

RAM

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RAM

1 INTRODUCTION/SCOPE

RAM (combination of fluorescent dyes Rhodamine 6G, Ardrex P133D, and MBD) is a fluorescent dye used by FBI Laboratory Friction Ridge Discipline personnel to make cyanoacrylate-developed latent prints more visible on all colors of non-porous and semi-porous surfaces.

2 STANDARDS AND CONTROLS

See *Processing Overview* ([FRD-300](#)).

3 LIMITATIONS

Fluorescent compounds will suffer from loss of fluorescent intensity over time; as such, fluorescent prints will be captured as soon as is practicable.

4 EQUIPMENT

- 4-(4-methoxybenzylamino)-7-nitrobenzofurazan (MBD)
- Rhodamine 6G (dye content $\geq 99\%$)
- Ardrex P133D
- Acetone
- Methanol
- Isopropanol
- Petroleum Ether
- Acetonitrile
- Forensic Light Source(s)

5 PROCEDURE

5.1 Solution Preparation

Personnel will prepare the solutions as follows. Alternative amounts may be prepared, provided the same ratio of chemicals mixed is retained.

5.1.1 Rhodamine 6G stock solution

- A. Combine:
 - Rhodamine 6G - 1 g
 - Methanol - 1000 mL
- B. Stir until Rhodamine 6G dissolves.

5.1.2 MBD stock solution

- A. Combine:
 - MBD - 1 g
 - Acetone - 1000 mL
- B. Stir until MBD dissolves.

5.1.3 RAM working solution

- A. Combine in the order listed:
 - Rhodamine 6G stock solution - 3 mL
 - Ardrox P133D - 2 mL
 - MBD stock solution - 7 mL
 - Methanol - 20 mL
 - Isopropanol - 10 mL
 - Acetonitrile - 8 mL
 - Petroleum Ether - 950 mL
- B. Caution: DO NOT place on a magnetic stirrer.

5.2 Application

- A. Personnel will complete the following steps in order:
 1. Apply solution to item by spraying, dipping, squirting, or painting.
 2. Allow item to dry completely.
 3. View using forensic light source at wavelengths in the 365 nm to 540 nm range. (Refer to *Forensic Light Sources* ([FRD-305](#))).
- B. Capture appropriate friction ridge detail as applicable (digitally or photographically).

5.3 Storage

- A. Rhodamine 6G stock and MBD stock must be stored in dark glass bottles.
- B. RAM working solution can be stored in a metal can, plastic bottle, or dark or clear glass bottle.
- C. Ardrox P133D is stored in its original container or dark glass bottle.

5.4 Shelf Life

- A. Rhodamine 6G stock, MBD stock and Ardrox P133D stock solutions each have an indefinite shelf life.
- B. RAM working solution has an indefinite shelf life provided the reagent checks are satisfactory.
 1. If the working solution is separated, shake vigorously.
 2. If the solution does not return to suspension, discard the solution.

6 SAFETY

See [FBI Laboratory Safety Manual](#) for appropriate information.

7 REVISION HISTORY

Revision	Issued	Changes
02	07/15/2021	Replace Latent Print Units with Friction Ridge Discipline. Minor wording changes. Streamline equipment list. Re-organization and re-numbering of sections. Section 4.1 - broken into Section 4.1.1, Section 4.1.2, and Section 4.1.3. Section 4.1 - added ratio allowance. Section 5 - added Preamble reference.
03	07/15/2022	Reformatting Section 5.3 – changed storage