

Product Information

DL-Glyceraldehyde 3-phosphate diethyl acetal barium salt

Product Number **G5376**

Storage Temperature -0°C

Product Description

This product is the stable diethyl acetal derivative of DL-glyceraldehyde-3-phosphate. It may be used to prepare DL-glyceraldehyde-3-phosphate in solution.

The molecular weight of anhydrous DL-glyceraldehyde-3-phosphate diethyl acetal, monobarium salt is 380 Da. The molecular weight of DL-glyceraldehyde-3-phosphate is 170 Da.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Procedure

This procedure describes the preparation of a solution of DL-glyceraldehyde-3-phosphate from this product. A package of specially washed Dowex[®] 50 x 4-200R resin is included with this product for preparing the solution.

1. Suspend 1.5 g (wet weight) of Dowex-50 Hydrogen Form (Product Code 50X4200R) in 6.0 ml of water in a Pyrex[®] test tube.
2. Add 100 mg of DL-glyceraldehyde-3-phosphate, diethyl acetal, monobarium salt to the test tube.
3. Place the test tube into a boiling water bath for 3 minutes and shake intermittently.
4. Quickly chill the solution by transferring the test tube to an ice bath.
5. Centrifuge, decant the solution, and save the supernatant.
6. Resuspend the resin in approximately 2 ml of water, centrifuge again, and decant. Combine the supernatants from steps 5 and 6.
7. Repeat the resin washing (step 6) several times with water for complete extraction of the free DL-glyceraldehyde-3-phosphate into the supernatant fluid.

If hydrolysis and washing are substantially complete, the combined supernatants will contain ~200 μmoles of DL-glyceraldehyde-3-phosphate (100 μmoles of the enzymatically active D-isomer). The pH of the solution will be approximately 2.4. Based upon enzymatic assay, this solution appears to be stable at 25°C for at least 4 days. Freezing is recommended for prolonged storage.

If the solution is adjusted to pH 6, a decomposition rate of approximately 2% per hour can be expected at 25°C . Freezing will reduce this decomposition for at least 4 days and allow storage for extended periods of time.

The exact concentration in solution can be determined by the following methods:

1. Enzymatic assay using glyceraldehyde-3-phosphate dehydrogenase.
2. By measuring the amount of inorganic phosphate liberated by a 10 minute hydrolysis in 1 N sodium hydroxide at room temperature. Inorganic phosphate is liberated from both the D- and L-isomers by the alkali treatment.

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