

ERIE COUNTY  
CENTRAL POLICE SERVICES  
FORENSIC LABORATORY



45 ELM STREET  
BUFFALO, NEW YORK 14203  
(716) 858-7409

## Methods Used in the Examination of Evidence

The Erie County Central Police Services Forensic Laboratory uses accreditation approved procedures in the examination of forensic evidence. The following is a list of general methodologies used in the examination of submitted evidence.

<b>Seized Drugs</b>	<p>The following tests are used in the analysis and identification of Controlled Substances:</p> <ol style="list-style-type: none"> <li>1. <u>Marihuana/Plant Material</u>: weight determination, macroscopic and microscopic examination, chemical analysis and gas chromatography/mass spectrometry (as needed).</li> <li>2. <u>Suspected Controlled Substances</u>: weight determination, chemical screening, gas chromatography/mass spectrometry, infrared spectroscopy and thin layer chromatography (as needed).</li> <li>3. <u>Controlled Pharmaceuticals</u>: weight determination, preliminary visual identification and confirmation using gas chromatography/mass spectrometry.</li> <li>4. <u>Quantitative Analysis (Cocaine Base only)</u>: gas chromatography.</li> </ol>
<b>Fire Debris/ Ignitable Liquids</b>	<p>The following tests are used in the analysis and identification of Ignitable Liquids:</p> <ol style="list-style-type: none"> <li>1. <u>Ignitable Liquid Residue</u>: passive headspace adsorption, elution and gas chromatography/mass spectrometry.</li> <li>2. <u>Ignitable Liquids</u>: flame test and gas chromatography/mass spectrometry.</li> </ol>
<b>Trace and Impressions</b>	<p>The Laboratory is accredited to perform examinations, comparisons and identifications (where applicable) on paint, polymers, pressure sensitive adhesives (tape), impressions and items submitted for general physical and chemical analysis (to include dye packs) using the following methods:</p> <ol style="list-style-type: none"> <li>1. Physical and chemical properties are examined for comparison and identification (where applicable) using any of the following techniques: microscopy, infrared spectroscopy, gas chromatography/mass spectrometry, microspectrophotometry (for colored materials).</li> <li>2. A visual examination of class, wear and individual characteristics visible on impression evidence is performed and compared to that of a known item (i.e. footwear, tire) to determine whether there is an association between the known and the impression evidence.</li> <li>3. A visual examination of the physical properties of materials, often fractured, is performed on multiple items to determine whether they were once joined</li> </ol>

	as a single object (physical match analysis).
<b>Firearms</b>	<p>The following methods are used during the examination of firearms and related evidence:</p> <ol style="list-style-type: none"> <li>1. Operability testing on firearms.</li> <li>2. Determination of the overall firearm and barrel length.</li> <li>3. Microscopic examination and comparison of recovered ammunition components and test-fired ammunition components.</li> <li>4. Entry and searching of cartridge cases into NIBIN (National Integrated Ballistics Information Network). The extent of NIBIN database searches routinely include regional and local cases. At a minimum the top ten ranked images from each search are evaluated.</li> <li>5. Serial Number Restoration using physical, chemical and magnetic methods.</li> </ol>
<b>Biology/DNA</b>	<p>The following general methods are used in Biology/DNA:</p> <ol style="list-style-type: none"> <li>1. Macroscopic and microscopic examination of clothing and other evidence items for the presence of body fluids and fabric separations.</li> <li>2. Presumptive chemical, immunochromatographic and microscopic analysis for the indication or identification of body fluids (blood, semen, saliva, feces and urine).</li> <li>3. Nuclear DNA testing using autosomal (PowerPlex® FUSION) and Y-chromosome (PowerPlex® Y23) PCR/STR analysis with capillary electrophoresis using the ABI 3500 Genetic Analyzer.</li> <li>4. Entry and searching of qualified DNA profiles in CODIS (Combined DNA Index System).</li> <li>5. Probabilistic genotyping utilizing STRmix software.</li> </ol>

<b>Current Revision</b>		
Date	Author	Comments
3/14/2018 12:41:21 PM	Schmitz, Michelli A.	Added extent of NIBIN database search to Firearms, #4.