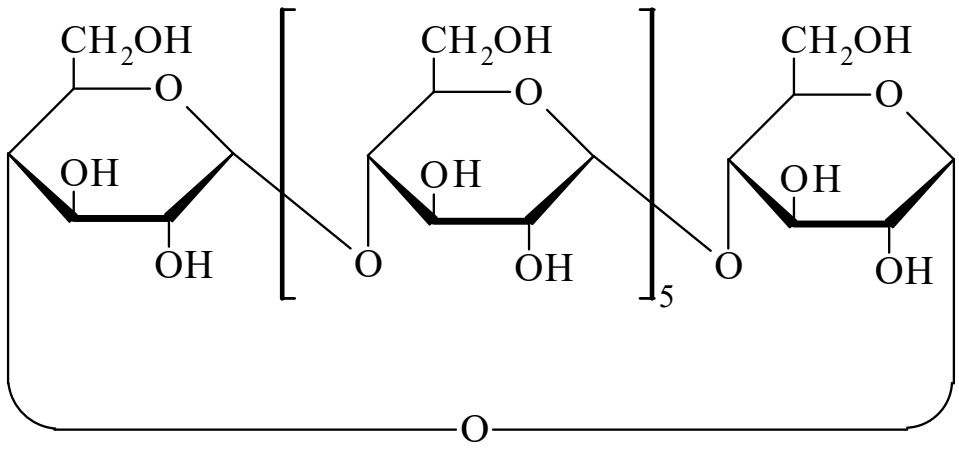
>>**Entry Name:** β-**Cyclodextrin,** 9CI

Synonym(s): Cycloheptakis-(1→4)-(α-D-glucopyranose). Cycloheptaamylose. Cyclomaltoheptaose. **Betadex,** INN, USAN**.** Beta cyclodextrin, USAN. Cycloheptaglucan. Cycloheptamaltose. β-Schardinger dextran



CAS Registry Number: 7585-39-9
Extra CAS Registry Numbers(s): 68168-23-0

Molecular Formula: $C_{42}H_{70}O_{35}$
Molecular Weight: 1134.994
Accurate Mass: 1134.369775
Percentage Composition: C 44.45%; H 6.22%; O 49.34%
Biological Source: Obt. from the breakdown of starch by the action of *Bacillus macerans*
Use/Importance: Forms inclusion complexes which have been used to induce stereoselectivity in reactions. Many complexes studied structurally.
Biological Use/Importance: Pharmaceutical aid (sequestering agent)
Physical Description: Monoclinic cryst. $+H_2O$ (H_2O)
Melting Point: Mp 260 dec.°
Optical Rotation: $[\alpha]_D$ +162.5 (c, 1.0 in H_2O)
Other Data: Forms cryst. complexes with propanol and iodine

Fluka: 28707
Sigma: C4767
Supelco: R33-8050

>>**Derivative:** Heneicosa-Ac

Molecular Formula: $C_{84}H_{112}O_{56}$
Molecular Weight: 2017.775
Accurate Mass: 2016.59164
Percentage Composition: C 50.00%; H 5.59%; O 44.40%
Physical Description: Cryst. (toluene)
Melting Point: Mp 200°
Optical Rotation: $[\alpha]_D$ +122 (c, 1.0 in $CHCl_3$)

>>**Derivative:** 6^A-(4-Methylbenzenesulfonyl)

CAS Registry Number: 67217-55-4
Molecular Formula: $C_{49}H_{76}O_{37}S$
Molecular Weight: 1289.183
Accurate Mass: 1288.378625
Percentage Composition: C 45.65%; H 5.94%; O 45.92%; S 2.49%
Physical Description: Cryst. (H_2O)
Melting Point: Mp 172-174 dec.°

>>**Derivative:** 2,2',2",2‴,2⁗,2⁗⁗,2⁗⁗⁗,6,6',6",6‴,6⁗,6⁗⁗,6⁗⁗⁗-Tetradeca-*O*-Me
Synonym(s): Heptakis(2,6-dimethyl)cyclomaltoheptaose. Dimethyl-β-cyclodextrin. DIMEB

CAS Registry Number: 51166-71-3

Molecular Formula: $C_{56}H_{98}O_{35}$
Molecular Weight: 1331.369
Accurate Mass: 1330.588875
Percentage Composition: C 50.52%; H 7.42%; O 42.06%
Melting Point: Mp 312°