

Section B

CYVAC

Subsection 2

Name of Procedure:

Cyvac

Suggested Uses:

The cyvac polymerizes the latent impression using cyanoacrylate in a vacuum environment. The vacuum will eliminate the background moisture and allow the cyanoacrylate to attach to the components of the latent impression thus eliminating the over fuming of an item of evidence which may occur with manual super glue techniques. Numerous materials may be processed utilizing the cyvac such as plastic bags, weapons, metals, and various other substrates. Super glue should be used as a preliminary process when utilizing a number of subsequent processing techniques. Fluorescent dye staining with laser examinations are dependent on the proper use of super glue fuming techniques.

Equipment Needed to Perform Procedures:

A - Cyvac Unit

B - Commercially prepared super glue for heating element fuming

Chemical(s) Needed for Preparation of Chemical Solution(s):

Not Applicable

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

Not Applicable

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

1. Connect the vacuum pump cord to a 115 volt, 15 amp outlet. Connect the vacuum hose to the vacuum pump and the Cyvac chamber.
2. Place the item of evidence to be processed in the vacuum chamber. Evidence should be placed approximately 1/2 inch apart or separated with one or two layers of light weave paper towel. Open and drain most containers. Vacuum desiccate containers having petroleum based volatiles prior to processing with cyanoacrylate.

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3. Insert the small foil cup into the vacuum chamber and add three (3) to six (6) drops of cyanoacrylate (super gluing) into the cup.
4. Close door .
5. Open the OUTLET valve and verify that the INLET and PURGE valves are in the closed position. Turn the main pump switch to the ON position. Verify that the door seals are operational and vacuum is starting. Operate the vacuum pump on until vacuum reaches 25 mb of mercury.
6. Turn the vacuum pump OFF and close the pump air valve when this vacuum has been established.
7. Leave the evidence in the Cyvac chamber under vacuum condition for 20 to 45 minutes.

NOTE: This period of time is sufficient for most items;; however, a longer period of time may be required for more difficult prints.

8. Open the air valve on the chamber and wait until the pressure equalizes (Zero reading on the gauge).
9. Leave the evidence in an open air area for 30 to 60 minutes before processing further as this will allow the cyanoacrylate treated impressions to harden.

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 item of evidence can be powder processed after super glue fuming and lifted with lift tape or photographed to preserve the impression (See Powder Processing).

The super glue fuming process is vital to any subsequent treatment with fluorescent dyes and laser and/or alternate light source examinations (See Fluorescent Dyes and Laser/Alternate Light Sources).

Safety Concerns:

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The exhaust hose should always be routed through a fume hood or an acceptable ventilation system.

Proper purging of the system is necessary as the fumes may cause some irritation when in contact with the eyes or skin and may be harmful if inhaled or ingested. Protective goggles, gloves and aprons should be worn at all times during processing.

Storage and Location of Chemicals and Solutions:

Not Applicable

Shelf Life:

Not Applicable.

Other Information:

Refer to the Cyvac operating manual for further information on controls and specifications.