

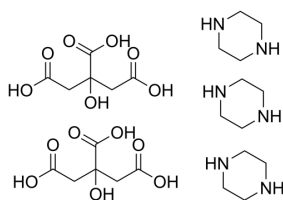
## Piperazine (citrate)

Cat. No.: HY-17599  
 CAS No.: 144-29-6  
 Batch No.: 146596  
 Chemical Name: Piperazine, 2-hydroxy-1,2,3-propanetricarboxylate (3:2)

### PHYSICAL AND CHEMICAL PROPERTIES

Molecular Formula:  $C_6H_8O_7 \cdot 3/2 C_4H_{10}N_2$   
 Molecular Weight: 321.33  
 Storage: 4°C, sealed storage, away from moisture  
 \* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

#### Chemical Structure:



### ANALYTICAL DATA

Appearance: White to off-white (Solid)  
 $^1H$  NMR Spectrum: Consistent with structure  
 Purity (NMR):  $\geq 98.0\%$   
 Conclusion: The product has been tested and complies with the given specifications.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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