

INTENDED USE

After proper dilution, Z-5 may be used as a histological fixative.

PRODUCT SUMMARY

Diluted Z-5 is designed to produce the desirable features of B-5, Bouin's fluid and other fixatives containing mercuric salts or picric acid. However, Z-5 replaces the hazardous mercuric salts or hazardous picric acid with a zinc salt. The active ingredients in Z-5 are zinc salts and formaldehyde.

Formaldehyde fixation is a two-step process. First, formaldehyde forms addition products with macromolecules. Second, the formaldehyde adduct crosslinks the macromolecules, firming the tissue. While necessary for complete fixation, the crosslinks (methylene bridges) can block access to antigenic epitopes. With diluted Z-5, both the zinc and formalin initially attach to tissue sites. Additional zinc ions then form large coordination complexes that prevent the formaldehyde from further crosslinking by simply getting in the way. The zinc constituent of diluted Z-5 gives cellular components enough rigidity without undesirable hardening.

The alcohol component of diluted Z-5 increases the penetration rate of the fixative and starts the dehydration process without excessive drying.

Diluted Z-5 prevents the formalin artifact described as nuclear bubbling, in which chromatin patterns are disrupted due to inadequate exposure to formalin. Enhanced H&E staining due to the mordant effect of the zinc is another diluted Z-5 benefit. With fewer methylene bridges, diluted Z-5 reduces or eliminates the need for antigen recovery procedures in immunohistochemistry.

INGREDIENTS

Formaldehyde, ionized zinc, buffer, indicator, methanol (inherent to formaldehyde)

WARNING

DANGER. CONTAINS FORMALDEHYDE. May cause cancer. Toxic if swallowed, in contact with skin or if inhaled. Causes serious eye damage. May cause sensitization by inhalation or by skin contact. Causes skin, eye, and respiratory irritation. Do not breathe vapors. Do not get on skin.

Methanol Warning:

DANGER. POISON. VAPOR HARMFUL. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. CANNOT BE MADE NONPOISONOUS.

For In Vitro Diagnostic Use.

STORAGE

Store at room temperature. Avoid freezing; product is not harmed but container may break. Keep containers tightly closed when not in use.

Properly diluted product is flammable; store at room temperature in a flammable cabinet.

DIRECTIONS FOR USE

1. Dilute Z-5 with anhydrous ethyl or reagent alcohol before use. **DO NOT USE WATER.**
 - a. Mix:
Z-5 350 ml
100% alcohol 650 ml
 - b. The pink color of the concentrate will disappear after the addition of alcohol.
 - c. Diluted Z-5 has an expiration date of one year from dilution date.
2. Fix fresh tissue in Z-5 for a minimum of 2-4 hours (needle biopsies) or 4-6 hours (small surgical tissues). Use these times as starting guidelines. Shorter times may be possible. For long term storage of tissues, use ANATECH's Z-Fix or Prefer.
3. Diluted Z-5 may be used as the secondary fixative in conjunction with NBF. However, exposure to NBF can cause the precipitation of zinc phosphate.
 - a. A brief water rinse between fixatives will reduce the likelihood of precipitation.
 - b. Inadequate rinsing may cause precipitation in the processing chamber and in the first dehydrant; remove by purging with a mild acid solution (5% acetic acid in water), followed by a water rinse.
 - c. The benefits of diluted Z-5 will diminish as time in NBF increases.

DISPOSAL

1. Use a licensed waste hauler.
2. Discard into the sanitary sewer system with approval of local wastewater officials.
3. Disposal may be easier if zinc is removed from the solution.
 - a. Raise the pH to 7.0 – 8.0 with a mild alkaline solution (25 g monobasic sodium phosphate, monohydrate in 500 ml warm deionized/distilled water is recommended).
 - b. Wait several hours and then filter the solution.
 - c. Dispose of the filtered precipitate as you would any inorganic solid of low toxicity.

SAFETY DATA SHEETS (SDS)

SDS are available online at www.anatechltusa.com.

ORDERING INFORMATION FOR Z-5

<u>Cat#</u>	<u>Packaging</u>
182	1 quart