brief discussion  

Chemstrip 5 OB, 7  

For further information, contact Roche Diagnostics Technical Service Center, 1-800-426-9746, 7 days a week. 24 hours a day, 365 days a year.

Results  

For the Urinsys 110 Urine Analyzers: Refer to the operator's manual regarding results. Measurements should be performed immediately after removal of the strips from the original stopper, which contains a drying agent.

Test principle  

A brief discussion of each test principle follows.

pH: The test pad contains the indicators methyld red and bromthymol blue. These give clearly distinguishable colors over the pH range of 5-9. Colors range from orange through yellow to green.

Leukocytes: Leukocytes in urine are detected by the action of esterase, present in granulocytes and monocytes, which splits the hydrophobic anthranilic acid ester into indoxyl. The indoxyl forms a red complex with a diazotizated salt to produce a purple color.

Nitrile: Nitrile, if present, reacts with an aromatic amine to give a diazotium salt, which combines with sulfanilamide to yield a red-violet azo dye.

Protein: The detection of protein is based on the so-called "protein error of pH indicators." The indicator used in this test is 3,3',5,5'-tetrahydroxynaphtho-3,4,5-teramethoxysulfonilphenol. A positive reaction is indicated by a color change from yellow to light green/green.

Glucose: Glucose detection is based on the enzymatic glucose oxidase peroxidase/glucose 6-phosphate dehydrogenase reaction. The enzyme utilizes the enzyme glucose oxidase to catalyze the formation of gluconic acid and hydrogen peroxide from the oxidation of glucose. In turn, a second enzyme, peroxidase, catalyzes the reaction of hydrogen peroxide with the chromogen tetramethylbenzidine to form a green dye complex. A positive reaction is indicated by a color change from yellow to green/blue.

Ketones: The ketone test in this test pad is based on the reaction of sodium periodate and glyoxal with acetoacetate and acetone in an alkaline medium to form a violet dye complex. A positive result is indicated by a color change from beige to violet.

Blood/Hemoglobin: The chemical detection of blood is based on the strongly pseudoperoxidase action of erythrocytes and hemoglobin. Hemoglobin and myoglobin, catalyzed by the enzyme catalase, will oxidize the hydrogen peroxide in a periodate containing the test pad. Intact erythrocytes hemoglobinize on the test pad, and the liberated hemoglobin produces a green color. Since the test pad absorbs almost all oxyhemoglobins before they can oxidize while blood would correspond to 1.5 pellets. A scattered or greened dots on the yellow test pad are indicative of intact erythrocytes. A uniform green coloration of the test pad is indicative of free hemoglobin, myoglobin, or hemolyzed erythrocytes in the urine.

Reagent composition  

See the outside of the test strip box for reagent composition.

Precautions and warnings  

For in vitro diagnostic use only.

Exercise the normal precautions required for handling all laboratory reagents. Dispense all reagents under an exhaust hood in a fume chamber with local guidelines. 

Avoid contact with skin and mucous membranes; flush affected areas with copious amounts of water. Get immediate medical attention for eyes or ingested material.

Gloves: The "universal precautions" recommended by the Centers for Disease Control and Prevention should be followed whenever blood or body fluids are handled. These precautions include wearing gloves.

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