

Experiment 2.12 The Mass of Mixed Solutions

Purpose

- Experimentally determine if there is a change in volume when 2 liquids are combined to form a solid (precipitate).

Hypothesis

- No, there will be no change to the system because we are not adding or taking away any substances, simply combining them to make a new substance.

Materials

- 2 plastic vials with caps
- 10 mL graduated cylinder
- Lead nitrate solution
- Sodium chloride solution
- Electronic Balance

Procedure

1. Measure out 10 mL of the lead nitrate solution in the 10 mL graduated cylinder. CAREFUL NOT TO SPILL ANY OF THE LEAD NITRATE!
2. Pour the 10 mL of solution into one of the plastic vials.
3. Measure out 10 mL of the sodium chloride solution in the 10 mL graduated cylinder. CAREFUL NOT TO SPILL ANY OF THE SODIUM CHLORIDE!
4. Pour the 10 mL of solution into the second plastic vial.
5. Place both vials on the balance and record to the nearest 0.01 g.
6. Pour the sodium chloride solution into the lead nitrate solution.
7. WAIT 5 MINUTES. What do you see happening?
8. Place both vials back on the balance and record the mass to the nearest 0.01 g.
9. Pour the solutions down the sink and make sure to rinse with water.

Data Tables

Table 1

Mass of System Before Mixing	
Mass of System After Mixing	
Change in mass (Δm)	

Table 2

Group #	Change in mass (Δm)	Group #	Change in mass (Δm)
1	-0.07 g	9	0.00 g
2	-0.03 g	10	-0.03 g
3	-0.01 g	11	-0.01 g
4	0.00 g	12	-0.03 g
5	-0.04 g	13	-0.01 g
6	-0.05 g	14	-0.03 g
7	-0.01 g	15	-0.02 g
8	-0.01 g	16	0.00 g

Observations