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TECHNICAL INFORMATION

Cyanoacrylate Fuming Chamber

Catalog Nos. FR200, FR200220

INTRODUCTION

This chamber features 4.0 cu. ft. (.11 cu. meters) of volume for processing a large number of items at once. Two heating elements, operating independently or simultaneously, allow for safe cyanoacrylate fuming with a surface temperature of approximately 230^{O}F (110^{O}C).

Closely monitor latent print development through the clear, polycarbonate front door panel. By utilizing the built-in control print hanger, the guesswork is taken out of fuming time! *NOTE: Overdeveloped prints lose detail, hindering enhancement techniques—it's always better to underdevelop.*

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One of the most outstanding features are the two inlet ports—use the top port for fuming with the CYANOWAND™ (No. SCW101) and adding moisture as required with the No. PUM100 Portable Humidifier; the lower port is designed for extracting fumes with the No. FR300 DeFumigator™ after processing. *NOTE: If your department processes a large number of latent prints with cyanoacrylate, use OMEGA-PRINT™ Fingerprint Developer (No. CNA103) and the Disposable Fuming Trays (No. CNA106).*

In order to prevent the buildup of cyanoacrylate on the polycarbonate surfaces of your new fuming chamber, use the CNA110A CYANO-BLOC™ pre- and post-treatment pads before initial fuming.

A 220V AC version is available by ordering No. FR200220.

The No. FR200 Cyanoacrylate Fuming Chamber (as shown here) has the No. FR300 DeFumigator™ connected to the bottom right inlet port to hasten the removal of noxious odors and fumes from cyanoacrylate fuming. The No. PUM100 Portable Humidifier (above, left) can be connected to the top left inlet port to provide extra moisture if needed during processing.

PRECAUTIONS

- Before using this kit, consult the appropriate Material Safety Data Sheets (MSDS) found on our website at www.sirchie.com and click on MSDS.
- Use a ducted or recirculating fuming hood when releasing cyanoacrylate fumes from the fuming chamber when fuming is complete.
- Wear protective clothing and safety glasses or goggles.
- DO NOT wear contact lenses in the presence of cyanoacrylate fumes.
- DO NOT use CNA108/109 cleaner with the heater on as flash fire will result.
- Heater components, including the chamber's metal framework, document support rods and metal clips can reach temperatures sufficient to cause burns. Use caution when working around a heating element.
- DO NOT place FINDER™ cyanoacrylate packets or dispersal pads in contact with the heater element as they may ignite.
- CYANO-BLOC™ is Flammable! DO NOT use near open flame, sparks, etc.
- To prevent defatting of the skin when using CYANO-BLOC™, latex gloves are recommended.

BACKGROUND

Cyanoacrylate fuming has been shown to be an effective means of latent print development on surfaces as varied as plastic, carbon paper, Styrofoam, metals, glass, tapes, wood, rubber, leather and rock. Vapors of cyanoacrylate combine with fingerprint residues and polymerize to form a hard, whitish deposit. Once developed, such prints may either be photographed without further treatment, may be enhanced by dusting with powders for subsequent lifting by tape or stained with dyes such as Ardrox, Crystal Violet or Rhodamine 6G. Prints may also be recorded using fluorescent photography techniques.

CONSIDERATIONS

Cyanoacrylate fumes are heavier than air and may become layered within the chamber, therefore, devel-

opment will vary depending upon placement. Acceleration techniques, however, are not needed when using the Cyanowand™ (No. SCW101). Use one or more exemplars of known prints on a dark background to monitor development within the chamber (see photo shown right). No. FR201 Fuming Control Card Pad (2.25" x 4", 50 sheet pad) is supplied with the No. FR200 Kit for this purpose.

It Is Better to Underdevelop than Overdevelop

Underdeveloped prints can be enhanced using powders and dyes to increase detail; overdeveloped prints invariably lose detail and hinder enhancement techniques.

Preparing The Chamber for Use

Included with the No. FR200 Fuming Chamber is a single packet of CYANO-BLOC™ (No. CNA110A), which contains pre-treatment and post-treatment pads. Apply CYANO-BLOC™ to the insides of the chamber as shown left to prevent cyanoacrylate fume buildup. Follow the directions on the label before applying.

Using The Fuming Agents Contained in Kit

- **CNA103 Omega-Print™ Fingerprint Developer—**Place several drops of this liquid cyanoacrylate into a CNA106 fuming tray and place on the floor of the chamber. Check development after 30 minutes. Allow at least 2 hours for results of fuming to become visible before moving on to other methods. ***NOTE:*** *DO NOT use large quantities of CNA103 (in excess of 1 gram) as overdevelopment and subsequent loss of evidence may result.*
- **CNA104 Omega-Print™ Dispersal Pads—**If these pads are employed with liquid cyanoacrylate, elevate the pads off the chamber floor with metal or glass

CNA104 *CNA103*

supports. Otherwise, pads in contact with the floor will be glued in place. ***NOTE:*** *DO NOT overfill the pads with CNA103. The dripping that can occur may result in evidence being cemented to the chamber floor.*

- **CNA20001 FINDER™ Cyanoacrylate Packets—**This gel formulation is sufficiently viscous that the cyanoacrylate will not run. Peel the packet apart as shown right to release the cyanoacrylate fumes and orient them vertically or horizontally. Using the adhesive strip on the packet, attach to one of the four sides or lid of the chamber as close to the top as possible. One packet will produce excellent results for over 10 hours. In order to reuse packets, simply re-close them to slow evaporation.

PROCEDURES

The heater controls are located on the front panel of the unit below the chamber. There is a rocker switch and a red neon indicator for each of the 2 heating elements. The lamp lights when the heater is in ON.

Momentary Heating to Release Cyanoacrylate Fumes Rapidly:

1. Verify that both heater switches are in the OFF position.
2. Prepare evidence to be fumed by attaching one or two clips and threading a rod through the clips.
3. Place several drops of Omega-Print™ into the disposable fuming tray.
4. Place the tray on the heating element inside the fuming cabinet.
5. Place the evidence to be fumed in the cabinet.
6. Close and clamp the chamber door.
7. Verify that the moisture inlet is closed if it is not to be used.
8. Set the desired heater switch (or switches) in the ON position. Turn off all switches as soon as vapor appears. Repeat STEP 8 only after visible fumes have dissipated.
9. Monitor development.

Using The Heater as a Convection Current/Water Vapor Source:

DO NOT use the heater to continuously heat cyanoacrylate as development is uncontrolled and may destroy prints by overdevelopment. Use this method in combination with FINDER™ Packets to promote fume and water vapor circulation.

1. Set both heater switches to the ON position.
2. While the oven warms, prepare evidence to be fumed as described above.
3. Place water into the disposable fuming tray.
4. Position the tray in the chamber near one of the heating elements. *Use caution to prevent contact with the heater—severe burns could occur.*
5. Place the evidence to be fumed in the cabinet. *DO NOT allow evidence to come into direct contact with the heater element.*
6. Open the FINDER™ Packet and attach to a convenient location on the chamber wall near the top of the chamber.
7. Close and clamp the chamber door.
8. Monitor development.

Extracting Cyanoacrylate Fumes

Some investigators find cyanoacrylate fumes very objectionable. SIRCHIE has devised an answer to the problem of how to get rid of the fumes before examining the evidence…The No. FR300 DeFumigator™! It is a self-contained cyanoacrylate filtration system that connects directly to the FR200. The noxious odors and fumes inside the chamber are drawn through a >99% efficient filtering system comprised of a HEPA Filter (No. FR301) and a Bonded Carbon-Activated Filter (No.

FR302). Removable thumbscrews permit quick, easy access to the filter compartment.

The FR200 features a built-in hanger for the FR201 Fuming Control Cards—they help take the guesswork out of fuming time.

Enhancement Techniques for Developed Prints

Because of their translucent whitish appearance, developed prints may require enhancement before they can be successfully lifted. A number of nondestructive enhancement techniques are available.

- **POWDERS—**Cyanoacrylate prints exhibit a three dimensional ridge structure. Powders, especially fluorescent and magnetic powders, may be used to lift prints. Dusting should be carried out in the usual manner; lifting may be photographic or with tapes, rubber lifters, hinge lifters or GELifters™.

- **FLUORESCENT DYES (Ardrox, Crystal Violet, Rhodamine 6G)—**These fluorescing dyes show a specificity for cyanoacrylate polymers. They can be sprayed or brushed onto the developed print, or the print can be immersed in the dye liquid. Allow approximately one minute for the dye to take, then rinse the print thoroughly with water. Ardrox can be visualized with longwave UV or with BLUEMAXX™ Illumination; Crystal Violet and Rhodamine fluoresce best with shortwave illumination. ***NOTE:*** *Consult the appropriate MSDS when using enhancement methods.*

Special Note

No. CNA110A CYANO-BLOC™ is not a cleaner and will not remove previous cyanoacrylate residue buildup. It is strictly for use in the prevention of residue build-up. However, after a number of fuming cycles, a slight film may be evident on treated surfaces. Remove this film with a dry cloth. The initial treatment

with this product will last approximately 30 days depending on the use of the fuming chamber. Reapply at least every 30 days or as needed. Your FR200 purchase includes five (5) treatment packets. To reorder CYANO-BLOC™, order No. CNA110 which includes 5 packets.

FR200 KIT CONTENTS:

1- FR200 Cyanoacrylate Fuming Chamber
1- CNA103 Omega-Print™ Fingerprint Developer, 16 oz.
1- CNA106 Omega-Print™ Disposable Fuming Trays, 25 ea.
1- CNA104 Omega-Print™ Dispersal Pads, 100 ea.
2- CNA20001 FINDER™ Cyanoacrylate Packets
1- CNA110A CYANO-BLOC™ pre-treatment/post-treatment pads, 5 ea.
1- FR201 Fuming Control Cards, pad of 50
1- FR1002 Fuming Platform, Wire Mesh
4- Evidence Support Rods
16- FR1006 Evidence Clips