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Product Information

Barium chloride dihydrate

Product Number **B0750**
Store at Room Temperature

Product Description

Molecular Formula: $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$
Molecular Weight: 244.3
CAS Number: 10326-27-9
Melting Point: 963 °C¹

Barium chloride is an inorganic reagent that is used in the manufacture of pigments and glass, and as a mordant for acid dyes. It is also utilized in the weighting and dyeing of textile fabrics, in boiler compounds for softening water, and in the tanning and finishing of leather.¹

BaCl_2 has been frequently used in ion channel studies in such systems as *Xenopus*, mouse myocytes, bovine adrenal glomerulosa cells, and *Arabidopsis thaliana*.^{2,3,4,5} In a fermentation study of pertussis toxin production from *Bordetella pertussis*, BaCl_2 has been shown to enhance the yield of pertussis toxin.⁶ The isolation of ostrich prothrombin from plasma using BaCl_2 has been described.⁷

Several reports have described the synthesis of various barium oxalate compounds.^{8,9}

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (100 mg/ml), with heat as needed, yielding a clear, colorless solution.

References

1. The Merck Index, 12th ed., Entry# 998.
2. Levin, M., et al., Asymmetries in H^+/K^+ -ATPase and cell membrane potentials comprise a very early step in left-right patterning. *Cell*, **111(1)**, 77-89 (2002).
3. Clark, R. B., et al., T-tubule localization of the inward-rectifier K^+ channel in mouse ventricular myocytes: a role in K^+ accumulation. *J. Physiol.*, **537(Pt 3)**, 979-992 (2001).
4. Barrett, P. Q., et al., Stimulation of unitary T-type Ca^{2+} channel currents by calmodulin-dependent protein kinase II. *Am. J. Physiol. Cell. Physiol.*, **279(6)**, C1694-1703 (2000).
5. Ghelis, T., et al., Abscissic acid specific expression of RAB18 involves activation of anion channels in *Arabidopsis thaliana* suspension cells. *FEBS Lett.*, **474(1)**, 43-47 (2000).
6. Bogdan, J. A., et al., *Bordetella pertussis* autoregulates pertussis toxin production through the metabolism of cysteine. *Infect. Immun.*, **69(11)**, 6823-6830 (2001).
7. Frost, C., et al., Purification and characterization of ostrich prothrombin. *Int. J. Biochem. Cell Biol.*, **32(11-12)**, 1151-1159 (2000).
8. Price, D. J., et al., Hydrothermal synthesis, X-ray structure and complex magnetic behaviour of $\text{Ba}_4(\text{C}_2\text{O}_4)_2\text{Cl}_2[\text{Fe}(\text{C}_2\text{O}_4)(\text{OH})_4]$. *Chemistry*, **7(1)**, 200-208 (2001).
9. Christensen, A. N., et al., Synthesis and characterization of the barium oxalates $\text{BaC}_2\text{O}_4 \cdot 0.5\text{H}_2\text{O}$, $\alpha\text{-BaC}_2\text{O}_4$ and $\beta\text{-BaC}_2\text{O}_4$. *Acta Crystallogr. B*, **58(Pt 5)**, 808-814 (2002).

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