



TENNESSEE BUREAU OF INVESTIGATION

Forensic Services Division

Violent Crime Response Team Standard Operating Procedures Cyanoacrylate Fuming

10. VCRT Procedures

10.8 Cyanoacrylate Fuming

10.8.1 Scope

Cyanoacrylate, also known as Super Glue, is used to develop latent prints on evidence with non-porous surfaces and some semi-porous surfaces. The fumes from the glue adhere to the latent print residue left on the evidence. Cyanoacrylate processing also prepares the surface of the evidence for acceptance of powders and dye stains.

Any non-porous items, such as glass, plastics, and metals may be fumed with cyanoacrylate. Semi-porous items, such as glossy cardboard boxes or magazines, may also be fumed with cyanoacrylate. Some glossy papers and slick or glossy cardboard boxes can be processed with ninhydrin following cyanoacrylate.

10.8.2 Definitions

Refer to VCRT 11.0 Definitions and Abbreviations

10.8.3 Chemicals and Reagents

Cyanoacrylate Ester (Super Glue)
Super Glue cartridges
Butane

Mixing Procedure

This product is commercially purchased.

Storage

Cyanoacrylate may be stored in the freezer prior to opening. No expiration date is provided, however a control will be performed prior to use on evidence.

10.8.4 Precautions

Avoid contact with skin and eyes.

Proper ventilation of Super Glue fumes is essential. A respiratory mask may be used when a fume hood or Super Glue chamber is not practical or available.

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Caution should be used with hot plates to not overheat to the point cyanide vapors can be produced.

Over fuming may result from evidence being in contact with Super Glue fumes too long. It is characterized by thick whitening over the area. The evidence should be monitored in order to avoid over fuming.

Cyanoacrylate can be removed with water, acetone, or acetonitrile.

10.8.5 Equipment and Supplies

Aluminum foil dish
Fuming chamber
Hot plate
Beaker
Fume wand
Cyanoacrylate Blowing Contraption (CBC)

10.8.6 Test Procedure

Controls

One or more latent prints are placed on a non-porous non-evidence item, such as a plastic bag or microscope slide. Cyanoacrylate fumes are applied to the item.

A positive result is indicated by the presence of visible white colored latent prints on the item.

A negative result is indicated by the absence of visible white colored latent prints on the item.

A control must be successfully performed before applying cyanoacrylate to evidence. This control must be documented in the VCRT Member's notes.

Wand Technique

The fuming wand may be used for applying cyanoacrylate to items. It is especially useful at crime scenes or with vehicles.

The fuming wand will be used as directed in the instruction manual supplied with the fuming wand.

Procedure for Processing Vehicles

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1. Items from the vehicle selected for processing may be left inside as long as all applicable surfaces are exposed.
2. Place hot plate in floorboard of vehicle.
3. Pre-heat hot plate 3-5 minutes.
4. Place small amount of Super Glue in aluminum foil dish.
5. Place aluminum container on hot plate.
6. Close all vehicle doors and windows.
7. Observe its progress.
8. Turn off hot plate.
9. Ventilate properly.
10. Visually examine the evidence and the interior of the vehicle.

Procedure for Processing Vehicles with the CBC

1. Place all non-porous items in automobile.
2. Place tube of Cyanoacrylate Blowing Contraption (CBC) through window of car. Seal open area around tube with tape to prevent leakage of Super Glue fumes.
3. Preheat CBC for approximately 3-5 minutes.
4. Place small amount of Super Glue in aluminum foil dish.
5. Place aluminum dish on heater inside CBC and close lid.
6. Observe its progress approximately 3-5 minutes.
7. Turn off CBC.
8. Ventilate properly.
9. Visually examine the items for latent prints.

Note – Whenever possible firearms should be processed in the laboratory. Cyanoacrylate glue fumes could have an unfavorable effect during a subsequent firearms examination. In the anticipation of firearms examination is to be done, each chamber opening (e.g., the cylinder of a revolver) and each barrel opening should be covered with a small piece of tape before fuming. First ensure that the area to be covered by the tape is processed by other appropriate methods. Remove the tape after the cyanoacrylate glue fuming process.

10.8.7 Interpretation of Results

The results of this test will be recorded in the VCRT Member's notes.

Latent prints of comparable value should be marked and photographed with a ruler included. Refer to VCRT 10.34 Comparison Photography for additional information.