

**Ephedrine Hydrochloride CAS No. : 50-98-6**

Ephedrine (EPH) is a sympathomimetic amine commonly used as a stimulant, appetite suppressant, concentration aid, decongestant, and to treat hypotension associated with anaesthesia. Ephedrine is similar in structure to the synthetic derivatives amphetamine and methamphetamine. Chemically, it is an alkaloid derived from various plants in the genus Ephedra (family Ephedraceae). It is most usually marketed in the hydrochloride and sulfate forms.

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# Taj Pharmaceuticals Ltd.

## Ephedrine Hydrochloride USP

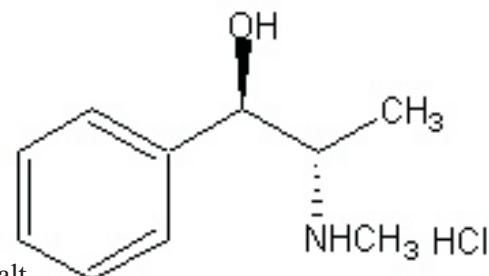
### CAS No. : 50-98-6



Molecular Formula : C<sub>10</sub>H<sub>15</sub>NO · HCl  
Molecular Weight : 201.69  
CAS No. : [50-98-6]

**Chemical Name :**

1. Benzenemethanol, oe-[1-(methylamino)ethyl]-, hydrochloride [R-(R\*,S\*)], salt
2. (1R,2S)-2-Methylamino-1-phenyl propan-1-ol Hydrochloride

**I-Ephedrine HCl****Specifications :**

1. Description : Colourless crystals or white crystalline powder
2. Identification : a) Infrared spectrum of sample is concordant with the reference spectrum.  
b) A solution of sample respond to the test for chloride.
3. Solubility : Freely soluble in water and soluble in alcohol.
4. Melting range : Between 217° and 220°C; the range between beginning and end of melting does not exceed 2°C
5. Specific rotation : Between - 33.0° and - 35.5° ( 5 % solution in water )
6. Acidity & alkalinity :NMT 0.10 ml of 0.02 N H<sub>2</sub>SO<sub>4</sub> or NMT 0.20 ml of 0.02 N NaOH solution
7. Sulfate : Must pass the test. No turbidity develops within 10 min.
8. Ordinary impurities :NMT 2.0 %
9. Residue on ignition :NMT 0.1 %
10. Loss on drying :NMT 0.5 %
11. Organic volatile impurities : Must pass the test
12. Assay : Between 98.0 % and 100.5 % ( dried basis )

Therapeutic indications: Bronchodilator

Packing : Packed in double lined polyethylene bags in 25 kg fiber drums.

Storage : Store below 35°C.

**Ephedrine (EPH) is a sympathomimetic amine** commonly used as a stimulant, appetite suppressant, concentration aid, decongestant, and to treat hypotension associated with anaesthesia. Ephedrine is similar in structure to the synthetic derivatives amphetamine and methamphetamine. Chemically, it is an alkaloid derived from various plants in the genus Ephedra (family Ephedraceae). It is most usually marketed in the hydrochloride and sulfate forms.

**Chemistry**

Ephedrine exhibits optical isomerism and has two chiral centres. By convention the enantiomers with opposite stereochemistry around the chiral centres are designated ephedrine, while pseudoephedrine has same stereochemistry around the chiral carbons. That is, (1R,2R)- and (1S,2S)-enantiomers are designated pseudoephedrine; while (1R,2S)- and (1S,2R)-enantiomers are designated ephedrine.

**The isomer which is marketed is (-)-(1R,2S)-ephedrine.**

As with other phenylethylamines, it is also somewhat chemically similar to methamphetamine, although the amphetamines are more potent and have additional biological effects.



TAJ PHARMACEUTICALS LIMITED

## Ephedrine

Formula C<sub>10</sub>H<sub>15</sub>NO

Cas No. **50-98-6**



These terms are used to refer to the same substance derived from the plant Ephedra. (There are many common names for these evergreen plants, including squaw tea and Mormon tea.) Ephedra is a shrub-like plant that is found in desert regions in central Asia and other parts of the world. The dried greens of the plant are used medicinally. Ephedra is a stimulant containing the herbal form of ephedrine, an FDA-regulated drug found in over-the-counter asthma medications.

In the United States, ephedra and ephedrine are sold in health food stores under a variety of brand names. Ephedrine is widely used for weight loss, as an energy booster, and to enhance athletic performance. These products often contain other stimulants, such as caffeine, which may have synergistic effects and increase the potential for adverse effects. Ephedra is often touted as the "herbal fen-phen."

Ephedra's main active medical ingredients are the alkaloids ephedrine and pseudoephedrine. The ephedras also contain various tannins and related chemicals. The stem contains 1-3% total alkaloids, with ephedrine accounting for 30-90% of this total. The concentrations of these alkaloids depends upon the particular species of ephedra used.



### Clinical use

Ephedrine Sulphate (1932) Ephedrine Compound (1932) and Swan-Myers Ephedrine Inhalant No. 66 (ca. 1940)

### Indications

In traditional Chinese medicine, ephedrine has been used in the treatment of asthma and bronchitis for centuries.

An ECA stack is a component found in thermogenic weight loss pills, composed of ephedrine, caffeine and aspirin (many supplement manufacturers include salicin instead of aspirin) working to speed up the metabolism and thus cause food energy to burn faster. The ECA stack is a popular supplement taken by body builders before workouts due to the increased amount of energy and alertness.

### Recreational and illicit use

Anecdotal reports have suggested that ephedrine helps studying, thinking, or concentrating to a greater extent than caffeine. Some students and some white-collar workers have used ephedrine (or Ephedra-containing herbal supplements) for this purpose, as well as some professional athletes and weightlifters. It is common for many athletes to use stimulants while exercising. Such use of ephedrine has been associated with stimulant dependence, as well as deaths from heatstroke in athletes and circulatory problems such as aortic aneurysm in weightlifters, though these side effects are rare. As a phenylethylamine, ephedrine has a similar chemical structure to amphetamines. Ephedrine can be used in the synthesis of methamphetamine by chemical reduction; this has made ephedrine a highly sought-after chemical precursor in the illicit manufacture of methamphetamine. The most popular method for reducing ephedrine to methamphetamine is similar to the Birch reduction, in that it uses anhydrous ammonia and lithium metal in the reaction. The second most popular method uses red phosphorus, iodine, and ephedrine in the reaction.





**Note:**

These API/ chemicals are designated as those that are used in the manufacture of the controlled substances and are important to the manufacture of the substances. For any (Control Substance) products Import and Export \*\*\* subjected to your country government laws /control substance ACT.

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The Controlled Substances Act (CSA) was enacted into law by the Congress of the United States as Title II of the Comprehensive Drug Abuse Prevention and Control Act of 1970.[1] The CSA is the federal U.S. drug policy under which the manufacture, importation, possession, use and distribution of certain substances is regulated. The Act also served as the national implementing legislation for the Single Convention on Narcotic Drugs.

This document plus the full buyer/ prescribing information, prepared for health professionals can be found at:

<http://www.tajapi.com>

or by contacting the sponsor, Taj Pharmaceuticals Limited., at:  
91 022 30601000.

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Taj Pharmaceuticals Limited,  
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