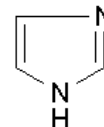


56749 / 56745 / 56748 Imidazole (Glyoxaline, 1,3-Diaza-2,4-cyclopentadiene)

CAS number: 288-32-4

Product Description:

Molecular Formula: $C_3H_4N_2$
 Molecular Weight: 68.08 g/mol
 pH: 9.5-11.0 (25°C, 0.1 M in H_2O)⁷
 pK_a: 7.1
 Melting Point: 90-91 °C²



56748 BioChemika Ultra for molecular biology
 56745 BioChemika Ultra for luminescence
 56749 BioChemika Ultra

BioChemika Ultra qualities are highly purified biochemicals for suitable for life science applications and other applications which require a tight control of elemental content. The molecular biology grade has specially been tested for the absence of DNase, RNase, and protease. For spectroscopic work the luminescence grade is available.

Applications:

Imidazole can be used to prepare buffers in the pH range of 6.2-7.8 at 25°C. It is e.g. recommended as a component of a buffer for assay of horseradish peroxidase.⁸ It is also a chelator for the binding of various divalent cations. The logs of the binding constants for various divalent cations are below:

| <i>Divalent Cation</i> | <i>Log binding constant</i> |
|------------------------|-----------------------------|
| Ca ²⁺ | 0.1 |
| Mn ²⁺ | 1.6 |
| Fe ²⁺ | 3.3 |
| Co ²⁺ | 2.4 |
| Ni ²⁺ | 2.9 |
| Cu ²⁺ | 4.2 |
| Zn ²⁺ | 2.0 |

These values compare to an EDTA affinity constant log of 10.6 for Ca²⁺.³

Imidazole can be used for the elution of histidine containing proteins from divalent cation resins (Sigma P6611, His-Select.-HC Nickel affinity gel) and can also be used in reverse staining of SDS-PAGE gels for detection of proteins.⁴

Preparation Instructions

Imidazole is soluble in water (approximately 500 mg/ml), yielding a clear solution.

Storage/Stability

Solutions can be successfully sterilized by autoclaving, and are stable for at least 2 years at 2-8 °C, protected from light.

Precautions and Disclaimer:

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

References:

1. Data for Biochemical Research, 3rd ed., Dawson,
2. R. M. C., et al., Oxford University Press (New York, NY: 1986), p. 324-325.
3. The Merck Index, 13th ed., Entry# 4935.
4. Data for Biochemical Research, 3rd ed., Dawson,
5. R. M. C., et al., Oxford University Press (New York, NY: 1986), p. 433, 409, 404-405.
6. Fernandez-Patron, C., et al., Reverse staining of sodium dodecyl sulfate polyacrylamide gels by imidazole-zinc salts: sensitive detection of unmodified proteins. *Biotechniques*, 12(4), 564-573 (1992)
7. Fluka quality control
8. B. Storrie, E.A. Madden, Buffer for assay of horseradish peroxidase *Meth. Enzymol.* 182, 217 (1990)
9. R. Breslow, Review: As RNase model *Accts. Chem. Res.* 24, 317 (1991)

HIS-Select is licensed under U.S. Patent No. 4,569,794.