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## INTRODUCTION

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**PURPOSE:** This manual was designed to provide standardized staining procedures for the histology laboratory. All procedures in this manual are tried and proven and will give positive staining results if followed. No changes to procedures are to be made without prior approval from the histology supervisor or the chief of surgical pathology.

**PRINCIPLE:** By standardizing staining procedures, pathologists can depend on the staining results. All written procedures and updates are dated and approved individually and the manual in its entirety is reviewed annually by the division chief.

**CONTROL:** The majority of the stains in this manual require a known control slide.

**FIXATION:** Some techniques require special fixation. Most are compatible with formalin.

**TECHNIQUE:** The thickness of the section is essential to certain stains. Frozen or paraffin processed tissue samples are essential to certain stains.

**EQUIPMENT:** Rinse all glassware in distilled water (DI) prior to use.

**REAGENTS:** Formulas for all reagents are noted on each procedure. Each formula will state either that it must be made fresh or a suggested storage date will be given. Corresponding labels for each reagent are pre-printed and include: preparation date, the technician who prepared it and an expiration date. The date on the coplin jar labels corresponds to the date it was poured into the jar, not the preparation date.

**SAFETY:** Gloves, goggles and lab coats are provided for everyone and should be worn when working with chemicals. Nitrile gloves are suggested when working with solvents and acids.

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Heated solutions must be opened in the fume hood to avoid hazardous vapors escaping into the laboratory.

Some hazardous warnings are listed, but there are many stains in the reference books listing findings as "unknown".

Xylene is a mild to moderate skin irritant and a mild to severe eye irritant. It is toxic by ingestion, inhalation and skin contact. Target organ effects on respiratory and central nervous system, the liver and fetuses. Repeated exposure produces neurotoxic effects. Xylene is also flammable.

Flex 100 (isopropanol and methanol) causes moderate irritation to skin and can cause dermatitis. It is a severe eye irritant. Flex 100 can cause gastrointestinal irritation, nausea, vomiting, diarrhea, blindness and death on ingestion. Excessive inhalation of vapors can cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache, possible unconsciousness, and even death. Overexposure has been suggested as a cause of liver abnormalities and eye and kidney damage. It is flammable.

**PROCEDURES:** Step by step procedures are listed. Procedural changes must be initialed and dated by the histology supervisor and brought to the attention of all technicians at the laboratory meeting.

**RESULTS:** The final staining results are listed with each procedure. All special stains must be checked microscopically before the slides are delivered. If there is a question concerning stains or results, preview them with the histology supervisor or one of the pathologists.

**NOTES:** These are helpful tips and trouble shooting techniques. Due to lack of space, most of the procedure cards do not have the notes listed.

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**REFERENCES:** All references to the procedures used are given and are attainable in the histology Supervisor's office. Always refer to the original procedure when trouble shooting, problems may be caused by typing errors.

Crookham,J, Dapson,R, Hazardous Chemicals in the Histopathology Laboratory, 2nd ED, 1991, Anatech

Prepared:\_\_\_\_\_ By: \_\_\_\_\_

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