers so that there will be no danger of accidentally stepping on glass. Observations- The sugar turned brown and smelled good when heated, salt turned black and smelled like burnt rubber when heated, dirt turned to mud when water was added,

and baking soda started to bubble when vinegar was added. DATA: TABLE 1: CHARACTERISTICS OF SUBSTANCES

SUBSTANCE	Characteristics
Sugar	Appearance Sugar Heat: sugar turns brown and smells good Water: sugar dissolves Vinegar: sugar dissolves
Salt	White, shiny, looks similar to sugar. Heat: turns black, smells like burnt rubber Water: dissolves Vinegar: dissolves
Dirt	White, looks like sugar except it isn't shiny Heat: dries up and starts to crack Water: turns to mud Vinegar: turns to mud
Baking Soda	Brown, has bits of rock and dried grass in it Heat: Water: turns water white Vinegar: starts to bubble

| White, soft, kind of like flour | These are some of the characteristics and appearances of the four known substances after experimenting (heating, adding water, adding vinegar, observing) to find their properties.

This will help when trying to figure out the two substances in the unknown mixture. TABLE 2: UNKNOWN SUBSTANCE

Substance	Characteristics
Unknown	Appearance Result Unknown Water: the substance turned to mud and the white specks dissolved Heat: while the dirt turned hard, the white substance started to turn brown and smell good * pieces of rock and dried and grass * small white shiny specks mixed in Dirt and Sugar

| This is the data collected from observing the unknown substance.

From looking at table 1 and then comparing the appearance of the known substances to the unknown substance the unknown substance is the most similar to the appearances and characteristics of dirt and sugar. DATA ANALYSIS: The data collected states all the characteristics and appearances of the four known substances. This helps when trying to find the two substances in the unknown mixture. To gather the data the substances were

burned, added with water and vinegar, and observed. Then with the information of the known substances was compared with the characteristics of the unknown substances.

The unknown substance had characteristics similar to dirt and sugar, and so the unknown substance was experimented to check if they were really dirt and mud by adding water to see if it turned to mud and heating the substance to see if it would turn brown and smell good. CONCLUSION/EVALUATION/IMPROVEMENTS: The purpose of this experiment was to find out the two substances of the unknown mixture out of salt, sugar, dirt, and baking soda. For this experiment my hypothesis was correct.

The purpose of this experiment was achieved by observing and finding out the characteristics of each substance. The sugar turned brown and smelled good when heated, salt turned black and smelled like burnt rubber when heated, dirt turned to mud when water was added, and baking soda started to bubble when vinegar was added. According to table 1 the data shows that the unknown substance had similar characteristics to both sugar and dirt. And so to find out if my hypothesis was correct or not experiments were carried out based on tests that were characteristics of either sugar or dirt.

One experiment was heating the unknown substance to check if it would start drying up and bubbling brown. The other was adding water to test if it would turn into mud. Some mistakes that could be improved in the experiment next time is- making sure not to pour a lot of salt into the beaker when heating it, since there was a lot of salt when heating it the smell was more nastier and shocking. Also when heating the dirt not to let it burn for a long time because when washing it, it was hard to get some of the dirt off.