



Forensic Detection Cards

Gunshot Residue Cards for The SEEKERe



DetectaChem

Accuracy, Mobility, and Reliability

Gunshot Residue for Forensic Detection



When a firearm is discharged gunshot residues are deposited on and around the firearm as well as on the bullet passage. This residue is normally a combination of gunpowder residues and lead residues.

Some of which can be visible but the Gunshot Residue Detection Cards offer nonvisible or trace residue detection as well and therefore enabling powerful evidentiary value. This enables similar tests performed by forensic professionals to every SEEKERe user

What is Gunshot Residue?

Modern smokeless gunpowder, and black powder, contains *nitrate* compounds. Black powder normally contains a combination of potassium nitrate (75%), charcoal (15%), and sulfur (10%). Smokeless powders can either be *single based* or *double based*. Single based gunpowder will contain *nitrocellulose* (cellulose hexanitrate) as its main ingredient. Double based gunpowder contains nitrocellulose and *nitroglycerin* (glycerol trinitrate) as its base. Some triple-based powders are also now available.

When either of these types of gunpowder burns the residue left behind will be in the form of a *nitrite*-based compound. Nitrite particles when emitted from the muzzle of a firearm will strike a nearby target and either be imbedded in the target's surface or leave a deposit of nitrite residue. Nitrites may also be left behind on or around the firearm.

Lead residues will be in a vaporous or particulate form and can come from a couple sources within a discharged cartridge. The most common source is the primer. Primers are used to start the ignition process in cartridges and commonly contain lead styphnate, barium nitrate, and antimony sulfide compounds. However, some newer primer compounds are being used that are lead and/or barium free. Cartridges containing lead based primers, when ignited, produce a vaporous cloud of residue that is expelled from the muzzle of the firearm. Additional *vaporous lead* residues can be produced when the hot gases pushing a lead bullet down a barrel melt lead from the base of the bullet.



A third form of lead residue will be in a particulate form. *Particulate lead* residue comes from minute lead particles that are shaved from the sides of a lead bullet as it travels down the barrel. Lead particulate has more mass than vaporous lead and travels greater distances. Also, gunpowder particles can be coated by the vaporous lead residues and leave what appears to be a lead particulate deposit upon striking the target. The amount of lead residue emitted from a gun can vary slightly from shot to shot. Fouling in the barrel from previous shots can slightly increase the amount of lead residue emitted from one shot to the next.

As described above, gunshot residue can be deposited on articles of clothing when in close proximity to a discharged firearm, the shooter's hands, the bullet splash or on the shot bullet itself. Forensic examiners use similar or equivalent techniques to these Detection Cards for evidentiary collection and recollection of a crime scene where a firearm was used. The Gunshot Residue Detection Cards can enable quick and powerful detection supporting these efforts.

Detection

- Lead Found in GSR
- Nitrites Found in GSR

Features and Benefits

- ✓ Detection of Nonvisible Residues
- ✓ Proven Proprietary Colorimetrics
- ✓ Forensic Quality Analysis Techniques
- ✓ Integrated and Optimized Swab
- ✓ Sealed in MIL-SPEC Rated Bag
- ✓ One time use to reduce maintenance

Compatibility

- SEEKERe MDK, EDK

FORENSIC DETECTION CARDS

Gunshot Residue Test for Lead



Detection for the presence of lead which is present with the discharge of a firearm; bullet wipe consistent with the passage of a lead-bearing bullet; or vaporous lead residue left from discharge.

The test can be performed on number of surfaces after a firearm discharge, such as the firearm, victim's hands, victim clothing, drywall, vehicle upholstery, curtains, carpet, etc.

Lead from firearm includes vaporous lead (smoke), particulate lead, lead in primer residues (e.g., lead azide or lead styphnate), lead bullet, or shot pellet wipe. Lead may be from other sources.

Lead residues may be found up to 30 feet from the muzzle, and are always present on the opposite side of a penetrated target. The amount and pattern of residue deposited may vary by the gun used to fire the bullet. Some ammunition is lead free or low lead propellants and will not be detected by this Detection Card.

What it Tests For

Lead found in bullet, smoke, primer residues, and bullet wipe

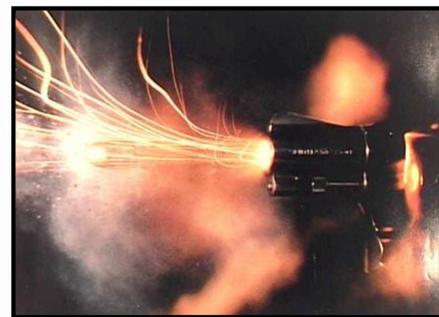
Where to Test

Firearm, victim's hands, victim clothing, drywall, vehicle upholstery, curtains, carpet, etc.

Distance of Detection

May be found up to 30 ft from muzzle.
Found on bullet splash.

Gunshot Residue Test for Nitrites



Detection for nitrites residues that are the by-product of the combustion of smokeless gunpowder. When a firearm is discharged nitrite particles are expelled from the muzzle of a firearm and can be imbedded in or deposited on the surface of a target and may be left behind on the firearm and the shooter's hands.

This same test is the primary test used by firearms examiners to determine a muzzle-to-garment distance. Patterns of chemically detectable nitrite residues of varying size and density can be found around a suspected bullet hole. These residues are often not visible, but may be detected with this Detection Card. At greater muzzle-to-target distances, no nitrite residues will be deposited.

Gunshot Residues, including nitrites, can also be emitted from other areas of the firearm beyond the muzzle and attach to surround surfaces.

Nitrites from firearm includes are formed from the nitrates that are contained in the Nitrocellulose or Nitroglycerin of the smokeless powder at the time of discharge.

What it Tests For

Nitrites formed from the smokeless powder used with firearms and dispersed from muzzle to surfaces.

Where to Test

Firearm, on surface(s) of target, victim's hands or clothing.

Distance of Detection

May be found up to 30 ft from muzzle.
Found around bullet splash.