SIRCHIE
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TECHNICAL INFORMATION

Iodine Fuming Kit

Catalog No. LPF100

INTRODUCTION

The iodine fuming method of developing latent fingerprints is experiencing a resurgence of interest and the question often comes to mind: How do you lift iodine-developed prints? After several decades of use, the Iodine Fuming/Silver Transfer method has proven itself to be the most successful and reliable means of lifting iodine prints.

When iodine is exposed to temperatures in excess of 70°F (21°C), the crystals undergo sublimation, that is, they begin to change from a solid to a gas or vapor. Iodine vapors react with oily latent print residues left by human hands developing a brown color conforming to ridge structure.

Iodine fumes develop prints on virtually any surface but it is most effective on porous surfaces such as paper, raw wood and cardboard. *It has been reported that latent prints have been successfully developed and lifted from human skin.* Iodine development is used when prints are known to be fresh (24-48 hours). Iodine fuming is non-destructive to other development methods including DFO, ninhydrin, physical developer and silver nitrate.

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PRECAUTIONS

- Consult the appropriate Material Safety Data Sheets (MSDS) found on our website at www.sirchie.com/support.
- Iodine fumes are toxic. Wear the appropriate organic filtered vapor respirator or use with a ductless or vented fuming hood.
- Iodine accelerates the oxidation (rusting) of ferrous metals. Keep fumes and crystals away from metal surfaces.
- Do not inhale through the fuming gun when dispensing fumes.
- When enhancing/fixing iodine fumed prints, wait at least three (3) minutes prior to application.

IODINE FUMING METHODS

Laboratory Fuming Cabinet

Several methods for causing iodine sublimation are available, one of which is the No. 213C Laboratory Fuming Cabinet. After suspending items of evidence above the chamber floor, iodine crystals are placed on a glass dish and heat is applied. Latent prints, if present, develop very quickly.

Disposable Iodine Fuming Gun

The DF201 Fumette Disposable Iodine Fuming Gun, a SIRCHIE innovation, is a self-contained iodine-fuming source. Iodine crystals are sealed in a glass ampoule within the body of the fuming gun.

DF201 Fumette Disposable Iodine Fuming Gun

1. Remove the fuming gun from the plastic bag. (Retain the bag for disposal of the used fuming gun.)
2. The ampoule containing iodine crystals will be visible inside the fuming gun. Grasp the fuming gun in the palm of your hand, and cover the area where the crystals are located for at least one minute. Body heat will accelerate sublimation of the crystals.
3. Open the stopper cap on the front end of the fuming gun.
4. Attach the Blowing Tube to the Red Cap at the other end.
5. Crush the enclosed glass ampoule by squeezing between the thumb and forefinger.

6. Aim the nozzle (front end) of the tube toward the area to be fumed. The nozzle-to-surface distance should not exceed one (1) inch.
7. Extend the Blowing Tube to its full length, take a deep breath, place the end between your lips, and blow steadily. As the breath warms the crystals, a purple vapor may be seen coming from the nozzle. Move the nozzle across the surface in a sweeping, circular motion. ***Do not inhale through the blowing tube!***
8. Latent prints should be visible shortly after the application of the fumes. Re-fume faint prints.
9. When fuming is complete, photograph the prints with a scale, and wait approximately 3 minutes before applying a fixative or enhancer. Iodine-fumed prints may be enhanced using DISCHAPS™ DCA1 Iodine Enhancer. This enhancer will stain the prints a blue to purple color, which affords greater photographic contrast. Iodine prints will begin to fade shortly after development, so photograph them as soon as they appear. Prints containing high oil content may be visible for a day or more, while others may fade in a few minutes.
10. After fuming is complete, close the Stopper Cap, and tie a knot in the Blowing Tube. Replace the fuming gun into the plastic bag, tape it shut, and dispose of it in a safe manner consistent with all environmental regulations.

Iodette Ampoules

Iodette Ampoules (No. AMP2006) are a convenient method for fuming individual documents. The document is placed in a resealable plastic bag and an ampoule is broken open. After poring the crystals into the bag, allow the crystals to accumulate in one corner. The crystals are heated by holding this corner in the palm of the hand.

Slide the paper guard over the ampoule and crush by applying pressure with the thumb and forefinger.

Iodine Print Enhancer

NOTE: If you intend to apply other test methods such as ninhydrin, DFO, physical developer, etc.; or if you intend to lift iodine prints with the iodine/silver transfer method; DO NOT apply iodine print enhancer or other fixatives.

Iodine-developed prints are *fugitive* in that they disappear shortly after development

unless steps are taken to preserve them. The first step is to photograph the developed prints, after which the prints may be ***fixed*** using No. DCA1 Iodine Print Enhancer. *Note: Wait at least 3 minutes after iodine fuming before using enhancer.*

1. Slide the sleeve over the ampoule and apply pressure with the thumb and forefinger to crush.
2. Remove the applicator tube cap and saturate the system's swab.
3. Apply the reagent to the iodine-developed print.
4. When fixed, recap the swab and dispose of the system.

If it becomes necessary to lift the prints, the most successful method is Silver Transfer.

LPF100 CONTENTS:

- 8- DF201 Fumette Disposable Iodine Fuming Guns
- 8- DCA1 Iodine Print Enhancer Ampoules
- 2- SP501 Silver Transfer Plates, 2" x 2" (5.1cm x 5.1cm)
- 1- SP505 Silver Cleaner/Polish, 2 oz. (59ml)
- 4- SF00771 Disposable Latex Glove Pairs
- 1- KCP226 Suction Cup Plate Holder
- 1- LPF1001 Texturized, Molded-Plastic Carrying Case; Dimensions: 14.25" x 8.25" x 7" (36.2cm x 20.9cm x 17.8cm); Weight: 2.6 lbs. (1.2kg)

Iodine/Silver Transfer Method

NOTE: If you intend to lift prints using this method, DO NOT apply any fixative or enhancer to the prints.

1. After developing latent prints using one of the previous methods, allow 15 to 20 seconds for excess fumes to dissipate.
2. Select one of the Silver Transfer Plates:
   No. SP501 – 2" x 2" (5cm x 5cm); No. SP502 – 2" x 4" (5cm x 10cm); No. SP503 – 4" x 4" (10cm x 10cm)

   Press the plate against the fumed print for about two seconds. A suction cup is provided to facilitate handling the silver plate.
3. After removing the plate, no image will be visible on the silver plate. To develop the print, expose the silver plate to bright light (sunlight, photofloods or shortwave UV light). Development times vary with the strength of the light source. Observe the plate until black ridges are visible.

Once the print is developed, it should be photographed. The silver plates are reusable. After photographing the prints use No. SP505 Silver Cleaner/Polish to clean the print from the silver plate.

If the developed print begins to fade during the preceding steps, it may be re-fumed. If the print lifted by the silver plate is very weak, clean the plate and re-fume the surface and repeat the lifting process.