

Ninhydrin

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Ninhydrin

1 INTRODUCTION/SCOPE

- A. Ninhydrin is used by FBI Laboratory Friction Ridge Discipline personnel to develop latent prints on porous and semi-porous surfaces.
- B. It reacts with the amino acids that are present in perspiration.

2 STANDARDS AND CONTROLS

See *Processing Overview* (FRD-300).

3 LIMITATIONS

None

4 EQUIPMENT

- Humidity chamber or steam producing device
- Ninhydrin
- Petroleum ether
- Isopropyl alcohol
- Methanol

5 PROCEDURE

5.1 Solution Preparation

Personnel will prepare the working solution as follows: [Alternative amounts may be prepared, provided the same ratio of chemicals mixed is retained.]

5.1.1 Ninhydrin Working Solution

- A. Combine:
 - Ninhydrin – 5 g
 - Methanol – 30 mL
- B. Stir until Ninhydrin dissolves.
- C. Add:
 - Isopropyl alcohol – 40 mL
 - Petroleum ether – 930 mL

5.2 Application

5.2.1 Standard Method

Personnel will complete the following steps in order:

- A. Apply Ninhydrin working solution to the item.
 - 1. Allow item to dry completely.
 - 2. Place item in humidity chamber at 70%-80% relative humidity and 70-80°C for approximately 5 minutes.

B. Preserve appropriate friction ridge detail as applicable (e.g., digitally).

5.2.2 Alternate Methods for Development

- A. Personnel may apply damp heat with a steam producing device (e.g., steam iron) for several minutes.
 - 1. If latent print development is insufficient, continue to apply damp heat for a few additional minutes.
- B. In some circumstances, heat may be detrimental to the condition of the item(s).
 - 1. In these circumstances, the item(s) may be left to dry and then placed in a sealed bag or container at least overnight.
- C. The use of alternate methods must be recorded in the FBI Laboratory File.
 - 1. If an alternate method is used to test a reagent, the method needs to be recorded in the reagent log or the FBI Laboratory File (if off site).

5.3 Storage

- A. Ninhydrin working solution may be stored in any of the following receptacles:
 - o Dark glass bottle
 - o Metal can
 - o Stainless steel container

5.4 Shelf Life

Ninhydrin working solution has a 1-year shelf life provided the reagent checks are satisfactory.

6 SAFETY

See FBI Laboratory Safety Manual for appropriate information.

7 REVISION HISTORY

Revision	Issued	Changes
03	07/01/2022	Format Updated.
04	08/01/2024	Acetone version and large quantity instructions with associated statements removed from document.