

Thursday 9:50am S502b Session 20400-500

Extension of the Methodology for Ambient Temperature Headspace in 2mL Vials for Blood Alcohol by GC to the Toxicology Analysis of Inhalants of Abuse

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Abstract.

Previously, we reported an improved method for determining Blood Alcohol levels using the Ambient Temperature Headspace from a standard 2mL autosampler vial analyzed by a packed column GC method (*Pittcon 2002, Poster 1469*). The analysis is robust, reliable, and rapid, with a typical analysis time of 3 minutes per injection. Excellent reproducibility (RSDs typically < 0.5%) has been observed since the method was first reported; over 6000 samples have been run to date.

Alkyl nitrites are a commonly abused inhalant. Amyl Nitrite, once used as a treatment for angina, continues to be regulated by the FDA. Alternate alkyl nitrites have been abused by inhalation as well, and have been banned for sale by the Consumer Product Safety Commission.

In the blood stream, alkyl nitrites rapidly hydrolyze to yield the parent alcohol. The finding of 2-propanol, 1-butanol or 1-pentanol in the blood is an indication of possible alkyl nitrite abuse.

Other organic solvents, such as toluene, are frequently abused, and in many instances result in death by asphyxiation. These solvents, in their inhaled form, are found in significant quantities in the blood of the deceased.

In this report, the modifications of this method required to analyze blood samples for the common inhalants of abuse will be shown. Results of the analysis by this method of several standards and authentic samples will be given. A discussion of the advantages and pitfalls of using this method will be presented.