

## BLEACH SOLUTION

The bleach solution is used as is with no further mixing or dilution. The bleach solution has a long shelf life and can be used until potency is lost.

## POST TREATMENT

Mix 1 part of Post Treatment with 10 parts water; for example, 1 ml of post treatment solution to 10 ml of water. This is very stable but should be discarded after one use.

## PROCESSING THE HOLOGRAM

1. Develop in the working solution developer for 2 minutes with constant agitation by rocking the tray.
2. Rinse by sloshing the hologram in distilled water for 10 seconds. Wash in running tap water for 3 minutes.
3. Bleach in bleach solution with hologram held vertically or with emulsion side **down** until it is transparent, normally less than 2 minutes. Then leave in the bleach for an additional minute. After bleaching, room light can be turned fully on.
4. Wash in running water for 3 minutes. Inspect the hologram in the wash and sponge off any visible powder-like precipitates before the final treatment in ascorbic acid under bright light.
5. Post treatment - after bleaching and washing take the hologram to a lighted room, and under a direct bright light, such as a desk lamp or the sun, soak the hologram in the post treatment working solution until the hologram turns from pink to a light brown color.
6. Wash hologram in water for 3 minutes. You can optionally add Kodak® photoflo or Photographers Formulary Formaflo to this final wash to reduce water spots from forming on the hologram.
7. Use a windshield wiper blade or rubber squeegee to squeegee the hologram. Hang hologram to dry or use hair dryer on warm temperature to dry. A reflection hologram cannot be viewed until it is dry.

Film and Plate supplies and other information on Holography contact Integraf at P.O. Box 586, Lake Forest, IL 60045 or telephone 708-234-3756. Fax no 708-615-0835.

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## JD-3 HOLOGRAPHY PROCESSING KIT

CATALOG NUMBER 04-3020

TO MAKE 20 4X5 PLATES OR 60 2 1/2 X 2 1/2 PLATES

The JD-3 was developed by and used in the Lake Forest College Holography Workshops at Lake Forest College. It is highly recommended by its director, Professor Tung H Jeong because it not only gives superior results for both reflection and transmission holograms made on Agfa Holotest film and plates, but is safer to use than JD-2 by hobbyists and elementary schools. Unlike JD-2 it does not contain potassium dichromate and sodium bisulfate. The added post-treatment using vitamin C turns the hologram to a reddish brown color, which reduces scatter noise and prevents print-out.

Do all the processing under the same condition as that for making holograms, i.e., use dim and indirect green light, so that after dark adaptation, you can barely see. By using white developing trays, or glass trays with white paper underneath, you can judge the density during development and clarity during bleaching.

## FOR YOUR CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read all the warning labels and chemical warnings on each package.

UREA AND ASCORBIC ACID may irritate the eyes and skin.

CATECHOL is a toxic central nervous system depressant, met hemoglobin former and convulsant; a severe eye, skin, and mucous membrane irritant. It is also a skin sensitizer. Poisoning may affect the liver and kidneys.

For your safety wear dust mask and gloves when mixing these solutions. Do not put bare hands in any solutions; wear rubber gloves. The user assumes all risks upon accepting these chemicals.

IF FOR ANY REASON YOU DO NOT WANT TO ASSUME ALL RISKS, PLEASE RETURN THE KIT WITHIN (30) DAYS FOR A CREDIT OR REFUND.

## WE RECOMMEND USING DISTILLED WATER ON ALL SOLUTIONS

### MIXING THE STOCK SOLUTIONS

#### STOCK SOLUTION A

Start with 750 ml of hot **distilled** water at approximately 100°F. Add to that the following chemicals **in order**, making sure each is completely dissolved before adding the next.

SOLUTION A	Cat# 04-3020	Cat# 04-3025
Chemical	Amount	Amount
Catechol	20 grams	200 grams
Ascorbic Acid	10 grams	100 grams
Sodium Sulfite	10 grams	100 grams
Urea	75 grams	750 grams

When all the chemicals have been completely dissolved add cold water to bring final solution up to 1 liter. This will be transferred to a 1 liter storage container to be marked "Solution A". Note: If this is cat. no. 04-3025 start with 7500 ml of hot distilled water and add the chemicals to that amount until dissolved and then add water to bring the "A" solution up to 10 liters of volume.

#### STOCK SOLUTION B

Start with 750 ml of **distilled** water at room temperature and add to that the following chemical. Make sure chemical is dissolved then add cold distilled water to bring volume up to 1 liter. Note: if you are using Cat. no. 3025 start with 7500 ml of distilled water and bring the final solution to 10 liters of volume.

When all chemistry is completely dissolved transfer to appropriate storage container to be marked "Solution B"

SOLUTION B	CAT. NO. 04-3020	CAT. NO. 04-3025
Chemical	Amount	Amount
Sodium Carbonate	60 grams	600 grams

## BLEACH SOLUTION

Start with 75 ml of **distilled** hot water approximately 100°F. Add to that the following chemicals in order. Make sure each chemical is dissolved before adding the next.

BLEACH SOLUTION	CAT. NO. 04-3020	CAT. NO. 04-3025
Chemical	Amount	Amount
Copper Sulfate	17 grams	170 grams
Potassium Bromide	55 grams	550 grams
Succinic Acid	2 grams	20 grams

When all chemicals have been completely dissolved add cold water to bring final solution to 1 liter. This will now be transferred to a storage container marked "Bleach Solution". Note: If using cat. no. 04-3025 start with 750 ml of **distilled** hot water and add chemicals dissolving completely, then bring volume up to 10 liters.

### POST TREATMENT SOLUTION

Start with 300 ml of hot **distilled** water approximately 100° F, add the following chemical dissolving completely then add cold **distilled** water to bring the volume up to 400 ml.

POST TREATMENT STOCK SOL.	CAT. NO. 04-3020	CAT. NO. 04-3025
Chemical	Amount	Amount
Ascorbic Acid	10 grams	100 grams

Transfer this solution to a 500 ml storage container and label container "Post Treatment Solution". Note: If using Cat. no. 04-3025 start with 3000 ml of 100° F distilled water dissolving chemical completely and bringing final solution to 4000 ml. Transfer to adequate container and mark the container "Post treatment stock solution".

### DEVELOPER WORKING SOLUTION

Mix equal parts of Stock Solution "A" and Stock Solution "B", just before development in a glass tray. The working solution has a life of one working session (approximately 8 hours). Mix only enough to develop the hologram and then discard.