

Inorganic Pigment Syntheses
PART 1
Supplies and Implementation Notes

Equipment Needs

(The following are totals for a 16 student lab section)

PART 1

Chemicals	Quantity
saturated sodium sulfate solution	200 mL
saturated barium chloride solution	200 mL
0.5 M sodium chromate	200 mL
0.5 M zinc sulfate	200 mL
6M NaOH	100 mL
0.5 M copper sulfate solution	200 mL
sodium bicarbonate	100 g
sodium dichromate	100 g
sulfur	50 g
acetone	rinse bottle
0.5 M iron (III) chloride	100 mL
0.25 M potassium ferrocyanide	100 mL
Supplies	Quantity
centrifuges	3
large filter paper	2 boxes
pH paper	3 bottles
crucibles	12
Bunsen burners	4
strikers	2
clay triangles	4
mortars and pestles	8
toothpicks	1 box
microscope slides	1 box
small filter paper for Buchner's	2 boxes
vials	4 per group
label tape	

PART 1 Implementation Notes

- These experiments have been performed in groups of two.
- When heating the starting materials for the chrome oxide green synthesis, the sample often catches on fire. Use the crucible lid to moderate the flame and keep the sample from splattering out of the crucible.

Inorganic Pigment Qualitative Analysis
PART 2
Supplies and Implementation Notes

Equipment Needs

(The following are totals for a 16 student lab section)

PART 2

Chemicals	Quantity
CaCO ₃	100 g
PbCO ₃ •Pb(OH) ₂	100 g
ZnO	100 g
Gypsum (CaSO ₄)	100 g
TiO ₂	100 g
3M HNO ₃	500 mL
3M HCl	500 mL
KI crystals	200g
10 % H ₂ SO ₄	500 mL
Supplies	
vials	6 per group
toothpicks	1 box
microscope slides	1 box
small test tubes	1 box
well plates	15

PART 2 Implementation Notes

- These experiments have been performed in groups of two.
- Prep the white pigments into labeled vials to create a known set appropriate for the number of groups. Give each group an unknown pigment in another vial
- PbCO₃ can be substituted for lead white [PbCO₃•Pb(OH)₂]