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ProductInformation

Cadmium chloride hemi(pentahydrate)

Product Number **C 3141**
Store at Room Temperature

Product Description

Molecular Formula: $CdCl_2 \cdot 2.5\ H_2O$
Molecular Weight: 228.4
CAS Number: 7790-78-5
Synonyms: Caddy, Vi-Cad[1]

Cadmium chloride is a heavy-metal salt that is used in such applications as photography, dyeing, the manufacture of cadmium yellow, and galvanoplasty. This compound is hygroscopic and forms rhombohedral crystals.[1]

Cadmium chloride is harmful to the kidney and damages the proximal tubular epithelium.[2,3] A study on the genotoxicity of cadmium chloride on human lymphocytes has been reported.[4] Cadmium chloride has been shown to inhibit repair of DNA damage in CHO cells as induced by UV-radiation, methyl methanesulfonate, and N-methyl-N-nitrosourea.[5] Cadmium chloride has been used to investigate cadmium-binding hexapeptides that convey additional viability to *Escherichia coli* (strain TG1) when these hexapeptides are expressed on the cell surface, as fused to the outer membrane protein OmpA.[6]

Cadmium chloride has also been utilized in protein crystallization (Product No. 70437), such as in studies on acetolactate decarboxylase which use 10 mM cadmium chloride in the crystallization solution.[7]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (133 mg/ml), yielding a clear, colorless solution. The use of cadmium chloride in Tris buffers can lead to precipitation of the Tris-cadmium complex at pH ≥ 7.

References

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3. Zalups, R. K., and Barfuss, D. W., Simultaneous coexposure to inorganic mercury and cadmium: a study of the renal and hepatic disposition of mercury and cadmium. J. Toxicol. Environ. Health A., **65(19)**, 1471-1490 (2002).
4. Rozgaj, R., et al., Genotoxicity of cadmium chloride in human lymphocytes evaluated by the comet assay and cytogenetic tests. J. Trace Elem. Med. Biol., **16(3)**, 187-192 (2002).
5. Fatur, T., et al., Cadmium inhibits repair of UV-, methyl methanesulfonate- and N-methyl-N-nitrosourea-induced DNA damage in Chinese hamster ovary cells. Mutat. Res., **529(1-2)**, 109-116 (2003).
6. Mejare, M., et al., Selection of cadmium specific hexapeptides and their expression as OmpA fusion proteins in *Escherichia coli*. Protein Eng., **11(6)**, 489-494 (1998).
7. Najmudin, S., et al., Purification, crystallization and preliminary X-ray crystallographic studies on acetolactate decarboxylase. Acta Crystallogr. D Biol. Crystallogr., **59(Pt 6)**, 1073-1075 (2003).

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