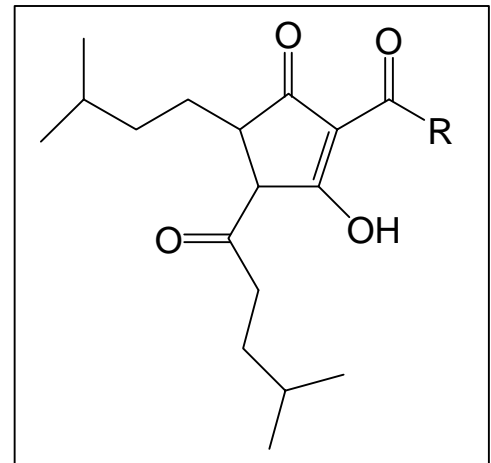


Tetra-Iso-Extract (Tetra)

❖ Overview

- **Tetra** is a pure aqueous solution of the potassium salts of Tetrahydroiso- α -acids produced entirely from CO₂ hop extract.
- **Tetra** is one of the most antibacterial hop acids produced from alpha acids. As little as 40 ppm of Tetra can inhibit the growth of gram positive bacteria in laboratory testing.
- **Tetra** is produced according to 21 CFR 172.560. Tetra is food grade, kosher and not an antibiotic.

Molecular Structure of Tetrahydro-isoalpha acids



R= isopropyl, isobutyl, secbutyl

❖ Specification

- **Description:** An amber colored, aqueous solution of the potassium salts of Tetrahydroiso- α -acids.
- **Concentration:** 9.0 \pm 0.5% (w/w) of Tetrahydroiso- α -acids by HPLC
- **pH:** 9.5 (\pm 1.0)
- **Density:** 1.017 (\pm 0.005) g/ml
- **Solubility:** Soluble in demineralized water.

❖ Packaging

Tetra is regularly available in 20-kg pails (HDPE) or 200-kg drums (PP). Other package sizes (including totes) are available on request.

❑ Storage stability:

Tetra has good storage stability. When stored in sealed containers at room temperatures **Tetra** will maintain its integrity for at least 24 months. Ambient storage temperatures between 10-15°C (50-60°F) are ideal.

❑ Safety:

Tetra should be handled with due care, especially to prevent contact with the eyes. Any contamination of the skin should be washed off with soap and water. If **Tetra** gets into the eyes, irrigate with excess water until clear and seek immediate medical attention.

For full safety information please see the relevant Steiner material safety data sheet.

❑ Quality:

All Hopsteiner® products are produced in plants accredited to internationally accepted quality standards. **Tetra** is Food Grade, Kosher and is not an antibiotic.

Analytical methods

❑ Concentration of Tetra-hydroiso- α -acids in Product:

The concentration of Tetrahydroiso- α -acids can be determined by UV Spectrophotometric

analysis or by HPLC using the current ICS standard according to the modified EBC 7.8

method. The recommended procedures can be obtained from Steiner.

❖ Technical Support

We will be pleased to offer help and advice on the full range of Hopsteiner® products:

- ❑ Copies of all relevant analytical procedures
- ❑ Material Safety Data Sheets (MSDS)
- ❑ Assistance with pilot or commercial trials
- ❑ Specialist analytical services

Rev. 8.17.09