

EPA organizations overview

3.27.09

Frank



Global Strategic Connections, LLC
your international procurement company



3D TECHNOLOGY



LIFE SCIENCES



BUSINESS SERVICES

Opportunity

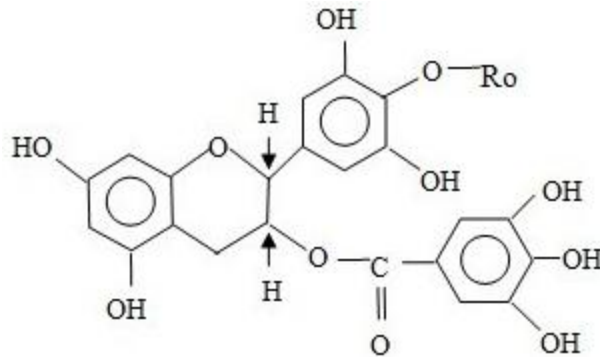
The right time. The right place. The right people.

- **LSTP (Lipid Soluble Tea Polyphenols)**

LSTP is extracted from China green tea leaf through special technology. It is compound of lipid – soluble catechins. Assay of LSTP is more than 95%.



- **Chemical structure**



Ro: Lipid Soluble Base





Specification

Global Strategic Connections, LLC

- **Appearance:** Off-white to pale or light yellow powder
- **Solubility:**
 - LSTP is soluble in oil (tem.:95-105 °C), Ethanol, Ethyle acetate.
- **Assay:** Min. 95%
- **Loss of drying:** Max. 5%
- **Ash:** Max. 2%
- **PH value:** 4-6
- **Arsenic:** Max. 1ppm
- **Lead:** Max. 1 ppm
- **Heavy metals:** Max. 10 ppm
- **Microbiological:**
 - Total plate count: Max. 1000 CFU / gram
 - Yeast & Molds: Max. 100 CFU/gram
 - Ecoli: Not detective
 - Salmonella: Not detective

GSC Confidential

Stability and Storage

- LSTP may be stored for at least 24 months from the MFG. Date in the unopened original container and at a temperature below 25 °C. Keep the container closed, once opened, use it quickly.

Solubility

- LSTP is soluble in oil (tem.:95-105 °C), Ethanol, Ethyle acetate.





The Characteristic of LSTP

Global Strategic Connections, LLC

A. Lipid Soluble Tea Polyphenols(LSTP) has more advantages than Tea Polyphenols on antioxidant

- the solubility in the lipid is 500 times more than the tea polyphenols, the fat-soluble free radical induced lipid peroxidation enhanced the protective effect of 20%; The initial antioxidation rate is slow, concentration enhanced, anti-oxidation rate of decline is slow, which means the antioxidant activity is lasting and stable.

B. Lowering cholesterol and reducing the accumulation of fat

- Once the water-soluble tea polyphenols enter the human body, metabolism is very fast, the body stays a short time, its effect can not be fully expressed. Because lipid soluble tea polyphenols are modified on the basis of water-soluble polyphenol molecules by connected the fat-soluble fatty acids to the phenolic hydroxyl, which makes the molecular weight nearly double, and dissolve in lipids, the metabolism in the body get longer and have enough time to change the body's fat metabolism

GSC Confidential



The Characteristic of LSTP

Global Strategic Connections, LLC

C.IMPROVE PRODUCT COLOR

The influence of different antioxidants on the color and brightness[Ⓢ]

Additive	Concentration (mg/kg)	L	a	b	Difference between a and ck	Difference between b and ck	b/a [Ⓢ]
OSGTP	100	96.5	-2.3	17.3	0.3	-1.7	-7.52 [Ⓢ]
	150	96.2	-2.3	17.3	0.3	-2.0	-7.52 [Ⓢ]
	200	94.2	-2.1	17.2	0.5	-4.0	-8.19 [Ⓢ]
KLBGTP	100	91.8	-2.4	14.3	0.2	-6.4	-5.96 [Ⓢ]
	150	90.4	-2.1	14.2	0.5	-6.8	-6.76 [Ⓢ]
	200	89.6	-2.0	13.8	0.6	-8.6	-6.90 [Ⓢ]
BHA	100	97.6	-2.6	15.8	0.0	-0.6	-6.08 [Ⓢ]
	150	97.4	-2.5	15.8	0.1	-0.8	-6.32 [Ⓢ]
	200	97.0	-2.4	15.7	0.2	-1.2	-6.54 [Ⓢ]
BHT	100	96.8	-2.6	15.7	0.0	-1.4	-6.04 [Ⓢ]
	150	96.7	-2.6	15.6	0.0	-1.5	-6.00 [Ⓢ]
	200	96.5	-2.7	15.6	-0.1	-1.7	-5.78 [Ⓢ]
CK		98.2	-2.6	16.0			-5.12 [Ⓢ]

GSC Confidential

- LSTP can be used for oils industry and cosmetic industry as a natural antioxidant, or for healthcare products as a raw material.
- LSTP is safe for the intended use, avoid ingestion, inhalation of dust or direct contact by applying suitable protective measures and personal hygiene.



LSTP



A. Vegetable oils contain a certain amount of antioxidants VE, etc., so it is not easy to oxidation at room temperature, shelf life than animal fats' is longer, but when the temperature and humidity environment get higher, its stability decreases rapidly, with varying degrees of corruption. Of tea polyphenols on the general common vegetable oils showed a significant inhibition of oxidative effect.

Oil Name		POV (meg/kg)	Inhibition ratio% [↵]
Peanut oil	Test group	11.0	77.4% [↵]
	control group	48.8	
Soybean oil	Test group	28.2	41.6% [↵]
	control group	48.3 [↵]	
Rape oil	Test group	17.8	60% [↵]
	control group	44.4 [↵]	
Palm oil	Test group	3.3	71.0% [↵]
	control group	6.4 [↵]	

B. Preservation of meat:

The results confirmed that polyphenols in the Chinese sausages during storage play an effective role to prevent and delay the expiration.

C. Tea polyphenols can retain the freshness of instant noodles and cakes.



Recommended Use

FOOD	Add Quantity (%)	USE Method
Oil	0.015	According to the proportion to join and mixing in oil
Meat	0.02	Mix in the products of additives
Dairy	0.02	Mix in the raw material
Cream margarine	0.015	Mix in the raw material
Instant noodles	0.02	Mix in the raw material or the Fired Oil
Moon cakes	0.02	Mix
Pharmaceuticals	0.1-0.2	Mix
Cosmetics	1.0-3.0	Mix