

## Natural Indigo

Natural Indigo Dye from plants in different countries with different botanical name, China and India are one of mainly planting countries with similar features. *Indigofera tinctoria*, *Polygonum tinctorium* (LINGUEE - name in China and Japan), *Banlangen*, *Persicaria tinctoria*...



Banlangen in China



Color of different indigo plants



LINGUEE



LINGUEE ready to Dye

Natural Indigo Dye is the only VAT category of dye in Natural Dyes. Dyeing is done as per the process of VAT dyeing with NaOH and Hydrosulphite of Soda.

Plant indigois called True Indigo is a natural dye for being used since the ancient times to fabricate “arresting blues”. This fabulous plant shared ancient herbal medicinal properties to counter many diseases. One of the major characteristics of the Natural Indigo is that it is a legume and transformed infertile land to fertile.

**Natural indigo doesn’t contain harmful metal and chemicals :**

This is a test result from INTERTEK

Metal type	Test result ppm	Oeko-tex 100 Standard ppm
Sb	1.5	30
As	<0.3	1.0
Pb	<0.3	1.0
Cd	<0.03	0.1
Hg	<0.01	0.02
Cu	<1.0	50
Cr	<0.5	2.0
VI	N/A	N/A
Co	<1.0	4.0
Ni	<1.0	4.0

## Chemicals test by INTERTEK TEST EN14372

Chemicals Test	Result
DBP	N/A
DEHP	N/A
BBP	N/A
DIBP	N/A
DIHP	N/A
Di-c7-11-alkyl	N/A
DHNUP	N/A
DHP	N/A
BMEP	N/A
DPP	N/A
1,2-benzenedicarboxylic acid, dihexylester	N/A
Branched and linear	N/A
DEEP	N/A

### **More Eco Textile processing and wastewater green benefit**

Compare to chemical industry indigo dye, Sewage treatment of vegetable dyes is relatively simple. Since the plant dyes are derived from nature, they can be recycled through the natural degradation of microorganisms, and the sewage can be recycled and reused to achieve the goal of pollution-free and near-zero emissions, in line with the current era of environmental protection and energy conservation and emission reduction.

Test items of wastewater after dye

	Plant dye wastewater	Synthetic dye wastewater
Chemical oxygen demand	mg/L 118	588
Total phosphorus	mg/L 0.373	8.38
Total nitrogen	mg/L 15.6	53.6
Ammonia nitrogen	mg/L 1.21	6.78

It can be seen from Table above, that the indicators of vegetable dye wastewater are much lower than synthetic dyes, indicating that the use of plant dyes is more environmentally friendly than synthetic dyes. In particular, the chemical oxygen demand index is much lower than synthetic dyes. The chemical oxygen demand indicator can qualitatively measure the water ecosystem. The higher the index, the more unfavorable it is for the growth of other aquatic organisms and even survival. Plant dyes have low chemical oxygen demand and have little effect on the growth of other aquatic organisms. Practice has proved that the planting of plant plant and water peanut plant in the wastewater of plant dyes will not affect the growth of these plants.

### **Bright of BLUE and minor impact under oxidation**

Natural indigo plants dyeing is more bright in blue shade. Comparing to industry indigo, natural indigo dye doesn't turn yellow shade easily under oxidation. It's one of the most favor color using in Eastern over thousand years history.

