

Lead compounds – precipitation reactions and pigments

Many lead compounds are insoluble and some of them are brightly coloured. In this experiment you will be observing some precipitation reactions of lead ions.

Follow the instructions in both parts of the experiment and record your observations and try to give explanations.

Part A

Instructions

1. Cover the worksheet with a clear plastic sheet.
2. Put one drop of lead nitrate solution in each box.
3. Add one drop of each of the solutions containing the anions indicated to the appropriate box.

	Hydroxide ions	Chloride ions	Bromide ions	Iodide ions	Carbonate ions	Sulphate ions	Chromate ions
Lead ions							

Questions

1. Which of the lead compounds observed appear to be good pigments?
2. What is the main disadvantage of using these compounds as pigments?

Part B

Instructions

1. Put one drop of lead nitrate solution into each box.
2. Add one drop of deionised water and one drop of tap water to the appropriate boxes.

	Deionised water	Tap water
Lead ions		

Question

1. What explanations can you give for your observations?



Health & Safety

Students must wear suitable eye protection (Splash resistant goggles to BS EN166 3).

Sodium hydroxide solution, $1 \text{ mol dm}^{-3} \text{ NaOH (aq)}$, is CORROSIVE.

Lead nitrate, $0.5 \text{ mol dm}^{-3} \text{ Pb(NO}_3)_2 \text{ (aq)}$ is a Reproductive Toxin, Causes eye damage, is a Specific Target Organ Toxin and a probable carcinogen.

Potassium bromide, $0.2 \text{ mol dm}^{-3} \text{ KBr (aq)}$, Sodium sulphate, $0.5 \text{ mol dm}^{-3} \text{ Na}_2\text{SO}_3 \text{ (aq)}$, sodium carbonate 0.5 mol dm^{-3} and Potassium iodide, $0.2 \text{ mol dm}^{-3} \text{ KI(aq)}$ are low hazard.

Potassium chromate, $0.2 \text{ mol dm}^{-3} \text{ K}_2\text{CrO}_4$ is a carcinogen, mutagen and skin sensitiser. It is also toxic to aquatic life.. Wear splash-proof eye-protection if transferring large amounts. Avoid skin contact.

Credits

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Health & safety checked May 2018

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