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Date: 7.01.19

Cust.No: 96888

### Certificate of analysis

Report-No.: 69865801-99-002  
Batch: 1368  
Article: 89813 Triptophenolide

| Test                                                                                                            | Unit | Limit     | Testresult         |
|-----------------------------------------------------------------------------------------------------------------|------|-----------|--------------------|
| Appearance, SOP 100005                                                                                          |      | powder    | Conform            |
| Color, SOP 100006                                                                                               |      | yellowish | Conform            |
| Solubility, SOP 105001:<br>Methanol                                                                             |      | soluble   | Conform<br>Conform |
| Identification (IR-spectroscopy, Ph.Eur. 9.0,<br>2.2.24)/USP 39 NF 34 <197>), SOP 206000                        |      | Conform   | Conform            |
| Identification (1H-NMR-spectroscopy),<br>(outsourced), SOP 206010                                               |      | Conform   | Conform            |
| Identification (13C-NMR-spectroscopy),<br>(outsourced), SOP 206020                                              |      | Conform   | Conform            |
| Purity test (TLC), SOP 211219                                                                                   |      | Conform   | Conform            |
| Water content, (micro determination, coulometric<br>titration), Ph.Eur. 9.4., 2.5.32, SOP 304291:<br>Mean value | %    |           | < 0.2              |
| Triptophenolide, (HPLC), method 1,<br>(% AU), SOP 400607                                                        | %    | >= 98.00  | 99.72              |
| Peakpurity, (HPLC), SOP 401367                                                                                  |      | Conform   | Conform            |

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| Test                                                                  | Unit | Limit | Testresult |
|-----------------------------------------------------------------------|------|-------|------------|
| Residual solvents, (headspace-GC), SOP 805765:                        |      |       |            |
| Residual solvents                                                     | %    |       | < 0.05     |
| Inorganic impurities, (ICP-MS), for reference substances, SOP 811701: |      |       |            |
| Sodium                                                                | %    |       | < 0.1      |
| Potassium                                                             | %    |       | < 0.1      |
| Magnesium                                                             | %    |       | < 0.1      |
| Calcium                                                               | %    |       | < 0.1      |
| Aluminium                                                             | %    |       | < 0.1      |
| Phosphorus                                                            | %    |       | < 0.1      |
| Sulfur                                                                | %    |       | < 0.1      |
| Content*, SOP 890000                                                  | %    |       | 100        |

### Assessment:

The above mentioned reference substance meets the specification.

\*The absolute content is calculated considering the chromatographic purity, and if available, the content of water, residual solvents and inorganic impurities according to the following formula:  

$$\text{Content} = (100\% - \text{water content (\%)} - \text{residual solvents (\%)} - \text{inorganic impurities (\%)}) \times \text{chromatographic purity (\%)} / 100.$$

The chromatographic purity is checked regularly: the last analysis has been performed in December 2018.

The reference substance cannot be documented with an expiry date. The pack is closed and is recommended to be stored as indicated. The unopened product is guaranteed to fulfill the specifications of this analytical report for a period of 60 months. Once opened we can no longer guarantee the stability of the material.

Vestenbergsgreuth, 7.01.19

Dr. Jan Glaser

This is a computer print and valid without signature. A signed certificate of analysis can be taken on request.