Cyanoacrylate Fuming

Table of Contents

Cyanoacrylate Fuming

1 Introduction/Scope

Cyanoacrylate fuming is used by Friction Ridge Discipline personnel to develop latent prints on non-porous and semi-porous items.

2 Standards and Controls

See *Processing Overview* (FRD-300).

3 Limitations

The cyanoacrylate and aluminum weighing dish used in a specific chamber must be compatible to the dimensions or settings of that chamber.

4 Equipment

- Cyanoacrylate
- CYANO-SHOT™
- Lumicyano™
- Aluminum weighing dish or similar container
- Automated Cyanoacrylate Fuming Chamber(s) (Misonix®/Mystaire® and Capture™ BT)
- Cyanoacrylate fuming wand, cartridge(s), and butane
- Cyanoacrylate Blowing Chamber(s)
- Improvised cyanoacrylate fuming chamber(s)
- Foster + Freeman SUPERfume® system

5 Procedure

5.1 Misonix®/Mystaire® Cyanoacrylate Fuming Chambers

Personnel will complete the following steps in order:

A. Place item(s) into chamber, ensuring adequate spacing surrounding item(s) for exposure.
B. Prior to beginning the humidity cycle, ensure the humidifier water tank has sufficient water for the cycle.
C. Press the start button to begin the humidity cycle, which transitions to the fuming cycle once the set humidity value is reached (optimal 70% relative humidity).
D. At the start of the fuming cycle, weigh an appropriate amount of cyanoacrylate into an aluminum dish or similar container.
    1. Only the cyanoacrylate designated for that chamber can be used (see limitations).
E. When the designated time is reached, place cyanoacrylate container on the hot plate and press enter to resume the fuming cycle.
F. Upon completion of the fuming cycle, the chamber will purge fumes for a preset time.

G. When the purge cycle is complete, remove the item(s) and check chamber to ensure no item(s) has been left behind.
H. Examine the item(s) visually and/or under a forensic light source for latent prints. (Refer to *Forensic Light Sources* (FRD-305)).
I. The FBI Laboratory File will reflect the specific chamber used for each cycle.

5.2 Labconco CApture™ BT Fuming Chambers

Personnel will complete the following steps in order:

A. Place item(s) into chamber, ensuring adequate spacing surrounding item for exposure.
B. Prior to beginning the cycle, ensure the appropriate program is selected and the humidifier contains a sufficient amount of water.
C. Weigh an appropriate amount of cyanoacrylate into an aluminum weighing dish, ensuring any tabs on the aluminum dish are not folded down.
    1. Only the cyanoacrylate designated for that chamber may be used (see limitations).
D. Open the hot plate door, pull the handle, and place the aluminum dish on the white circle.
E. Press start button to begin the process.
F. Upon completion of the full process, remove the item(s) and check chamber to ensure no item(s) has been left behind.
G. Examine the item(s) visually and/or under a forensic light source for latent prints. (Refer to FRD-305).
H. The FBI Laboratory File will reflect the specific chamber used for each cycle.

5.3 Additional Cyanoacrylate Fuming Methods (Non-automated)

To include the use of, but not limited to:

- Cyanoacrylate fuming wand(s).
- Cyanoacrylate Blowing Chamber.
- CYANO-SHOT™ (with or without Lumicyano™).
- Foster + Freeman SUPERfume® system.
- Improvised cyanoacrylate fuming chamber(s) (such as tents, non-automated cyanoacrylate fuming cabinets, and other non-manufactured chambers).

5.3.1 Test strip

A. For handheld devices, such as a cyanoacrylate fuming wand, the test strip will be fumed prior to the fuming of any item(s).
B. For improvised cyanoacrylate fuming chambers, the test strip will be included with the item(s).
    1. If the test strip is negative, the item(s) will be processed again (see FRD-300).
C. Results of the test strip for each cycle must be recorded in the FBI Laboratory File.

5.3.2 Processing

A. Personnel will process the item(s), following the manufacturer's recommendations, if applicable, until sufficient development occurs.
B. The method of processing must be recorded in the FBI Laboratory File.
C. Capture appropriate friction ridge detail as applicable (digitally or photographically).

6 SAFETY

See FBI Laboratory Safety Manual for appropriate information.

7 REVISION HISTORY

Revision	Issued	Changes
03	12/01/2020	Minor wording changes throughout and changed evidence to item. Section 4.1 and Section 4.2 - added requirement to record specific chamber used. Section 4.1 - removed sentence "a". Section 4.3 - removed redundancy.
04	07/15/2022	Reformatted