

How to Perform Post Blast Evidence Swab Collection

Intro

[Scene 1]

Visual: A title screen appears with the Center of Forensic Sciences logo and “Center of Forensic Sciences” written next to it. The title “How to Perform Post Blast Evidence Swab Collection” is displayed prominently, while faint repeated text reading “Chemistry” appears in the background.

Audio: [Music: ‘Calm Background Music for Video’] Music continues to play softly in the background throughout the video.

[Scene 2]

Visual: Text appears in the center of the screen: “This video may not be copied or used, in part or in whole, without prior written permission of the CFS”.

[Scene 3]

Visual: A scientist uses a post-blast paddle swab to swab the front grill of a car. They use slow, even strokes and move the swab in only one direction.

Voiceover: “Post-blast scenes can be complex and challenging. In the aftermath of an explosion, the careful collection of evidence is crucial in understanding the type of explosive used”.

[Scene 4]

Visual: The camera shows a close-up of the swab, now heavily soiled with dark residue.

Voiceover: “In this video, you’ll learn about the correct swabs for post-blast collection”.

[Scene 5]

Visual: The scientist swabs a different surface of the car, using the same technique. The screen then fades to black.

Voiceover: “And how to successfully perform swabbing at a post-blast scene”.

Preparation/Materials

Swabbing Best Done by two People

[Scene 6]

Visual: A laboratory-like setting fades in, along with on-screen text reading “Part 1: Preparations and Materials”. A scientist enters from the left. On-screen text identifies her as “Swabber”. Another scientist enters from the right. On-screen text identifies him as “Scribe”.

Voiceover: “Swabbing is best done by a two-person team: one dedicated to swabbing, the *Swabber*, and the other handling documentation, and managing of supplies, the *Scribe*.”

[Scene 7]

Visual: The two scientists turn around to face a large table in front of them.

Voiceover: “Such division of roles is crucial in preventing multitasking, of which could lead to mistakes or contamination”.

[Scene 8]

Visual: A close-up shot of the *Scribe*, with purple-outlined text prominently labeling him as *Scribe*. Followed by a close-up shot of the *Swabber*, with blue-outlined text prominently labeling her as *Swabber*.

Voiceover: “Establish who will be *Scribe* and *Swabber*. The *Swabber* should be focused solely on swabbing, while the *Scribe* manages all else”

Swab Kit Overview

[Scene 9]

Visual: A post-blast paddle swab and cotton-tipped swab are shown, accompanied by respective text, “Post Blast Paddle Swab” and “Cotton-Tipped Swab”.

Voiceover: “Once you have decided upon roles, you will then, need a swab kit. Post-blast paddle swabs are different from cotton tipped swabs that you may be familiar with. Cotton swabs, are not suitable and should not be used”.

[Scene 10]

Visual: A CFS Explosive Residue Swab Kit is shown. On-screen reads “CFS Swab Kit”.

Voiceover: “This, is the CFS kit, which is our preferred choice for this demonstration, and provides everything you need. In Ontario – OPP-Bomb Technicians including OPP-UCRT have these kits”.

[Scene 11]

Visual: A scientist holds up the CFS Explosive Residue Swab kit, clearly displaying it to the camera. On-screen reads “CFS Swab Kit”.

Voiceover: “Other municipal Explosive Disposal Unit or EDU may have these kits as well. Please note, the kit does *not* contain acetone. And, kits are designed for *one time use*. Unused components must not be used at other scenes to prevent contamination”.

PPE

[Scene 12]

Visual: Facing the large table in front of them, the two scientists each retrieve a box of disposable gloves, reaching in to obtain a pair and putting them on. A close-up is then shown of the *Swabber* putting on her blue gloves. Text on-screen reads “PPE”.

Voiceover: “Before beginning the swabbing, it is important to protect both yourself and the evidence from contamination. At a minimum, clean disposable gloves must be worn at all times—for anybody involved. Clean, disposable Hazmat suits are also recommended to reduce the potential for contamination.

[Scene 13]

Visual: Both scientists are now wearing gloves, the *Scribe* in purple, and the *Swabber* in blue.

Voiceover: “Depending on the scene, additional PPE might also be necessary.”

Clean Surface

[Scene 14]

Visual: Facing the large table in front of them, the scientists set the boxes of disposable gloves aside. Then, a scientist unfolds a garbage bag and lays it flat on the table. Text on-screen reads “Clean Surface”.

Voiceover: “With roles established, a kit ready, and PPE donned, begin by laying out a clean surface, such as a clean unused garbage bag, or clean unused drop sheet”.

Additional Clean Gloves

[Scene 15]

Visual: A top-down shot showing the scientists place an additional box of disposable gloves on the clean surface. Text on-screen reads “Additional Clean Gloves”.

Voiceover: “First, place upon the surface a box of additional, clean gloves”.

Acetone

[Scene 16]

Visual: A bottle of acetone is placed on the clean surface. Close-up of the lab-grade bottle of acetone is shown, followed by a close-up of a commercially available acetone bottle”. Text on-screen reads “Acetone”.

Voiceover: “Next, place acetone on the clean surface. Acetone is the recommended solvent for dampening the swab, with lab grade acetone being preferred due to its purity. In situations where lab grade acetone is not accessible, commercial acetone from hardware stores may also be used. OPP-Bomb Technicians will have access to lab-grade acetone”.

Swab Kit Contents

[Scene 17]

Visual: The *Scribe* uses scissors to cut open the outer bag of the swab kit. On-screen reads “CFS Swab Kit”.

Voiceover: The CFS kit comes double-bagged for protection, with the outer bag being considered contaminated. It must NOT come into contact with the clean surface”.

[Scene 18]

Visual: The *Scribe* empties the contents of the kit onto the clean surface, ensuring the outer bag does not make contact with it. On-screen reads “CFS Swab Kit”.

Voiceover: “Carefully cut open the outer bag, and gently empty the kit onto the clean surface, without touching the inner bag with your gloves”.

[Scene 19]

Visual: The scribe discards both the kit’s outer bag, and their disposable gloves, into a nearby garbage can. On-screen reads “CFS Swab Kit”.

Voiceover: “The outer bag should then be promptly discarded along with gloves used to handle it.

[Scene 20]

Visual: The scientists each put on a clean pair of disposable gloves. On-screen reads “CFS Swab Kit”.

Voiceover: “Both the *Scribe* and *Swabber* should now start with clean, disposable gloves”.

[Scene 21]

Visual: The scribe tears open the kit’s inner bag and places the box on the clean surface. On-screen reads “CFS Swab Kit”.

Voiceover: “The *Scribe* wearing clean, disposable gloves, should carefully TEAR open the inner bag to prevent contamination from cutting tools.

[Scene 22]

Visual: The scribe opens the kit and begins removing the items. Close up is shown of a post-blast paddle swab, one of the 10 empty sample vials, the kit’s instruction sheet and sampling worksheet, a permanent marker, a CFS evidence seal, as well as two labeled vials, one marked *Swab Blank* and the other *Acetone*. On-screen text reads “CFS Swab Kit”, with accompanied text for each of the items reading: “12 Swabs”, “10 Empty Vials”, “Instructions & Worksheet”, “Marker”, “CFS Seal”, “2 Labelled Vials”.

Voiceover: "Inside, you will find a bag of 12 swabs, and 10 empty vials, as well as a instructions, a worksheet for sampling, a marker and a CFS seal. Two of the empty vials will be labelled – *Acetone* and *Swab Blank*".

Solvent Prep

[Scene 23]

Visual: The *Scribe* places the empty vial labelled *Acetone* on the clean surface and unscrews the lid. A close-up is then shown of the *Scribe* filling the vial to approximately three-quarters full with lab-grade acetone. Next, the scribe recaps the vial, discards gloves, and puts on a fresh pair of disposable gloves.

Voiceover: "The *Scribe* should remove the empty vial labelled *Acetone* from the kit. Then, open your source of acetone and fill the vial, using the pipet, to approximately $\frac{3}{4}$ full. After that, recap vial, the source, and change gloves.

Swabbing

[Scene 24]

Visual: The *Swabber* is shown, with blue-outlined text prominently labeling her as such, followed by a close-up of the *Swabber* putting on gloves.

Voiceover: "We will then begin the swabbing process. Remember, only the "swabber" should handle the swabbing, and if at any point gloves come into contact with objects in the scene, change gloves"

Collection of Blank Swab

[Scene 25]

Visual: The screen fades to black. A top-down shot reveals the clean surface with the CFS Swab kit laid out on it. Text fades in on screen: "Part 2: Swabbing". The *Scribe* then opens the bag of post-blast paddle swabs and removes one by the handle.

Voiceover: "The first swab will be a blank swab of the acetone. To do so, the "Scribe" will open the bag of swabs, allowing the "Swabber" to retrieve a swab by the handle.

[Scene 26]

Visual: The scribe uncaps the acetone vial. The swabber then dips the paddle-end of the swab into the vial.

Voiceover: "The *Scribe* will uncap the *Acetone* vial, and the *Swabber* will dip the swab into the acetone.

[Scene 27]

Visual: The swabber removes the swab and flicks it to remove excess acetone. On-screen text reads “Dip and Flick”.

Voiceover: “Then, remove the swab, and flick, ensuring that the swab head is adequately moistened, but not dripping. This is called the Dip and Flick technique”.

[Scene 28]

Visual: The *Scribe* uncaps the empty vial labeled *Swab Blank* and hands it to the *Swabber*. The *Swabber* places the paddle into the vial, aligns the notch of the swab with the top of the vial, and bends the swab until it snaps cleanly into the vial. The *Swabber* hands the vial back to the *Scribe*, who then re-caps the vial. A close up of the vial labeled *Swab Blank* containing the swab paddle is shown.

Voiceover: “Ensure that the swab paddle does not come into contact with anything except the acetone, and the vial. The *Scribe* will uncap the blank vial, and hand the vial to the *Swabber*. The *Swabber* will place the paddle of the swab into the vial, align the notch on the swab with the top of the vial, and bend the swab into the notch, until it snaps off. The vial will then be handed back to the *Scribe*. The *Scribe* will then recap the vial. This blank swab allows for a background check of the swabs and acetone”.

Collecting a Sample

[Scene 29]

Visual: The swabber uses a new paddle swab, which is dipped into the *Acetone* vial, and flicked as before.

Voiceover: “To collect a sample, Dip and Flick as we had just done for the blank swab”.

[Scene 30]

Visual: The swabber swabs the front grill of a car, using slow, even strokes in one direction only. Once the surface has been adequately swabbed, a close-up of the post-blast paddle swab, now heavily soiled with dark residue, is shown.

Voiceover: “Next, swab the designated surface with a series of rows or columns, all in the same direction. Do not go back and forth. Use both sides of the swab to maximize use of the paddles surface area. Multiple swabs may also be used for larger surfaces, or surfaces that are heavily soiled”.

[Scene 31]

Visual: The scribe uncaps a new empty vial, and hands it to the swabber. The swabber snaps the swab into the vial as before. The vial is then returned to the scribe, who recaps and labels it with the marker.

Voiceover: “The *Scribe* will uncap an empty vial and hand it to the *Swabber*. Then, once again, the *Swabber* will place the paddle of the swab into the vial, and bend towards the notch, until it snaps off. The vial should then be handed back to the *Scribe*. The *Scribe* will then cap the vial, label the vial, and document swab location details.

[Scene 32]

Visual: Close up of the *Swabber* continuing to collect samples with a new post-blast paddle swab. The screen fades to black.

Voiceover: If at any point the *Swabber's* glove come into contact with anything other than the handle of the swabs and the vials, make sure to change gloves.

Submission

[Scene 33]

Visual: The *Scribe* repacks the kit, placing inside the labelled vials, unused swabs, and completed worksheets. The *Scribe* then applies the CFS seal too the exterior of the box, sealing it.

Voiceover: "Once you have completed the swabbing process, all that remains is preparing your samples for submission. Ensure that all vials are tightly closed, adequately labelled and documented. The CFS seal is intended to be placed on the exterior of the box. Follow your own procedures for continuity. Note: Swabbing does not replace post-blast debris collection. And, please consult with the CFS if you require any clarification, or have any questions at all".

[Scene 34]

Visual: The screen fades to black, revealing text that reads: "Techniques and materials demonstrated in this video are a representation of best practices but alternate approaches may also be appropriate".

[Scene 35]

Additional text appears that reads "Contact Chemistry: 647-329-1500", "CFSChemistry.Scientificadvisor@ontario.ca", and "Order Kits from the CFS Website".

[Scene 36]

A large center of Forensic Sciences logo appears in the center of the screen.