

A Field Testing Kit for Bullet Hole Identification

The identification of bullet holes and of marks produced by projectiles may be very important in the investigation of criminal cases involving the use of firearms. Such bullet-holes are usually characterized by the presence of metals (mainly lead and copper), originating from the bullet's outer surfaces, in the margins of these holes. The morphology of the hole alone can often lead to erroneous results.



Objective

The identification of bullet-holes on various surfaces.

Lead and copper are the main components of bullet cores and jackets. A chemical method can be applied for the detection of metals deposited by the bullet at the margin of the suspected bullet-hole.

BTK (Bullet-hole Testing Kit) – a portable laboratory for the rapid identification of bullet holes.

The BTK, with its sensitive, simple, rapid, precise and reliable operation, revolutionizes the field task of scene of crime units in the identification of bullet holes.

BTK enables simple, rapid and reliable identification of suspected bullet holes in the field.

Kit Content

- Instructions for use
- Forty crushable ampoules (10 sets of 4) protected by plastic mini tubes, filled with liquid reagents for the identification of bullet-holes
- Test papers
- Plastic bags for packing the positive test papers
- Ruler for photography and a permanent pen
- Technician report forms



JANT PHARMACAL CORPORATION

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Advantages

- **Identification:** the BTK is capable of identifying bullet-holes caused by many types of bullets, namely lead, full metal jacket (FMJ), total metal jacket (TMJ) bullets, etc.

- **Direction:** if the colored imaging of the hole is circular or elliptical, it is often possible to assess the direction from which the bullet was fired.

- **Caliber:** The diameter of the projectile can be estimated from the diameter of the lead and the copper reactions color rings.

The procedure does not preclude further laboratory analysis for shooting distance estimation, if required. It should be noted, however, that if a sample for primer discharge residue (PDR) particles from the hole margins is to be analyzed – such a sample should be collected prior to the use of the BTK, and it won't interfere with the BTK results.

- **Economical:** Each package contains 10 sets of kits, enabling one to examine scores of suspected holes.

Unequivocal Results

- There are no other known substances that react in the same colors.

- Test results, in case of positive identification, are characterized by the appearance of colored rings clearly visible on the white background of the test paper.

- The color produced reflects the shape of the hole while the area further away remains uncolored. It is therefore unnecessary to sample blanks.

- It is possible to identify bullet holes on many types of targets and the identification is not biased by personal judgment.

Simple Use, Rapid Results

- The test takes 3-4 minutes from the time of sampling until final results are obtained, enabling quick screening of large numbers of suspected bullet-holes.

- Several bullet-holes can be examined by one set of test tubes.

- The kit has been designed for simplicity of operation, and can be used at the scene of crime by any technician or non-scientific police officer with some basic training.

- The BTK kit is operated very simply and includes a delivery device in each tube for efficient use.

Safety

- Minimum operator contact with chemical.

- All of the test reagents are contained within glass ampoules in specially designed protective plastic tubes.

- The test is performed by applying a few drops of reagents on Benchkote® paper (plastic-backed filter paper).

Compactness

The compactness, portability and self-sufficiency of the kit assures convenient transport and can be employed anywhere under a wide range of conditions.

Weight – 1030 gr. (41.2 oz.) width - 266 mm (10.4")

Length - 336 mm (13.1") height – 85 mm (3.33")

Shelf Life

The reagents in the kit form are stable for a long period of time (guaranteed for three years).

Proven Experience:

BTK – has been successfully used by the Israeli police.



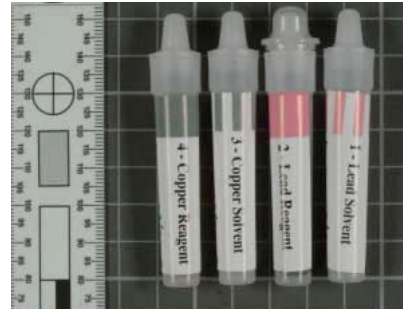
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Test Procedure



4 plastic tubes - The solvents and reagents for lead and copper are sealed in small disposable plastic tubes.



A bullet hole in plywood



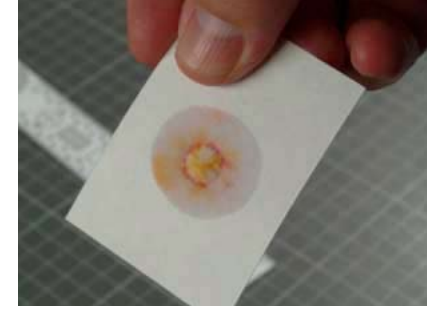
The test paper is wetted with the solvent for lead.



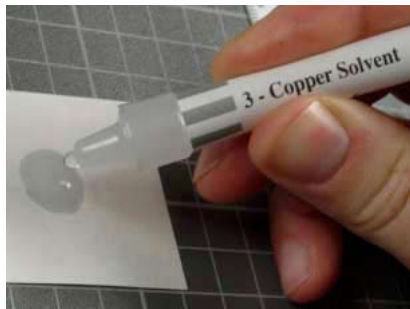
The test paper is then firmly pressed against the hole for about a minute.



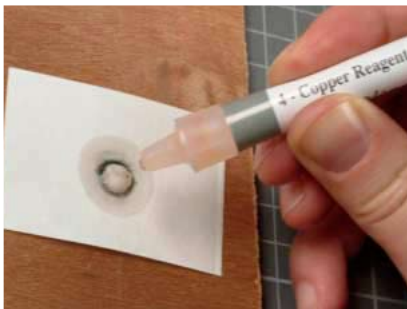
The reagent for lead is applied to the test paper



A magenta colored ring at the hole's margins is indicative to bullet-holes.



Another test paper is now being wet with the solvent for copper. The test paper is then firmly pressed against the hole for about a minute. Then the reagent for copper is applied. A green-black colored ring at the hole's margin is indicative of bullet-holes.



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