



## Detection\* of Lead in Firearm Discharge Residue Using LeadCheck® Swabs

### Background:

The LeadCheck® Swab is an extremely sensitive way to screen for the presence of lead ion (about 1 to 2 µg) on surfaces or hands. The quantity of detectable lead after firearm discharge varies with the make and condition of the weapon as well as the distance from which it is fired. Lead bullets leave a larger quantity of residue than jacketed lead bullets. LeadCheck® Swabs provide a very sensitive screening method for lead and can detect residue from either lead bullets or jacketed bullets.

A gradual buildup of lead deposits on the hands occurs after repeated shooting. A protocol using LeadCheck® Swabs can detect the presence of this buildup on hands. Normal hand washing with MetalEx™ soap will help to remove traces of lead from hands.

### Methods:

#### I. Surface Testing

Wipe the site with the dry tip of an unactivated LeadCheck® Swab. Alternatively, moisten the tip of the swab with water and then rub the surface. (Either method should collect enough lead for easy detection). A separate swab should be used for each test site, ricochet site or other sampling site minimizing cross contamination.

1. Rub either a dry or a moist Swab tip over small area of ricochet.
2. Activate the same LeadCheck® Swab.
3. While squeezing out the yellow/orange LeadCheck® reagent, rub Swab tip over the same area of ricochet.
4. Examine the Swab tip and/or test site for a pink or red color.

In this way, lead ions are either on the surface or are already picked up by the Swab tip. These lead ions now react with the LeadCheck® Reagents to give the pink color on the Swab tip and or the test area.

#### II. Hand Testing

No chemicals should touch the skin during the testing of hands for lead. The procedure described does not require chemicals to touch the skin.

1. Rub either a dry or a moist Swab tip over the hand suspected of having lead contamination.
2. Activate the same LeadCheck® Swab away from the skin.
3. While squeezing out the yellow/orange LeadCheck® reagent, rub Swab tip over a clean dry piece of plastic.
4. Examine the Swab tip for a pink or red color. Lead on the skin is collected on the swab tip.

### Interpretation:

With either method observing pink or red on the swab tip or on the surface being tested (other than skin) indicates the presence of lead at greater than 1µg to 2 µg.

\*LeadCheck® Swabs are a versatile and sensitive screening tool for the detection of lead on any surface. This applications note provides a suggested method to allow testing for a specific application. Additional information and help are available by calling 800-262-5323 or 508-651-7881.