



Laboratory Logistics Photo Glossary

Descriptions of Consumable and Durable Laboratory
Supplies and Equipment



November 2011

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PEPFAR
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Cover photo: From left to right—Hand holding a microtainer, USAID | DELIVER PROJECT; a vortex mixer, Masur, Creative Commons Attribution; test tube, USAID | DELIVER PROJECT.




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Laboratory Logistics Photo Glossary:

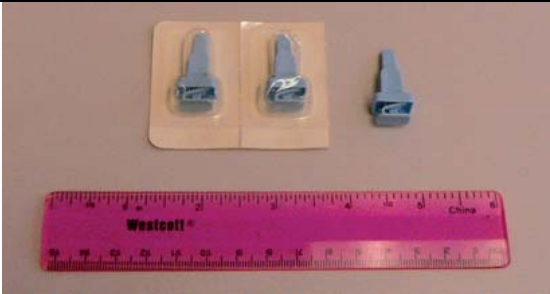
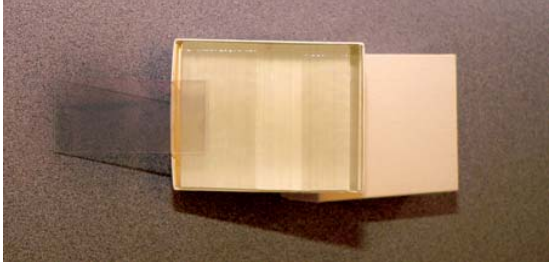

Descriptions of Consumable and Durable Laboratory Supplies and Equipment




Product	Description and Use	Photo
anaerobic jar with anaerobic sachets	<p>An anaerobic jar is airtight and is fitted with a pressure gauge to monitor pressure inside. The anaerobic sachets are used to create a low-oxygen environment inside the jar. When cultures are placed inside the jar, the environment promotes the growth of microorganisms, which grow well with little oxygen. Because of this characteristic, it is used to isolate and identify microorganisms that may be clinically important. No catalyst is needed and no water is required.</p> <p>Use: System rapidly generates an anaerobic (no oxygen) or microaerophilic (very little oxygen) environment necessary to cultivate anaerobic microorganisms.</p> <p>Tests: Isolation of microorganisms that require little or no oxygen for their growth.</p>	
antibiotic disk dispenser	<p>Sterile antibiotic discs are dispensed onto cultures to test whether the microorganisms are sensitive or resistant to the antibiotic contained in the disk. A-6 cartridge disc dispenser dispenses up to 6 different antibiotic disks onto the culture media at one time.</p> <p>Use: To dispense the antibiotic sensitivity disks onto sensitivity media on a culture plate.</p> <p>Tests: Antibiotic sensitivity test</p>	




Product	Description and Use	Photo
autoclave tape	<p>1-inch wide tape, 54.5 meters (60 yards) long</p> <p>Use: Tape is strapped to a pack of items to be sterilized in an autoclave; when autoclave temperature reaches 120°C (248°F) (hotter than boiling water), visible strips appear on the autoclave tape. Tape displays visually that the pack has passed through a steam sterilization cycle (autoclave).</p> <p>Tests: Confirms that autoclave temperatures have been reached and sterilization has taken place.</p>	
bijou bottle	<p>Screw cap, glass, 5 ml</p> <p>Use: For liquid and solid cultures</p>	
biosafety cabinet (BSC)	<p>An enclosed ventilated laboratory workspace for safely working with materials contaminated (or potentially contaminated) with dangerous bacteria or viruses. There are 3 classes of biosafety cabinets.</p> <p>Class 1 protects personnel and the environment from contamination.</p> <p>Class II protects personnel, the environment, and the specimens from contamination.</p> <p>Class III is generally installed in maximum containment laboratories that work with very dangerous bacteria and viruses. Provides the highest level protection for personnel, the environment, and specimens from contamination.</p> <p>Use: The primary function is to protect the worker and the environment from contamination when laboratory tests are being performed.</p>	





Product	Description and Use	Photo
<p>blood culture bottles</p>	<p>The culture bottle is closed with a metal screw cap that has a small hole in the center, and is sealed with a rubber. Blood drawn from a patient is added to the culture bottle by piecing the rubber in the center opening using a needle and syringe. Blood culture bottles can be sterilized and reused.</p> <p><i>Use:</i> Inoculation of blood sample to culture media to promote growth of suspected microorganisms from the bloodstream of a patient.</p> <p><i>Test:</i> Blood culture</p>	
<p>Bunsen burner</p>	<p>General purpose, single gas flame heat source. Uses propane gas; the flame temperature can be controlled by adjusting the air-gas mixture ratio.</p> <p><i>Use:</i> For heating, sterilization, and combustion</p>	
<p>caliper</p>	<p>Measures up to 150 mm; high-caliber stainless steel; metric; etched graduations in increments of 0.001 and 0.02 mm</p> <p><i>Use:</i> To measure internal and external dimensions; measuring range is 0–150 mm/0–6." It measures the zones on the Mueller Hinton medium when doing antibiotic sensitivity testing.</p> <p><i>Tests:</i> Antibiotic sensitivity tests</p>	 <p>Photo courtesy of www.glue-it.com.</p>




Product	Description and Use	Photo
centrifuge tube	<p>Tapered tubes made of glass or plastic; 10 ml</p> <p><i>Use:</i> To hold samples for spinning in a centrifuge.</p>	
counting chamber	<p>An accurately dimensioned chamber in a microslide (a slip of glass on which a preparation is mounted for microscopic examination) and that can hold a specific volume of fluid; it is usually ruled into divisions to facilitate counting of cells, bacteria, or other structures in the fluid under the microscope.</p> <p><i>Use:</i> To determine the concentration of cells in a liquid sample, particularly to count red and white blood cells and platelets. Most widely used counting chamber is called a hemocytometer because it was originally designed for blood cell counts.</p> <p><i>Test:</i> Manual WBC; RBC; platelet count (all part of FBC)</p>	
Erlenmyer flask (conical flask)	<p>Pyrex; flat bottom; 250 ml</p> <p><i>Use:</i> For general lab mixing, for example, reconstituting media.</p>	




Product	Description and Use	Photo
lancet	<p>A short, pointed blade used to obtain drops of blood for testing. It has a guard above the blade that prevents a deep incision, and it is a single-use, disposable device.</p> <p>Use: To prick the finger or ear for a capillary blood sample.</p>	
microscope slide	<p>Single, frosted piece of glass; pre-cleaned by manufacturer; 76.2 mm × 25.4 mm × 1.2 mm</p> <p>Use: To analyze a specimen under a microscope.</p>	
microscope slide cover slips	<p>Light, plastic squares fitted for the glass microscope slides at 76.2 mm × 25.4 mm × 1.2 mm</p> <p>Use: Placed over a specimen on a glass slide that is to be examined</p> <p>Tests: Stool or urine microscopy; wet mounts; and histology slides</p>	



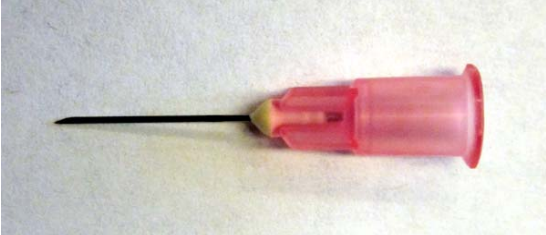
Product	Description and Use	Photo
<p>Microtainer</p>	<p>BD Microtainer® tubes are small, unbreakable plastic tubes with flow top collectors (allow drops of blood to get into the tube) and color-coded closure plugs. The tubes contain additives. Additive choice depends on the analytic test method and is specified by the manufacturer of the test reagent and/or instrument on which the test is performed.</p> <p><i>Use:</i> Collection of blood specimens from children and babies</p>	
<p>microtitre plates (microplates)</p>	<p>A flat plate with multiple “wells” used as small test tubes. The wells can hold small volumes of reagents and allow reactions to take place in the wells. A microtitre plate typically has 6, 12, 24, 48, 96, or 384 sample wells.</p> <p><i>Uses:</i> There are microplates for just about every application in life science research that involves filtration, separation, optical detection, storage, and reaction mixing or cell culture.</p> <p><i>Tests:</i> ELISA and molecular applications</p>	
<p>measuring cylinder</p>	<p>Glass, graduated with spout; durable amber-colored marking</p> <p><i>Use:</i> To measure volumes of liquids in reagent preparation.</p>	




Product	Description and Use	Photo
<p>Microloop, calibrated</p>	<p>The Microloop Nichrome® wire loop is held in a suitable Microloop® holder. The loop is first sterilized by flaming, for example with a Bunsen burner; and then allowed to cool before collecting test material, such as urine specimen or bacterial colonies from an agar plate.</p> <p><i>Use:</i> To transfer a known volume of urine to culture media when doing urine cultures.</p> <p><i>Tests:</i> Urine culture</p>	
<p>multichannel micropipette</p>	<p>Micropipette with digital display, graduation of 0.2 µL; with pipette tip ejector; fully autoclavable; 8 channels, 20–200 µL</p> <p><i>Use:</i> For pipetting specimen and reagents into the microtitre plates.</p> <p><i>Tests:</i> ELISA testing and molecular biology techniques. High accuracy and precision.</p>	
<p>Nichrome wire</p>	<p>A 26-gauge metal wire attached to a plastic handle</p> <p><i>Use:</i> To pick colonies from a culture plate or introduce specimens to a culture media. Wire is sterilized by repeated heating and cooling. Nichrome material is able to withstand repeated rapid heating and rapid cooling and still maintain its original shape.</p>	

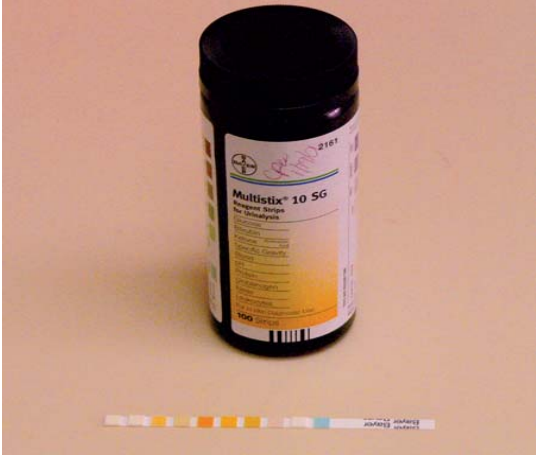


Product	Description and Use	Photo
petri dish	<p>Shallow glass or plastic cylindrical dish with a lid</p> <p><i>Use:</i> To hold solid culture media and culture microorganisms. Glass petri dishes can be reused by sterilization; plastic petri dishes are disposable.</p>	
micropipette	<p>Metal device with a precise, fixed, tip ejector; 10 microliter (μL), 100 μL, 1,000 μL, etc.</p> <p><i>Use:</i> To measure very small volumes of reagents and specimens when high precision is required to dispense fluids.</p>	
pipette tips	<p>Plastic fitted for the ends (tips) of micropipettes</p> <p><i>Use:</i> Enables micropipettes to draw liquid. Different types of tips are used based on the volume of the liquid that is being transferred: yellow tips, 20–200 μL; blue tips, 200–1000 μL; and disposable tips for micropipettes, 20–200 μL.</p>	
scalpel handle	<p>Stainless steel; milled gripe area; 5.5 inches</p> <p><i>Use:</i> To hold a scalpel blade</p>	



Product	Description and Use	Photo
scalpel vein needle	<p>Very small needle, 25-gauge</p> <p><i>Use:</i> To collect blood from pediatric scalp veins.</p>	
serological pipette	<p>10 ml, graduated, with permanent amber marking; bulk packaging</p> <p><i>Use:</i> For dispensing measured amounts of liquids; these can be disposable or reusable.</p>	
specimen swabs	<p>6-inch, cotton-tipped applicator stick; sterile; individually packed</p> <p><i>Use:</i> For collecting specimens</p> <p><i>Tests:</i> Pus and wound cultures</p>	

Product	Description and Use	Photo
sputum container	Plastic, 28 ml; screw cap; wide mouth; label <i>Use:</i> To collect sputum specimens for TB staining and TB culture.	
staining jar	Heavy glass jars <i>Use:</i> For dipping slides to stain and to hold staining reagents ready for use—example: malaria stain.	
staining rack	Stainless steel holder with inserts for up to 20 slides <i>Use:</i> For staining many slides at the same time.	

Product	Description and Use	Photo
stool container	<p>A 28 ml plastic or glass container; screw cap; plastic spoon and exterior label</p> <p><i>Use:</i> To collect stool for testing purposes.</p>	
syringe	<p>2 or 5 ml; plastic; attaches to needle</p> <p><i>Use:</i> To draw blood.</p>	
syringe needle	<p>23-gauge × 1 needle, fits on a syringe</p> <p><i>Use:</i> To draw blood.</p>	

Product	Description and Use	Photo
test tube	<p>Made of special glass that does not crack when heated; does not corrode easily when used with acids and alkalis during reactions.</p> <p><i>Use:</i> Tubes for contained reactions.</p>	
tourniquets	<p>Straps made of rubber; may have Velcro fasteners</p> <p><i>Use:</i> Reduces blood flow by compressing blood vessels; causes venous or arterial constriction for maximum ease in drawing blood.</p>	
transfer pipette	<p>Disposable; made of low-density plastic with a small bulb on one end that is used to draw up liquid.</p> <p><i>Use:</i> For transferring small amounts of liquids or suspension; low accuracy and precision.</p>	

Product	Description and Use	Photo
urine test strip	<p>Plastic strips with squares that change color to convey test results; often stored in glass containers.</p> <p>Uses: To test urine by dipping strips into the urine and observing for color changes. The color changes are compared to a chart for interpretation. Strips can be for a single test or can be used to test up to 10 times per strip.</p> <p>To measure urine for glucose, bilirubin, ketones, specific gravity, blood, pH, protein, urobilinogen, nitrite, and leukocyte esterase. The results of this testing are considered to be semiquantitative.</p>	
vacutainer	<p>Blood collection tubes with a vacuum that causes blood to flow easily into the tube when a vacutainer needle is used. The tubes are used to collect blood for different types of laboratory tests. They are color-coded, based on the test, so they are easy to recognize.</p> <p>Uses: Collection of blood for CD4, FBC, chemistries, viral load, coagulation studies, etc.</p>	
vacutainer adapter/holder	<p>Holds vacutainer needle in place to allow for a needle to be inserted into a patient's vein and into the vacutainer tubes. It's needle-retraction mechanism retracts the needle when blood collection is completed.</p> <p>Use: To hold the needle to the tube and the patient when using vacutainer tubes to collect blood.</p>	

Product	Description and Use	Photo
<p>vacutainer needle</p>	<p>Double-pointed needle; one side pierces the vein of the patient and the other side pierces the vacutainer tube. The needle is held in place by screwing it onto a vacutainer holder. Common size is 21-gauge. The needle retracts into the holder automatically when blood collection is complete, making it a safer method for blood collection and minimizes needlestick injuries.</p>	
<p>vortex mixer</p>	<p>A simple device commonly used in laboratories to mix the contents of small tubes of liquids using rapid oscillation. It has an electric motor with the drive shaft oriented vertically and is attached to a cupped rubber piece mounted slightly off-center.</p> <p>Use: Mixes small volumes in test tubes or centrifuge tubes by vigorously shaking the contents when tubes are pressed against a rubber mixing cup that is vibrating at high speed.</p>	 <p>Photo courtesy of Masur, available under a Creative Commons Attribution-Share Alike 3.0 Unported license.</p>

For more information please visit
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