

## TECHNICAL INFORMATION

### Explosives Residue Test Kit

#### Catalog No. ERTT10

### INTRODUCTION

Based upon an extremely sensitive test for nitrates, this kit is suitable for use in the laboratory or in the field to verify the presence of explosives in suspected debris. The test components have been pre-measured and packaged to make testing in the field easy and accurate when examining an explosive material as small as a grain of salt (0.06 gram). This test alone is not conclusive for the presence of explosives since other nitrates can also give positive results. The presence of other nitrates such as found in preservatives for food or fertilizer can be readily ascertained by a survey of the surroundings.



*No. ERTT10 Kit and Components*

### PRECAUTIONS

- Before using this kit, consult the appropriate Material Safety Data Sheets (MSDS) found on our website at [www.sirchie.com](http://www.sirchie.com) and click on MSDS.
- Wash hands thoroughly prior to using this kit.
- The ER1 Extract Reagent in this kit contains chloroform.
- Wear protective clothing, safety glasses, and gloves when handling the chemicals in this kit.
- The 290P2 Reagent contains sulfuric acid and is highly corrosive and irritating. Use with adequate ventilation.

### TEST PROCEDURE

The following directions are applicable to both field and laboratory use when it is ascertained that soil, a fragment of material, portion of a solid, or dust particles at the scene of a fire or explosion might contain an explosive residue.

1. Using the tweezers provided in the kit, transfer a grain of suspected material to an extract retention vial. If the sample is a powder, use the small stainless steel spatula rather than the tweezers (Fig. 1).
2. Remove an extract reagent ampoule labeled ER1. A band will be found at the neck of each ampoule that indicates the break-open point. The ampoule is pre-scored to reduce the risk of cuts or shattering; however, if the ampoule resists breakage, hand coverage should be used. Open by simply grasping both ends and breaking as shown in Figure 2.
3. With a disposable pipette (back row of kit), transfer enough of the ER1 extract reagent to the extract retention vial to cover the suspected debris (Fig. 3).



FIGURE 1



FIGURE 2



FIGURE 3



FIGURE 4



FIGURE 5



FIGURE 6

4. Close the sample vial tightly and shake for one (1) minute.
5. Remove one of the capillary pipettes from the kit, and remove the protective cover from the tip. Insert the tip into the sample vial. The pipette will fill automatically as it touches the liquid. Do not place a finger over the open top of the pipette because this will prevent it from filling (Fig. 4).
6. Holding the capillary pipette in a vertical position, place the tip directly onto the thin layer chromatogram sheet. A slight downward pressure may be necessary to completely empty the capillary. Several applications should be made to concentrate the spot. To re-spot the sheet, follow the above procedure three or four times, but be sure to spot the sheet in the same location each time and allow the spot to evaporate between each application (Fig. 5).
7. Remove the ampoule labeled 290P2, and open it as previously described.
8. Using a new disposable pipette, drop some of the 290P2 color-developing reagent onto the chromatogram sheet in the area where the spot is located (Fig. 6).
9. A blue to almost black color is a positive reaction for nitrates. If a positive reaction is obtained, place a larger sample in a solid sample collection vial and label it for transfer to the laboratory for more comprehensive tests.

### TEST FOLLOW-UP

1. Using a small piece of swabbing cotton wetted with some of the left-over extract reagent (ER1), clean off the forceps or spatula. They are now ready for the next use.
2. The kit was designed in the disposable concept because this test is extremely sensitive. The disposable pipettes, capillary pipette, ER1 extract reagent ampoule, and 290P2 color-developing reagent ampoule should be disposed of to avoid contamination of a sample.
3. The ER1 extract reagent is non-flammable.
4. CAUTION: The 290P2 reagent contains sulfuric acid and is highly corrosive. It is recommended that rubber or vinyl gloves be worn when opening ampoules, when applying the reagent, and when disposing of all materials that come in contact with the reagent.

### ERT10 CONTENTS:

- 20-288DP Pipettes, Disposable, w/Capillary and 3ml Bulb
- 10-290P2 P2 Color Developing Reagent, Ampoules, 2ml
- 1- ACN2 Acid Neutralizer, 2 oz.
- 3- EIL011 Evidence Identification Labels, "Crime Evidence"
- 10- ER1 Extract Reagent 1, Ampoules, 1ml
- 1- KCP139 Tweezers, Plastic, 4.75"
- 1- KCP140 Spatula, Stainless, Micro
- 3- KCP173 Vial, Glass, 1/2 oz. w/Closure
- 10- KCP174 TLC Plates, Silica Gel 60A, 250 um Layer, 5cm x 10cm
- 10- KCP191 Pipettes, 20 Microliter, w/Capillary
- 15- KCP217 Cotton Balls
- 10- KCP171 Vials, Glass, w/Closure, 1/2 dram
- 1- SF00771 Latex Powdered Glove Pair, Ambidextrous, .005" thick, Large
- 1- ERTT101 Carrying Case, Molded Copolymer, w/Latch; Dimensions: 16.25" x 7.25" x 8.625"; Weight: 4 lbs.

### REPLACEMENT SUPPLIES:

- ER1 ..... Extract Reagent, Sealed Glass Ampoule, 1ml
- 290P2 ..... Color-Developing Reagent, Sealed Glass Ampoule, 2ml
- KCP174 .... Thin Layer Glass Chromatogram Sheets, 2 per pkg.
- 288DP ..... 3ml Disposable Pipette w/capillary and bulb
- KCP191 .... 20-microliter Capillary Pipette only
- KCP171 .... Extract Retention Vials, 1/2 fluid dram (1.85ml)
- SF0075 .... Pair Vinyl Gloves
- KCP173 .... Collection Vial, 4 fl. dram (14.8ml) glass w/EIL011 pressure sensitive ID labels
- KCP 139 ... Tweezers, Plastic
- KCP140 .... Stainless Steel Spatula
- KCP217 .... Cotton Balls

T103-27ENG-REV2

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