

Section H	Basic Yellow	Subsection 2
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Name of Procedure:

Basic Yellow

Suggested Uses:

One of the most effective ways to recover latent prints from items of evidence is to use a laser dye followed by a laser or alternate light source examination. Basic yellow has been found to be one of the most effective laser dyes in recovering latent prints on various surfaces. This dye is normally used on non-porous surfaces (metal, glass, plastic, etc.); however, under certain conditions can be used on porous or semi-porous surfaces. This dye is extremely efficient in that it is highly fluorescent and can be used with either an argon-ion laser, copper-vapor laser, YAG laser or various alternate light sources.

Equipment Needed to Perform Procedures:

- A - Laser or alternate light sources
- B - Safety Goggles (Laser)
- C - Filter (Laser)
- D - Camera (35mm, 2 1/4, MP-4, CU5)
- E - Magnifier (Strong, Hand-Held)
- H - Fume hoods
- I - Rubber gloves
- J - Plastic applicators with spouts or glass tray for submerging items

Chemicals Needed For Preparation of Chemical Solution(s):

- A - .005 grams of Basic yellow
- B - Methanol or ethanol

Formula/Directions for Preparation of Chemical Solution(s):

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1. Place .005 grams of Basic Yellow in 500 ml of methanol. (To approximate this amount, moisten the end of a tooth pick and insert it in the chemical. What adheres to the toothpick can then be transferred to the solution. Properly dispose of the toothpick after use.)
2. Thoroughly dissolve the Basic Yellow in the methanol and the solution is ready to use.

Processing Procedures for Application to Item(s) of Evidence:

The first (critical) step is to super glue the item of evidence (SEE - Cyanoacrylate ester process). This process will not only locate many latent prints, but more importantly (for the laser process) will adhere to the most minute of fingerprint residue not visible to the naked eye. The process will virtually “set” the latent print in place. Once this procedure is completed, the Basic yellow solution can be applied.

Non-Porous Items:

1. Utilizing a fume hood and gloves, spray or completely submerge the item of evidence with a methanol solution of Basic yellow and allow to dry.
2. When completely dry, view the item using either the argon-ion laser or an alternate light source while wearing laser safety goggles.

Note: This dye will preferentially adhere to the super glued print, but a certain amount will adhere to the item itself. If too much dye is used, the entire surface will fluoresce and mask the latent print. In this case, simply rinse the item with plain methanol. The excess dye will wash away and in most cases the dye adhering to the latent print will remain.

If any latent prints are present, they will fluoresce bright yellow.

Porous Items:

Note: Porous items should be super glued prior to treatment, however, these items pose a problem when using Basic yellow as a solution stain. The dye will immediately penetrate the pores of the item and cause an overall fluorescence. The latent print(s) will be masked and rinsing the excess dye from the item will be difficult. The best ways to solution stain these items is to use a **Water Based** solution.

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1. Follow the above directions for non-porous items using distilled water instead of methanol or ethanol.
2. Once sprayed or immersed in the solution, the item should immediately be rinsed with clear water and scanned with the laser or an alternate light source. If a latent print is observed, the usual means of recording the image should be utilized.

Steps to Preserve Developed Impressions:

The most appropriate methods to preserve developed impressions is through photography, using the proper techniques (See Photographic Equipment/Procedures) and/or electronically recording the impressions (See Image Processing). The utilization of a 35 mm, 2 1/4, MP-4, or CU5 camera will suffice for Basic Yellow developed prints because the fluorescence is so intense. However, all laser prints must be photographed using a laser filter; otherwise, they will not be recorded on the film.

Safety Concerns:

Presently the safety concerns associated with the use of this chemical are under investigation with varied opinions on health effects. This chemical solution should be applied and treated with extreme care until the full health effects are known. As with any chemical it may cause some irritation when in contact with the eyes or skin and may be harmful if inhaled or ingested.

Storage and Location of Chemicals and Solutions:

The Basic Yellow powder should be stored in the original shipping container until needed.

Daily use of solutions can be stored in a clear spray bottles and larger solutions should be stored in dark bottles.

Shelf Life:

Basic Yellow powder - Indefinite

Basic Yellow solutions - Up to six (6) months.

Other Information:

Basic yellow may be used in conjunction with other fluorescent dyes which may be available.

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This procedure is recommended for use on items which may be transferred to other laboratory sections as the safety precautions appear to be minimal when compared to other fluorescent dyes.