

GCSE-11-4 Making and testing predictions about precipitating salts

Apparatus (per group)

- Test tube rack x 2
- Test tubes

Chemicals (shared between groups)

- Salt solutions (all 0.1M, in dropper bottles)
 - Lead(II) nitrate
 - Sodium chloride
 - Silver nitrate (0.05M)
 - Zinc sulfate
 - Potassium nitrate
 - Sodium carbonate
 - Copper(II) sulfate
 - Potassium iodide
 - Calcium chloride
 - Barium chloride
 - Potassium sulfate
 - Cobalt(II) chloride

Waste disposal

All down the sink under a running tap. Dilute nitric acid will redissolve or loosen precipitates that stick to the tubes.

Predicting Precipitation

Solution 1		Solution 2		Formula of predicted precipitate	Colour of the precipitate
Soluble salt	Ions present	Soluble salt	Ions present		
Lead(II) nitrate		Potassium iodide			
Sodium chloride		Potassium nitrate			
Silver nitrate		Calcium chloride			
Zinc sulfate		Barium chloride			
Sodium chloride		Potassium sulfate			
Potassium nitrate		Sodium chloride			
Sodium carbonate		Cobalt(II) chloride			
Potassium nitrate		Copper(II) sulfate			
Copper(II) sulfate		Sodium carbonate			
Lead(II) nitrate		Barium chloride			

Experiment Hazard Assessment

Experiment: Making and testing predictions about precipitating salts

Reference: GCSE-11-5

Chemical hazards

Lead(II) nitrate (0.1M)	Serious health hazard	CLEAPSS Hazcard 57A Recipe Book 53
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Sodium chloride (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 47B Recipe Book 82
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Silver nitrate (0.05M)	No hazard at this concentration. May stain skin, clothing or surfaces	CLEAPSS Hazcard 87 Recipe Book 77
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Zinc sulfate (0.1M)	Irritant	CLEAPSS Hazcard 108B Recipe Book 106
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Potassium nitrate (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 82 Recipe Book 113
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Sodium carbonate (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 95A Recipe Book 80
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Copper(II) sulfate (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 27C Recipe Book 31
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Potassium iodide (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 47B Recipe Book 72
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Calcium chloride (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 19A Recipe Book 19
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Barium chloride (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 10A Recipe Book 10
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Potassium sulfate (0.1M)	No hazard at this concentration	CLEAPSS Hazcard 98B
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Cobalt(II) chloride (0.1M)	Serious health hazard	CLEAPSS Hazcard 25 Recipe Book 30
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Other hazards/precautions for teachers and technicians

None