




The National Fire & Arson Report

SEPTEMBER/OCTOBER 1983 A Publication of Investigative Research International, Inc.  VOLUME 2. NO 3

Lab Leads

INCIDENTAL ACCELERANTS

By John J. Lentini
Applied Technical Services, Inc.
Marietta, Georgia

Second only to gasoline as the arsonist's choice of accelerant is kerosene. While somewhat more difficult to ignite, kerosene burns for a longer period of time and, with proper ventilation, gives a hotter flame. Because of its higher boiling range, kerosene is more likely to leave detectable residue than is gasoline and consequently, it is detected in debris samples almost as frequently as gasoline.

A finding of kerosene in a sample, however, may not be as meaningful as a finding of gasoline. The only approved use of gasoline is as a motor fuel. Kerosene, on the other hand, has many legitimate household uses. In fact, it is the single most common incidental accelerant. Kerosene is sold as charcoal lighter fluid, as paint thinner, and as lamp oil. Colors or scents may be added, but these will seldom be detected in extracts or distillates from samples of burned debris. Deodorized kerosene, also known as low odor insecticide base, is used as the solvent in many brands of waxes, polishes and insecticides. The ingredient described as petroleum distillate on most household products is usually either kerosene or mineral spirits. When extracted or distilled from a sample of burned debris, kerosene used as a solvent is usually indistinguishable from kerosene used as an accelerant.

Another potential incidental source of kerosene is roof shingles or tar paper.

The materials are made with asphalt, which almost always contains lighter hydrocarbons characteristic of kerosene or diesel fuel. The results of a research project conducted at Applied Technical Services and published in the May, 1982, issue of *Arson Analysis Newsletter*, show that accelerant-like residues, indistinguishable from burned kerosene or diesel fuel can be obtained from both burned and unburned roof shingles. Even when programmed capillary column gas chromatographic analysis was used, the extracts of roof shingles were indistinguishable from known accelerant extracts. As a result of this study, we now strongly recommend that roofing material and tar paper be completely avoided in sampling.

A laboratory report stating a positive finding of accelerants can often be the icing on the cake that helps to prove your arson case. But only a thorough onsite investigation can protect your case from the claim that the accelerants found were usual and incidental to the premises. ■