

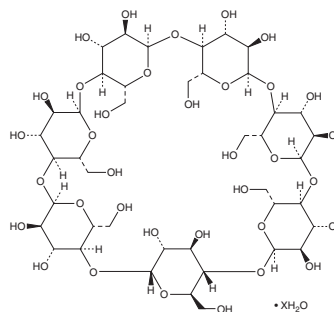
PRODUCT INFORMATION



β-Cyclodextrin (hydrate)

Item No. 23387

CAS Registry No.: 68168-23-0
Formal Name: β-cyclodextrin, hydrate
Synonyms: β-CD, NSC 269471, NSC 314334, Schardinger β-Dextrin
MF: C₄₂H₇₀O₃₅ • XH₂O
FW: 1,135.0
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

β-Cyclodextrin (β-CD) (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the β-CD (hydrate) in the solvent of choice, which should be purged with an inert gas. β-CD (hydrate) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of β-CD (hydrate) in these solvents is approximately 2.5 mg/ml.

β-CD (hydrate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, β-CD (hydrate) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. β-CD (hydrate) has a solubility of approximately 0.03 mg/ml in a 1:30 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

β-CD is a cyclic oligosaccharide that contains seven D-(+)-glucopyranose units and has been used to improve the aqueous solubility of various compounds, especially those containing a phenyl group.^{1,2} The circular arrangement of its glucose units produces a torus-shaped ring configuration in which the CH₂ groups and ether linkages of the molecule face the hollow interior, resulting in a nonpolar, hydrophobic cavity and a polar, hydrophilic exterior. When combined in solution with other compounds, the nonpolar aromatic portions of that compound interact with the nonpolar interior of the β-CD molecule, thus isolating the aromatic portion of the molecule from the water and thereby increasing its aqueous solubility.^{1,3}

References

1. Katageri, A.R. and Sheikh, M.A. Cyclodextrin a gift to pharmaceutical world review. *Int. Res. J. Pharm.* **3(1)**, 52-56 (2012).
2. Williamson, G.B. and Weidenhamer, J.D. Bacterial degradation of juglone: Evidence against allelopathy? *J. Chem. Ecol.* **16(5)**, 1739-1742 (1990).
3. Rao, V.M., Nerurkar, M., Pinnamaneni, S., et al. Co-solubilization of poorly soluble drugs by micellization and complexation. *Int. J. Pharm.* **319(1-2)**, 98-106 (2006).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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