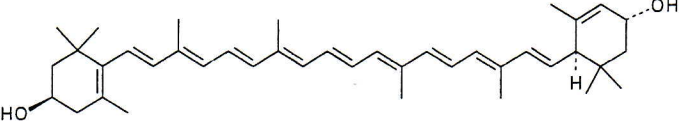


**INDOFINE Chemical Company, Inc.**

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Certificate Of Analysis**020306S****LUTEIN****BATCH: 46****IDENTIFICATION**

| | | |
|-------------------|--|--|
| CAS number | [127-40-2] | |
| Chemical family | Carotenoids | |
| Synonym | Xanthophyll | |
| Molecular formula | C ₄₀ H ₅₆ O ₂ |  |
| Molecular weight | 568.89 | |

ANALYSIS

| TEST | SPECIFICATION <i>(December 2010, version 03)</i> | RESULT |
|--|--|---------------|
| Appearance | Powder | Conform |
| Melting point | 174-181°C | 180-181°C |
| TLC | Silicagel Heptane / acetone (60/40, V/V) Visible | Main spot |
| UV/Visible spectrum λ max (\pm 2 nm) | 421, 444, 472 nm in methanol + 0.5% methylene chloride | Conform |
| E1% | 2470 \pm 100 at 444 nm 2290 \pm 100 at 472 nm | 2550 2350 |
| Assay (UV)* | \geq 95% | Conform |
| Date of last QC-recheck | <i>February 2012</i> | |
| Date of retest | <i>February 2013</i> | |

*Despite the specific and intensive care taken with these products, they are very fragile. We recommend that you confirm product purity by measuring the E1%

The values given on the 'Certificate of Analysis' are the results determined at the time of analysis.

STORAGE

Store at $<-15^{\circ}\text{C}$
Store away from light
HYGHLY UNSTABLE