

# Safe Operating Procedure

(9/06)

## **PRESERVED SPECIMENS HAZARDS, STORAGE, LABELING, AND DISPOSAL**

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(For assistance, please contact Fawn Crotty x8447)

Biological specimens such as fish, amphibians, mammals and other organisms are often placed in a sealed container with a preserving solution to prevent the tissues from decomposing. The most commonly used preserving solutions are:

Formaldehyde and water	Glycerin
Acetic acid, ethanol, formaldehyde and water (sometimes abbreviated FAA)	Formaldehyde/methanol(called formalin) and water
Glycerin and methanol (called glycerol)	

Sometimes the organism is left in one of these solutions for long-term storage. More commonly, the initial preserving solution is poured off and the organism is placed into one of the following long-term storage solutions:

Glycerin	Glycerin and methanol (glycerol)
Ethanol (or isopropanol) and Water	Formaldehyde/methanol(called formalin) and water
Carosafe	Nebanol

Where possible, avoid using formaldehyde, methanol, and ethanol for the preservation and storage of specimens. Formaldehyde is a suspected human carcinogen. The OSHA Permissible Exposure Limit (PEL) for this chemical is 0.75 ppm (TWA); 2 ppm (STEL). Depending on the individual, the odor threshold for formaldehyde approaches 60 ppm. Thus, over-exposures occur before the chemical can be detected by smell. All work with formaldehyde preservatives should be done in a chemical fume hood or while wearing a self-contained breathing apparatus or air-line respirator.

Methanol and ethanol are flammable liquids. Specimens in flammable preservatives must be stored in flammable liquids storage cabinets or in engineered flammable liquid storage rooms. This is required when quantities exceed 1 gallon. See the ***NAS SOP, STORAGE AND USE OF FLAMMABLE CHEMICALS.***

Specimen containers must be labeled the same as any other chemical container. See the ***NAS SOP, CHEMICAL CONTAINER LABELING.*** The storage solution, not the initial preserving solution, is what must be recorded on the label.

However, due to the toxicity and volatility of formaldehyde, this chemical must always be listed on the label when it is used. If the preserving solution is not known, it must be assumed to be formaldehyde, methanol and water since this is the most hazardous solution used.

Generally, specimens are incinerated, collected by Stericycle, our managed contractor. **Specimens must not be disposed as ordinary garbage.** Disposal of preserving and storage solutions may be subject to hazardous waste regulations, and are therefore managed by Lab Supervisors for collection by Stericycle.(800-633-9278) Proper disposal of the specimens and preservatives varies depending on the type of specimen and preservative.