3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Formaldehyde solution

P roduct N umber **F1635**
Store at Room Temperature

Product Description
Molecular Formula: CH_2O
Molecular Weight: 30.03
CAS Number: 50-00-0
Boiling Point: 96 ºC[1]
Specific Gravity: 1.081-1.085 at 25 ºC[1]
Refractive Index: 1.3746 at 20 ºC[1]
pH: 2.8-4.0[1]
Molarity: 13.3 M

This product is a solution of approximately 37% by weight of formaldehyde gas in water with 10-15% methanol as a stabilizer to prevent polymerization.

On standing, especially in the cold, this solution may become cloudy, and on exposure to very low temperatures, a precipitate of trioxymethylene is formed. In the air, it slowly oxidizes to formic acid. When evaporated, some formaldehyde escapes, but most of it is changed to trioxymethylene.[1]

Relative humidity of the envronment is critical for the optimal bactericidal activity of formaldehyde.[2]

To raise the pH of the formaldehyde solution above pH 4, treat it with a small amount of mixed bed resin. Do not simply try to raise the pH with base such as NaOH. The pH of the formaldehyde solution is raised to above pH 4, since there is no breakdown of RNA above pH 4 compared to a solution at or below 4.

There are several recipes for fixatives. In general a 10-fold dilution is made for fixation of cells.[3]

Schiff's Reagent (Product No. S 5133) can be used to detect trace formaldehyde in wash water: Mix 1 ml water or test solution plus 0.2 ml reagent, flush with nitrogen and seal. A purple color develops at a rate roughly related to the concentration of formaldehyde, and the detection level is at 3-5 ppm. Color develops in about 3 minutes if 5 ppm, about 5 minutes if at 3 ppm. No reaction if less than 3 ppm formaldehyde.

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is soluble in water.

Storage/Stability
Dilute solutions are stable at 2 °C for 1 week.[4]

References
1. The Merck Index, 12th ed., Entry# 4262.
2. Disinfection, Sterilizationand Preservation, 4th ed., Block, S.S., ed., Lea & Febiger (Philadelphia, PA: 1991), pp. 582-583.
3. Staining Procedures, 4th ed., Clark, G., ed., Williams and Wilkins (Baltimore, MD: 1981), pp. 13-14.
4. Dawson, R.M.C., et al., Data for Biochemical Research, 3rd ed., p. 39., Oxford University Press, New York, (1986).

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