

# BENZOIN

## Synonyms

Gum Benjamin; Benzoinum; Benzoin; Luban (Hindi).

## Biological Source

- **Sumatra Benzoin** is obtained from the incised stem of *Styrax benzoin* belonging to family Styraceae. It contains lesser than 25% of total balsamic acids, calculated as cinnamic acid.
- **Siam Benzoin** is a balsamic resin derived from stem of *Styrax tonkinensis* belonging to family Styraceae. It contains more than 25% of total balsamic acids, calculated as cinnamic acid.

## Description

### Sumatra Benzoin

Colour - It is greyish-brown or grey. ✓

Odour - Aromatic and characteristic. ✓

Taste - Sweetish and slightly acid. ✓

It occurs in the form of lumps of varying sizes or tears. Tears are externally yellowish, milky white. The surface is uneven. When heated, fumes of benzoic and cinnamic acids are produced.

### Siam Benzoin

Colour - Yellowish-brown to rusty-brown.

Odour - Agreeable and vanilla-like.

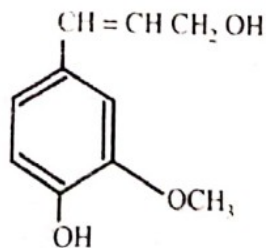
Taste - It is sweetish and slightly acid.

It occurs as hard and brittle masses. When heated, it is softened and becomes plastic.

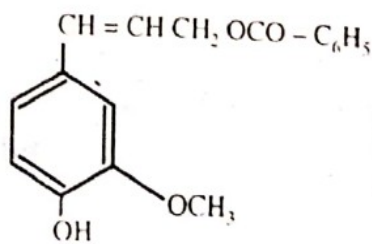
## Standards

1. Benzoic acid content - Not less than 60% (Sumatra)  
Not less than 12% (Siam)
2. Alcohol soluble matter - Not less than 76% (Sumatra)  
Not less than 90% (Siam)
3. Loss on drying - Not more than 10%
4. Acid insoluble ash - Not more than 10%

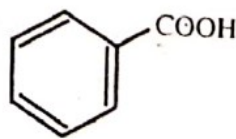
## Chemical Constituents



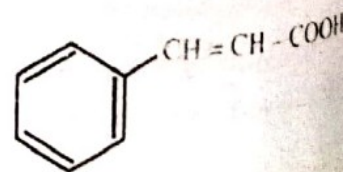
Coniferyl alcohol



Coniferyl benzoate



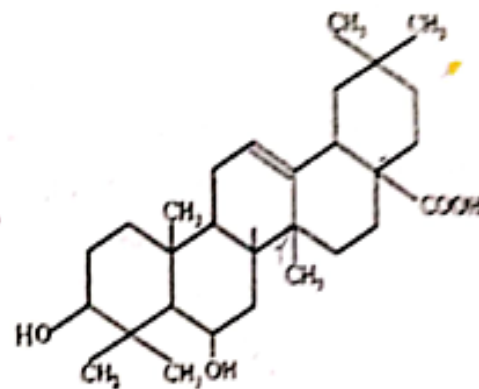
Benzoic acid



Cinnamic acid

Sumatra benzoin contains free balsamic acids (benzoic and cinnamic acids) and esters derived from them. Triterpenoid acids such as summaresinolic and siaresinolic acids are also present. The major constituent of Siam benzoin is an ester coniferyl benzoate (about 76%). The drug also contains styrol, vanillin and phenyl propyl cinnamate.

Siam benzoin differs from Sumatra variety in that it contains insufficient cinnamic acid to give an odour of benzaldehyde, when warmed with potassium permanganate solution.



Summaresinolic acid

### Identification

1. Alcoholic solution of benzoin with water gives milky white solution.
2. Heat small quantity of benzoin in a test tube covering opening of test tube with a glass plate. Cool the contents of the test tube. Examine the glass plate under microscope. The crystals of cinnamic acid shall be observed.
3. To 2.5 g benzoin, add 10 ml ether, shake it well and pour 2 to 3 ml of this extract in a porcelain dish, add 2 to 3 drops sulphuric acid. A deep brown colour is produced in case of Sumatra benzoin and a deep purplish red colour is obtained in case of Siam benzoin.
4. Add 4 ml solution of potassium permanganate to 1g benzoin and warm. Odour of benzaldehyde is produced in case of Sumatra benzoin.

### Uses

Benzoin is an <sup>①</sup>irritating expectorant, a <sup>②</sup>carminative and <sup>③</sup>diuretic. It is also used externally as an antiseptic and a protective. It is used in the form of compound tincture of benzoin, and as an inhalation, specifically in the treatment of upper respiratory tract infection. It is preferred to retard the rancidity of fats and oil in the preparation of benzoated lard. Industrially, it is used to fix the odour of incense, soaps, perfumes and several other cosmetics and to mask the taste of pharmaceutical preparations.