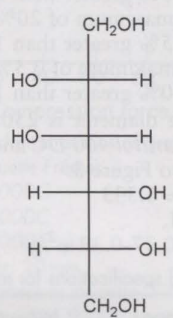


**4 Empirical Formula** **Molecular Weight**  
C<sub>6</sub>H<sub>14</sub>O<sub>6</sub> 182.17

**5 Structural Formula**



**6 Functional Category**

Sweetening agent; tablet and capsule diluent; tonicity agent; vehicle (bulking agent) for lyophilized preparations.

**7 Applications in Pharmaceutical Formulation or Technology**

Mannitol is widely used in pharmaceutical formulations and food products. In pharmaceutical preparations it is primarily used as a diluent (10–90% w/w) in tablet formulations, where it is of particular value since it is not hygroscopic and may thus be used with moisture-sensitive active ingredients.<sup>(1)</sup>

Mannitol may be used in direct-compression tablet applications,<sup>(2-6)</sup> for which the granular and spray-dried forms are available, or in wet granulations.<sup>(7)</sup> Granulations containing mannitol have the advantage of being dried easily. Specific tablet applications include antacid preparations, glyceryl trinitrate tablets, and vitamin preparations. Mannitol is commonly used as an excipient in the manufacture of chewable tablet formulations because of its negative heat of solution, sweetness, and 'mouth feel'.<sup>(8,9)</sup>

In lyophilized preparations, mannitol (20–90% w/w) has been included as a carrier to produce a stiff, homogene

**8 Description**

Mannitol is D-mannitol. It is a hexahydric alcohol related to mannose and is isomeric with sorbitol.

Mannitol occurs as a white, odorless, crystalline powder consisting of free-flowing granules. It has a sweet taste, approximately as sweet as glucose and half as sweet as sucrose, and imparts a cooling sensation in the mouth. Microscopically, it appears as orthorhombic needles when crystallized from alcohol. Mannitol shows polymorphism.<sup>(20)</sup>

**9 Pharmacopeial Specifications**

See Table I.

SEM: 1

Excipient: Mannitol  
Manufacturer: Merck  
Magnification: 50 ×  
Voltage: 3.5 kV

