

Exploring Photographic Chemistry Supplies and Implementation Notes

Equipment Needs

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

Supplies	Quantity
4x5 sheets of water color paper	100
squares of cloth	30
clip frames	16
1 inch binder clips	32
foam brushes	8
plastic rinse basins	4
paint trays	4
fixer basin	1
negative sheets	varies
hair dryers	4
plastic sheeting for hoods	2

PART 1 Chemicals	Quantity
Gelatin	5g
Starch	10 g
sodium citrate	12 g
ammonium chloride	12 g
silver nitrate	12 g
sodium thiosulfate	1 kg

PART 2 Chemicals	Quantity
ferric ammonium citrate	200 g
potassium ferricyanide	200 g

Implementation Notes

- Gloves are strongly recommended for these experiments.
- These experiments are performed by individual students, not in groups.
- The room does need to be reasonable dark for preparation of the photosensitive chemicals and paper/cloth. Turn off all lights possible in the room and close blinds.
- Sunny days give faster and darker results. If your lab day is cloudy, then you might instruct your students to add 5 minute extra to the longest exposure time quoted.
- To keep the photosensitive chemicals from staining the lab, I line the hoods with plastic drop cloths and lab mat.
- “Negatives” are made by taking a digital photograph, making it black and white, reversing the values (making a negative) and then printing the image on a transparency sheet. Clip art images can also be used.
- Cyanotypes can also be effectively exposed using a black-light box, which may be available in your university’s art department.
- To make the fixer solution, combine 240.2g sodium thiosulfate with 1.0L water. The fixer will become cloudy and dark when it is spent, so be sure to replenish as needed. You may use a lot of fixer depending upon which experiments your students test. Be sure you have enough sodium thiosulfate on hand to make more.