Technical Procedure for Cyanoacrylate Ester Fingerprint Development

1.0 Purpose – This procedure outlines the use of cyanoacrylate for development of Latent friction ridge detail on non-porous and in some cases porous/semi-porous items of evidence.

2.0 Scope – This procedure is a step in the processing of non-porous evidence that may contain impressions that require developing/enhancing.

2.1 Cyanoacrylate Ester is a commercially prepared product that polymerizes the latent impressions. Numerous materials, including plastic bags, weapons, metals, and various other substrates, may be processed using Cyanoacrylate Ester. Cyanoacrylate shall be used as a preliminary process for subsequent processing techniques. Fluorescent dye staining, in conjunction with laser/ALS examinations, is dependent on the proper use of cyanoacrylate fuming techniques. Cyanoacrylate developed latent impressions may be visible without additional process, if so, this detail shall be captured prior to additional process.

3.0 Definitions

- **(ALS) Alternate light source:** Any of the multiple forensic light sources readily available in the Digital/Latent Evidence Section including, but not limited to, the CrimeScope, Mini Blue Maxx, Short and Long Wave lamps and Handscope Xenon (spex) ALS. ALS (Alternate Light Source) Equipment used to produce light at various wavelengths to enhance or visualize potential items of evidence.
- **Ambient light:** Light that is readily available in the office environment (i.e., natural light or light that emanates from an office lighting source).
- **CE:** Cyanoacrylate ester, also known as super glue.
- **Heat Plate:** heating device use to heat cyanoacrylate
- **Cyanoacrylate Ester Fingerprint Development Kits: C**ommercially prepared cyanoacrylate ester fuming kits that assists in the processing of non-porous items of evidence with the assistance of cyanoacrylate ester. Commercial products currently used include Hot-Shot, finder packs and Cyano-Shot.

4.0 Equipment, Materials and Reagents

4.1 Equipment and Materials

- Heat Plate
- Black Latent Backer Cards

4.2 Reagents –

- Cyanoacrylate Ester Fingerprint Development Kits
- Cyanoacrylate Ester
- Finder packets

5.0 Procedure – Examiners shall produce a self-made test print to be processed concurrently with items of evidence. (See Section Technical Procedure for Ensuring Quality Control.) Examiners shall follow manufacturers instruction on the application process of the Kit.

5.1 Standards and Controls – N/A

5.2 Calibration – N/A

5.3 Sampling – N/A

5.4 Calculations – N/A

5.5 Uncertainty of Measurement - N/A

6.0 Limitations – Cyanoacrylate Ester Fingerprint Development Kits are for use in the processing of non-porous or semi-porous evidence.

6.1 The cyanoacrylate ester provided in some commercially prepared kits may harden over time. Other approved cyanoacrylate ester products and procedures used for developing latent prints may be substituted.

7.0 Safety – Proper ventilation of work area is required as the fumes may cause irritation when in contact with the eyes or skin and may be harmful if inhaled or ingested. Protective goggles, gloves, and apron/lab coat shall be worn during processing. Additionally, cyanoacrylate ester is an adhesive/glue; care shall be taken to avoid application to unintended surfaces.

7.1 This process may be used in larger open areas. Extreme care must be taken when conducting this procedure. When a large area (e.g., interior of a vehicle, etc.) is processed, ensure that the area is tightly secured. When using these Kits to apply to surface area you must be aware of the area and the direction fumes may travel. Once the fuming of the area is complete, allow the area completely air out before proceeding.

8.0 References

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9.0 Records – N/A

10.0 Attachments – N/A

REVISION HISTORY		
CURRENT VERSION	**EFFECTIVE DATE**	**SUMMARY OF CHANGES**
1	2016/07/01	Original Version
2	2018/04/01	Change issue to effective date, Rev # changed to Ver#, change revision History. Under safety add text to address use of cyanowand. Move reagents to reagent section