

## FIRE DEBRIS (ARSON) EVIDENCE COLLECTION INFORMATION SHEET

### General Procedures:

- The primary laboratory examination conducted on debris from fire scenes is for the presence of ignitable liquids which may have been used as an accelerant.
- An accelerant is defined by the 2013 NFPA (National Fire Protection Association) glossary as a fuel or oxidizer, often an ignitable liquid, used to initiate a fire or increase the rate of growth or spread of fire.
- Fire debris samples suspected of containing ignitable liquids should be collected and correctly packaged as soon as possible by trained arson investigators.
- Ignitable liquids are usually volatile and can evaporate quickly. Therefore, any evidence containers used must be of a vapor and air tight material suitable for arson investigation, usually metal cans.
- Paper & normal plastic evidence bags are not suitable for submission of evidence suspected of containing ignitable liquids.

### Evidence Containers:

- Metal paint cans with lids should be new with no coatings, linings, or manufacturing oil residues.
- Cans should only be filled to 2/3 of their volume to allow for the insertion of an extraction test strip at the laboratory.
- Care should be taken to avoid getting debris in the top sealing groove of the can as this will prevent an adequate seal when the lid is attached, and may allow the sample to leak out and be lost.
- After the can lid is applied it should be gently hammered shut around the entire circumference without deforming the top of the can to ensure a tight vapor seal.
- Sample identification descriptions should be written of both the top lid and side of the can as each item is collected.
- A short piece of evidence tape should be attached over opposite sides of the lid to can top joint, initialed and dated, trying not to cover the sample information written on the lid.
- Evidence should be delivered to the laboratory as soon as possible. Dirt and soil samples should be delivered to the laboratory the same day as collected. If this is not possible, the sealed can(s) may be temporarily stored in a freezer to prevent possible degradation of the ignitable liquid by microbes found in some soils.
- When possible, a control or comparison sample should be collected from a non-suspect area containing material equivalent to that of each different item believed to contain possible ignitable liquids.
- Submissions that do not use clean metal paint cans supplied by the VSP Arson investigation unit with a lot number on the bottom should include one new, empty can from the same lot. This will be used as a blank check of can cleanliness.

### Liquid Samples:

- Liquid samples may be submitted to the laboratory in small, clean, tightly capped vials sealed with evidence tape and further contained in normal evidence bags.
- Small samplings of liquid contents from large fuel containers and other large volumes of suspected ignitable liquids may also be transferred to small, clean, tightly capped containers which are then sealed and submitted. This eliminates the need to submit big containers and large volumes of ignitable liquids which are difficult to store and process in the laboratory.

### Supplies:

- New clean paint cans with lids used for fire debris collection are available at the Sherman Williams stores in Rutland and St. Albans as well as in most paint stores in the gallon and quart sizes. The VSP Arson Investigators also may be able to supply a limited number of cans in an emergency situation if an investigator is not able to report to the fire scene.
- Clean capped vials are obtainable from Fisher Scientific as well as other scientific glassware suppliers.

### Additional Resources:

- Physical Evidence Handbook (VIBRS Homepage > Investigator's Toolkit > under "Manuals")
- VSP Arson Investigators
- Vermont Forensic Laboratory