



**Figure 4: Chemical structure of tadalafil**

Melting point for tadalafil is:

– (6R,12aR)-(-)-Tadalafil (1); 302–303 °C

– (6S,12aR)-(-)-Tadalafil (8); 286–288 °C (6-epi-tadalafil)

– (6R,12aS)-(-)-Tadalafil (11); 295–296 °C (12a-epi-tadalafil)

Tadalafil Practically insoluble in water; very slightly soluble in ethanol. And it is a white crystalline powder. The Peak plasma concentration 378 ng/mL occurs 2 h postdose. Apparent volume of distribution (Vd/F) 62.6 L. Where apparent oral clearance is 2.48 L/h. And The mean elimination half-life 17.5 h.

Main physical characteristics of tadalafil are :

- Dissociation Constants:  $pK_a = 0.85$ .
- Octanol/Water Partition Coefficient :  $\log K_{ow} = 1.42$  .
- Solubilities : In water, 220 mg/L at 25 deg C .
- Vapor Pressure :  $2.2 \times 10^{-14}$  mm Hg at 25 deg C .
- Henry's Law constant =  $5.0 \times 10^{-18}$  atm-cu m/mol at 25 deg C .