

APPEAL FORM

Questions for this promotional examination were taken solely from the source material listed in the Source Material List. Information contained in any other material will not be considered in determining the correct answer to any question.

Houston Fire Department

HFD Investigator 1/7/2015

You may only appeal **ONE** question per form.

For Question # 26 I would like the Test Review Committee to take the following action (please check one or explain in the space provided):

- Make A the only correct answer. Other (please explain below):
 Make B the only correct answer.
 Make C the only correct answer.

Consider the following as correct answers (circle the answers you feel are correct):

A

B

C

- Give all applicants credit
 Remove the question from the exam.

Explanation: Please provide a detailed explanation of your appeal / rebuttal. **DO NOT WRITE THE TEST QUESTION ON THIS FORM.** Print/ Write legibly.

Pg 219 States "... the edges of suspected pour patterns..." and in table 14-1, under "MOST DESIRABLE COLLECTION AREAS" it lists "• EDGES OF BURN PATTERNS".

707 1820

Random Test Number

1/14/2015

DATE

Do not write in this box. This area is for Test Review Committee or Civil Service Commission use only.

Approved

Denied

Committee Chairman Signature _____

Ignitable Liquid Collection Areas

Desirable Collection Areas	Least Desirable Collection Areas
<ul style="list-style-type: none"> • West areas and insulated areas within the fire damage or pattern • Samples taken from porous plastic or synthetic fibers • Cloth, paper, and cardboard in direct contact with the item • Side seams, tears, and cracks • Edges of burn patterns • Door drains and bases of load-bearing columns or walls 	<ul style="list-style-type: none"> • Deeply charred wood • Gray ash • Edge of a hole burned through a floor • Samples from absolutely nonporous surfaces • The center of any burn pattern • In general, areas that were exposed to the greatest heat or hose streams

One factor is that the AK-9 team can search a scene much faster than any investigator and can help to locate potential evidence areas. The dogs can assist in searching vehicles, clothing by suspects, and tools or other instruments. AK-9s can assist in delayering areas suspected of being sites where an ignitable liquid was used.

Collection of Liquid Samples for Ignitable Liquid Testing

Any container in which a container is suspected of containing an ignitable liquid used as an arson accelerant or in which such a liquid was a factor in an accidental case, there is a series of recommendations for evidence recovery:

Find out whether investigators recognize the odor of the liquid to allow later testimony about odor recognition.

Collect a sample of the liquid into a sterile glass container with a hard plastic cap by pouring or drawing the liquid into a sterile pipette or eyedropper. It is good practice to place a piece of aluminum foil on top of the container before screwing down the cap.

Remove the container from the fire scene. Pour a small amount onto a safe surface, and attempt to ignite it to allow later testimony about ignition properties.

If an investigator has evidence to suspect that a specific ignitable liquid was used to set a fire (from the odor in the debris or accelerant can left behind), he or she should inform the analyst who is working on the project.

Sterile, 3- or 4-oz (90- to 118-mL) pharmacy bottles with plastic caps (not glued cap liners) are recommended for collection of suspected pure ignitable liquid samples. Using a sterile dropper or pipette, the investigator should collect about 2 oz (60 to 90 mL) of the liquid, place a piece of aluminum foil over the bottle top, screw down the cap, and place a label on the side of the bottle.

Sterile cotton balls or gauze bandages are recommended for sampling suspected ignitable liquid residue sheen (rainbow color) off the surface of suppression water in the pour pattern area. The type of glass bottles, pipettes, and eyedroppers recommended can usually be obtained from a forensic supplier, a forensic laboratory, or a pharmacy. A plastic fishing tackle box

Fire Investigator Tips

A pure ignitable liquid sample should never be placed in a metal can. If the can should become heated, internal vapor pressure could pop off the cover.

makes a convenient container in which to keep a supply of pipettes, glass bottles, gauze pads, and evidence labels.

Consult with a law enforcement evidence technician to learn where to obtain these specialized supplies.

Collection of Liquid Evidence Absorbed by Solid Materials

Accelerant residue sampling at a fire scene can be done in a way that maximizes laboratory identification of accelerant residues. Most of the laboratory procedures for liquid evidence that has been absorbed by solid materials involves testing "headspace" vapor in various ways. **Headspace** is the zone inside a sealed evidence can between the top of fire debris and the bottom of the lid. Fire and arson chemists generally recommend that evidence containers be filled to two-thirds volume with the debris sample, leaving the top one-third volume as empty air headspace.

New, unlined, uncoated steel paint cans with V-groove lids are recommended for the collection, preservation, and analysis of fire debris that is suspected of containing ignitable liquid residue. Many jurisdictions are successfully using evidence cans lined with Teflon, which have the additional benefit of inhibiting rust.

After taking the sample, the investigator should seal it in the can by firmly tapping the V-groove lid onto the can top, trying not to distort the sides of the can, which could lead to seepage of volatile gases. Some agencies require investigators to further secure the lid with tamper-resistant tape. The identification mark or evidence label should be placed on the side of the evidence can, not on the lid.

The latest generation of heat-sealed, plastic evidence pouches designed for use with ignitable liquid residue has eliminated earlier problems, according to a 1991 laboratory test conducted by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) laboratory. This type of evidence container has important advantages but remains puncture prone. The investigator should ask his or her laboratory for its recommendation. Whichever evidence container is chosen, a sample container should be submitted for testing and comparison.

Training for obtaining samples of materials suspected of containing ignitable liquid residue is provided by state and federal arson investigation schools.

The investigator should always keep in mind that ignitable liquids exposed to fire quickly burn away. Sampling for ignitable liquid residues involves identifying and sampling from the base of absorbent materials placed on a floor surface and cutting narrow splinter samples from seams and joints on wood flooring, thresholds, door casings, furniture, the edges of suspected pour patterns on carpet, and so forth. Whenever possible, the investigator should try to pulverize, shred, or splinter sample residue evidence material. Breaking a large solid sample into many smaller pieces dramatically increases the surface area from which to extract residue. Excess water should be drained.