B81 An Evaluation of E-Z Mix® E-Z View™ Clear Cans as Containers for Packaging Fire Debris

Brenda B. Christy, MS, Virginia Department of Forensic Science, 830 Southampton Avenue, Suite 400, Norfolk, VA 23510*

This presentation will introduce E-Z View™ Clear Cans as a container for the packaging of fire debris. Several studies will be presented that directly compare the suitability of the E-Z View™ Clear Cans to traditional metal cans. These cans performed comparable to, if not better than, metal cans when tested under appropriate conditions.

This presentation will introduce cans constructed of polyethylene terephthalate (PET) as favorable containers for the packaging of fire debris. When used under appropriate conditions, these containers provide a transparent, rust-free, puncture-resistant container for packaging fire debris which may assist investigators, laboratory examiners and individuals present in the court room to view the contents without opening the container.

The E-Z View™ Clear Cans are constructed of polyethylene terephthalate (PET) and provide several immediately apparent advantages over traditional metal paint cans. Primarily, the cans are transparent, thereby allowing the investigator at the scene, the laboratory examiner, as well as the individuals present in the courtroom to view the contents without opening the container. Secondly, the PET containers will not rust like traditional metal cans and will not puncture as easily as heat resealable nylon evidence bags. These advantages, as well as the favorable laboratory evaluation, may justify a place for these containers as an option for the packaging of fire debris. This study is not intended to endorse the use of these containers but rather to introduce them to the fire debris community as an option for consideration.

Several laboratory studies directly comparing metal cans to the PET cans are presented which tested the container's durability, any background observed from the container alone during both solvent (pentane) and passive adsorption/elution (charcoal strip) extractions, the loss of petroleum product sample from the container over time, the possibility of cross-contamination between containers in a closed environment and the recovery of trace levels of various petroleum products over time. In each of these tests, the PET cans performed comparable to, if not better than, the metal cans. Negligible background was observed from both the metal and PET cans using both the solvent and passive adsorption/elution extractions.

Several factors need to be evaluated by each laboratory system before adopting these containers. The PET cans do not perform well at charcoal strip extraction temperatures exceeding 65°C. The lids must be securely taped to the body of the cans to prevent "popping" during the heated charcoal strip extraction. Experimental techniques using magnets to hold the charcoal strips in place would need to be altered to use strings threaded between the lid and the can because magnets do not hold well on these containers during the extraction. Finally, investigators and lab staff should practice placing and removing the lids from the PET cans prior to their use as an incorrect technique can damage the lids. One additional advantage offered by these containers is that with proper technique the lid can be sealed tightly without the use of a hammer or other instrument.

In addition to fire debris, these containers present a unique option for other types of evidence submitted to forensic laboratories. The lack of metal makes these containers ideal for the collection and storage of chemical reaction bottle bombs. Liquid samples, such as those used to store handguns recovered from and stored in the water in which they were found, are also ideally collected in the PET containers. The PET paint cans may prove themselves an asset to forensic laboratories for use with a multitude of evidence types.

Fire Debris, Packaging, PET Paint Cans

 ** Presenting Author*