ZINKER'S (Classic) FIXATIVE (Stock) SOLUTION

Use all appropriate safety measures when working with Zinker's (classic) fixative (stock) solution. Refer to the relevant safety data sheet(s) and packaging.

The use of a fixative is a first step in the preservation of tissue specimens. The purpose of using any fixative is to preserve a specimen over the long term without changing it more than necessary and so preserving both the specimen and its finer details. The choice of which fixative to use depends on the nature of the specimen to be fixed and the further processing intended for that specimen. Hempstead Halide's® produces two versions of Zinker's solution: the classic formulation using mercury chloride and a modified form without mercury and using zinc chloride in its place. We recommend Zinker's (classic) fixative (stock) solution for:

- Histology practice, generally,
- Tough tissues generally,
- Fixing nuclear chromatin,
- Connective tissues, and
- Cytoplasmic features.

The stock solution turns specimens slightly orange, but this can be washed out prior to staining.

Important considerations in the use of Zinker's (classic) fixative (stock) solution:

- The mercury component is highly toxic. This includes by absorption through the skin and all appropriate safety measures should be used when handling the fixative.
- The potassium dichromate component is toxic, and any spillage or unused solution should be treated as hazardous waste.
- Refer to the Safety Data Sheet (SDS) supplied with the product and on the hempsteadhalide.com website. Also, refer to the warning label on the bottle or packaging of Hempstead Halide's® Hollande's fixative solution.
- The fully prepared form of the solution is unstable, and the necessary acidic acid (5% v/V) should be added shortly before use.

Solution preparation:

- Dispense a volume of Zinker's classic solution larger by a factor of twenty (20) in volume to receive a specimen to be fixed. (e.g., a 25ml bottle of Hempstead Halide's® Zinker's classic solution will accommodate a specimen with a volume of 1.25cc). To this volume of stock solution, add 5% by volume of glacial (37%) acidic acid and mix the combined solution. Hempstead Halide® offers Zinker's classic solution in a self-mixing syringe that combines the stock solution with the acidic acid component, ready for use.

Specimen preparation:

- Back-lit microscopy specimens to be fixed should be less than 5mm thick.
- Immerse a specimen in Zinker's classic solution as soon as it is removed from the host organism.
- For small specimens, the solution may be applied dropwise.

Fixation Procedure:

- Immerse the specimen completely in Zinker's fixative.

- This emersion should last for four (4) to twenty-four (24) hours, depending on the physical properties of the specimen being fixed (thicker, tougher = longer).
- After fixation, wash the specimen for at least one (1) hour in running water until the orange color has gone and the wash-water in pH neutral. After fixation and passing through lower concentrations of aqueous alcohol solutions, the specimen may be held in a seventy percent (70%) aqueous alcohol solution indefinitely. Otherwise, the specimen will be ready for further processing by a tissue processor, a microtome (*see* TECH031), a clarifying solution (*see* TECH011, 012, 013, 014, and 028), staining (*see* TECH029), and mounting (*see* TECH001, 002, 003, and 030).

