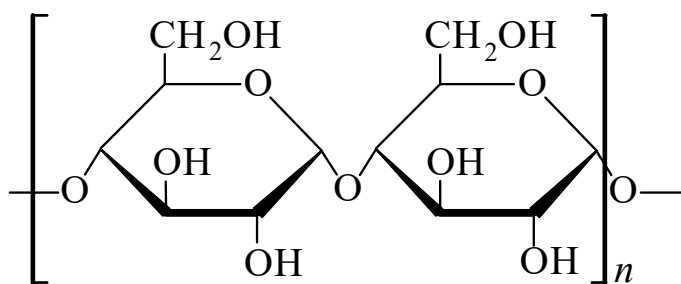




>>Entry Name: Starch, 9CI, 8CI

ENTRY UNDER REVIEW

Synonym(s): Amylum. Polyamylose



CAS Registry Number: 9005-25-8

Related CAS Registry Numbers(s): 9063-38-1 11116-64-6 56780-58-6

linked. Amylopectin is a branched polymer composed largely of α -D-(1 $\rightarrow$ 4)-linked glucose units. The branch is α -(1 $\rightarrow$ 6) and occurs at the 6 position every 20-25 glucose units. Pullulanase, *R*-enzyme and Isoamylase hydrol. the α -D-(1 $\rightarrow$ 6) linkages. Polymeric. Minimum formula given

Use/Importance: Graft polymers with acrylates are used as water-absorbent resins

Hazard & Toxicity: Starch dust is a respiratory tract irritant OES (8-hr TWA) total inhalable dust 10 mg m⁻³, respirable dust 5 mg m⁻³. Mod. explosive when exposed to flame

>>Derivative: Phosphate

CAS Registry Number: 11120-02-8

Extra CAS Registry Numbers(s): 39373-98-3

Use/Importance: Industrial material with various uses depending on level of phosphorylation

Other Data: Many different structs. are present at different phosphorylation levels

>>Derivative: Carboxymethyl ether

CAS Registry Number: 9057-06-1

Use/Importance: Modified starch used as thickening agent in food industry and pharmaceuticals

Physical Description: Powder

>>Derivative: 2-Hydroxyethyl ether

Synonym(s): Pentastarch

CAS Registry Number: 9005-27-0

Use/Importance: Modified starch used as sizing agent in textile industry and in artificial blood

>>Derivative: 2-Hydroxypropyl ether

CAS Registry Number: 9049-76-7

Use/Importance: Modified starch used as sizing agent and adhesive

>>Variant: Unbranched-form

Synonym(s): Amylose

CAS Registry Number: 9005-82-7

Molecular Formula: C₆H₁₂O₅

Biological Source: Stored in all parts of plants as insol. granules. Coml. starches come mainly from corn (maize), sorghum grains, tapioca root and potato tuber. Most starch samples contain 20 $\pm$ 5% Amylose which can be pptd. from aq. starch soln. with, e.g., Thymol

Use/Importance: Used in particulate form as a dusting powder, as a gelling agent in processed foods, as a flocculant and pigment retainer in paper manuf. and in dried film form for sizing paper and textiles. Pharmaceutical aid and excipient (binder, diluent and disintegrant). Used in photometric detn. of I₂; as an indicator in iodometry

Optical Rotation: [α]_D +200 (H₂O). [α]_D +162 (1M NaOH). [α]_D +175 (DMSO)

Other Data: Hydrol. by acid, α -Amylase and β -Amylase. Forms inclusion complexes, gives a deep-blue colour with I₂. Four polymorphs (A,B,C and V amyloses) have been studied structurally and differ in helical conformation and packing

Aldrich: 85965-6

Fluka: 10130

Rare Chemicals Library: S46172-5

Sigma: A0512