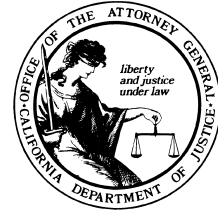




CALIFORNIA DEPARTMENT OF JUSTICE
BUREAU OF FORENSIC SERVICES
PHYSICAL EVIDENCE BULLETIN



GUNSHOT RESIDUE COLLECTION (GSR)

INTRODUCTION: Gunshot residue results from the discharge of a firearm. This includes primer, powder, and/or projectile material and products of their combustion. The residue that can be deposited on the hands of a shooter is usually the result of gases or particles escaping through openings in the weapon (such as the cylinder area of a revolver) or leaving the end of a barrel. The actual amount of residue on the hands varies with the type of weapon, ammunition, and conditions of discharge.

The analysis of gunshot residue from the hands of a shooter detects primarily trace amounts of primer residue. Because various types of ammunition have different primer components, two collection techniques are utilized to enable effective analysis.

Gunshot residue (GSR) deposits on the hands decline rapidly during the first hour after firing the weapon. In practice, GSR cannot be expected after six hours from a living subject. However in suicides, GSR can last many hours after the time of shooting. In either case, correct sample collection techniques are critical. Sampling for GSR should be performed on a live subject as soon as possible after the shooting. Ideally, samples should be taken immediately after contact with a subject in the field. **It is important to contact the crime laboratory serving your agency in order to determine the type of gunshot residue collection kit they prefer for analysis.** Generally, a single collection kit providing for SEM (adhesive disc type sampling) collection methods should be used. **Some older kits have provisions for the collection of AA samples using swabs. With the advent of automated SEM analysis, these kits are generally not used.**

CAUTION

The subject should not be allowed to wash or rub his hands prior to sampling. The subject should not be fingerprinted prior to sampling. Prior to any residue collection from the hands, visually examine the subject's hands and wrists. Record the position of any visible gunshot residue deposits (black smudges) or particles with a photo or sketch. Avoid contact with the subject's hand since this may contaminate them. Also avoid cuffing the subject's hands behind his back, if possible, since this will tend to remove any GSR from the back of the hands.

CAUTION! DO NOT TOUCH the hands of the subject in the areas to be sampled for possible gunshot residues.

If possible, thoroughly wash your hands and wrists before proceeding further to prevent any transfer contamination to the hands of the subject. Put on disposable plastic gloves provided before handling any sampling materials.

Procedure for using adhesive coated discs for SCANNING ELECTRON MICROSCOPE (SEM) analysis.

1. Select a sample disc labeled RIGHT HAND. Remove the protective cover. Do not touch the disc to anything but the subject's hands.
2. To collect gunshot residues from a person's hands, the exposed adhesive surface of the disc is pressed firmly against the back right hand in a systematic pattern until the disc loses its stickiness. Do not slide or rotate the disc on the skin. Concentrate on the web area between the junction of the thumb and forefingers and down the forefinger.
3. After the adhesive surface has been used and the hand sampling is complete, reseal the disc in the container provided.
4. Repeat this process with the left hand disc.
5. If the kit has disks for the palm lifts, use the same procedure outlined above for sampling the palms
- 6.. Fill out ALL information requested on the GSR kit. Submit it to your local crime laboratory along with the appropriate submission form and a copy of the police report.