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| <b>Section H</b> | <b>Ardrox</b> | <b>Subsection 6</b> |
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**Name of Procedure:**

Ardrox

**Suggested Uses:**

Ardrox is a fluorescent dye which may be utilized to develop latent impressions on multi-colored and difficult surfaces to achieve fluorescence. This process is used in conjunction with an Ultra-Violet light source to detect and record the latent impression. This dye is normally used on non-porous surfaces ( metal, glass, plastic, etc.); however, under certain conditions it can be used on porous or semi-porous surfaces.

**Equipment Needed to Perform Procedures:**

- A - Alternate Light Source or UV light source
- B - Laser Goggles
- C - Filter ( Laser )
- D - Camera (35mm, 2 1/4, MP-4, CU5 )
- E - Fume hood
- F - Rubber gloves and apron
- G - Face shield visor and/or safety goggles.
- H - Plastic applicators with spouts or glass tray for submerging items
- I - Large beaker

**Chemicals Needed For Preparation of Chemical Solution(s):**

- A - Two (2) ml of Ardrex P-133D
- B - Ten (10) ml of Acetone
- C - Twenty-five (25) ml of Methanol

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D - Ten (10) ml of 2-Propanol

E - Eight (8) ml of Acetonitrile

F - Nine-hundred forty-five (945) ml of Petroleum Ether

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

1. Place two (2) ml of Ardrox in a large beaker with a magnetic stirrer.
2. Add the following chemical in the order listed below with continual stirring:
  - a. Ten (10) ml of Acetone
  - b. Twenty-five (25) ml of Methanol
  - c. Ten (10) ml of 2-Propanol
  - d. Eight (8) ml of Acetonitrile
  - e. Nine-hundred forty-five (945) ml of Petroleum Ether
3. Place the solution in a dark shatterproof container until needed. Solutions may be stored in clear spray or squirt bottles for immediate 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 Ardrox solution can be applied.

1. Utilizing a fume hood and rubber gloves, spray or completely submerge the item of evidence with the Ardrox solution and allow to dry.
2. When completely dry, view the item using either an Ultraviolet light source or the Crimescope alternate light source while wearing laser safety goggles.

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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.

### **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 Ardrox 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:**

The chemicals used to formulate the solution are extremely flammable and should be handled with extreme care. As with any chemical solution, it may cause some irritation when in contact with the eyes or skin and may be harmful if inhaled or ingested. The methanol used in this solution is corrosive and should be handled with extreme care.

### **Storage and Location of Chemicals and Solutions:**

All of the chemicals and the Ardrox solution used in this process should be stored in their original shipping containers in a flammable cabinet until needed.

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

### **Shelf Life:**

Working solutions of Ardrox - Up to six (6) months.

### **Other Information:**

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

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Inherent luminescence examination of an item of evidence should be conducted prior to analysis to determine the color the item will fluoresce. This will often determine if Ardrox will be the appropriate dye to be used.