

**FORENSIC TOXICOLOGY LABORATORY
OFFICE OF CHIEF MEDICAL EXAMINER
CITY OF NEW YORK**

**HALOGENATED HYDROCARBONS
(COLOR TEST)**

PRINCIPLE

Halogenated hydrocarbons react with pyridine in an alkaline medium to produce a pink to red color. This test can be applied to urine or a protein free filtrate of blood to determine the presence of halogenated hydrocarbons.

SAFETY

The handling of all reagents, samples and equipment is performed within the guidelines detailed in the safety manual.

REAGENTS

All chemicals should be analytical reagent grade.

1. Pyridine
2. Sodium hydroxide, 20 g/100 mL
Dissolve 20 g of sodium hydroxide in water and dilute to 100 mL. (Prepare fresh prior to use)

PROCEDURE

1. Label test tubes including a positive and a negative control. Use chloroform as positive control.
2. Pipette 1 mL of urine or a protein free filtrate of blood into the test tube and add 1 mL of 20% NaOH.
3. Carefully overlay with 1 mL of pyridine.
4. Place in boiling water bath.
5. Note any color change.

INTERPRETATION

The pyridine layer will develop a pink to red color in the presence of halogenated hydrocarbons.

INTERFERING SUBSTANCES

Great care and control must be exercised in performing this analysis. Chlorinated hydrocarbons are ubiquitous in most toxicology laboratories and could interfere with the procedure. *A reagent blank must be processed with each series of analysis to insure the reliability of the test result.*

ACCEPTANCE CRITERIA

1. Only specimens that have been analyzed with successful controls can be reported.
2. Negative control must not react with pyridine.
3. Positive control must produce a color in the presence pyridine.

REPORTING

1. Samples which do not cause a color reaction with pyridine will be reported as "halogenated hydrocarbons not detected".
2. Samples which cause a color reaction with pyridine will be reported as "halogenated hydrocarbons detected".

REFERENCE

Irving Sunshine, ed., *Methodology for Analytical Toxicology*. CRC Press, Inc.; Boca Raton, FL, 1975.