



PHOTOGRAPHER FORMULARY

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JD-2 HOLOGRAPHY FILM DEVELOPER

Dr. Jeong recommends the JD-2 formulation. The special film may be purchased from Integraf, 745 N. Waukegan Road Lake Forest, IL. 60045.
Phone: 1-847-234-3756.

This formula has been proven to be most useful for all kinds of holograms. It is relatively safe, even for the home hobbist. This kit is good for both reflection and transmission holograms.

When making white light reflection holograms with a He-Ne laser, this process allows you to control the color of the image from red to blue, depending on the exposure. Underexposure yields red; overexposure yields blue. Correct exposure yields a gold color.

Use a green safe light and shine it on the floor. Dim it so that you can barely see during the experiment.

FOR YOUR CHEMICAL SAFETY

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

Potassium Dichromate is both toxic and an oxidizer (potential fire hazard). To dispose of excess solid potassium dichromate always washes the solid down the drain with large amounts of water. Never dispose of the solid in a wastebasket.

Spillage of a dichromate solution on the skin will cause a chemical burn, which will appear as ulceration. In addition, all chromium compounds are potential carcinogens. In addition, we strongly recommend you use disposable rubber gloves when handling this compound in solutions. Clean all trays and containers thoroughly with water followed by soap and water. Dispose of excess dichromate salts and their solutions down a drain with a large volume of water.

Urea and Ascorbic Acid may irritate the eyes and skin.

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

Sodium Bisulfate is a skin irritant. Wash skin with lots of running water for 15 minutes. Get immediate medical attention. If swallowed do not induce vomiting. Wear rubber gloves; dust mask, apron, and safety goggles when mixing this solution.

FOR BEST RESULTS USE DISTILLED WATER.

Mixing the Stock Solution

Solution A

Chemical	Amount	Amount
	(Cat. no. 04-3010)	(Cat. no. 04-3011)
Distilled Water 100°F	750 ml	7.5 liters
Catechol	20 grams	200 grams
Ascorbic Acid	10 grams	100 grams
Sodium Sulfite	10 grams	100 grams
Urea	75 grams	750 grams
Water (68°F) To Make	1 liter	10 liters

Solution B

Chemical	Amount	Amount
Distilled Water (100°F)	800 ml	8 liters
Sodium Carbonate, Anhyd.	60 grams	600grams
Water (68°F) to make	1 liter	10 liters

Mixing the Working Solution

Developer solution- Mix equal parts of solution A and 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 dispose.

Bleach Solution

Chemical	Amount	Amount
Distilled Water (68°F)	750 ml	7.5 liters
Potassium Dichromate	5 grams	50 grams
Sodium Bisulfate	80 grams	800 grams
Water (68°F) to make	1 liter	10 liters

Bleach solution- Mix thoroughly, the potassium dichromate in the 1-liter of water. Add the sodium bisulfate and mix well. The bleach is good for a long time, and can be reused until potency is lost.

Processing

1. Develop in the working solution for two minutes.
2. Wash in running water for three minutes.
3. Bleach until the hologram is transparent, less than two minutes.
4. Wash in running water for three minutes.
5. Soak in photoflo solution as recommended for three minutes.
6. Hang up vertically to dry, using clean and dry clothespins.

If you are making reflection holograms, they can't be viewed until the hologram is dry.