

CERTIFICATE OF ANALYSIS

| DRUG SUBSTANCE | : Dextromethorphan Hydrobromide EP | BATCH QUANTITY | : 897.520 KG |
|-------------------------------|------------------------------------|----------------|--------------|
| BATCH NO. | : EUS10016 | DATE OF MFG. | : JAN _ 2019 |
| DATE OF ANALYSIS : JAN . 2019 | | RETEST DATE | : DEC . 2023 |
| | | PAGE NO | :1 OF 3 |

| Sr.No | TESTS | STANDARDS | RESULTS |
|-------|---|---|---|
| 1 | Characters | | |
| | a. Appearance (Description) | Almost white, crystalline powder. | Almost white crystalline powder. |
| | b. Solubility | Sparingly soluble in water, freely soluble in alcohol. | Sparingly soluble in water, freely soluble in alcohol. |
| | c. Melting Point | It melts at about 125°C, with decomposition. | It melts at 125.5°C with decomposition. |
| 2 | Identification | | |
| | A) Specific optical rotation | The specific optical rotation should be +28° to +30° calculated with reference to the anhydrous substance. | +29° |
| | B) Infrared Absorption Spectrophotometry | The transmission minima (absorption maxima) in the spectrum obtained with the sample should correspond in position and relative size to those in the spectrum obtained with the Dextromethorphan hydrobromide CRS/working standard. | The transmission minima (absorption maxima) in the spectrum obtained with the sample corresponds in position and relative size to those in the spectrum obtained with the Dextromethorphan hydrobromide working standard. |
| | D) Test for bromide | It should give reaction of bromides. | It gives reaction of bromides. |
| 3 | Appearance of solution | Solution 'S' should be clear and colourless. | Solution 'S' is clear and colourless. |
| 4 | Acidity or Alkalinity | Not more than 0.4 ml of 0.01 M hydrochloric acid should be required to change the colour of the indicator to | 0.2 ml of 0.01 M hydrochloric acid is required to change the colour of the indicator to red. |

2 2 · 0 | · 2 0 | g Checked by

Format No. :DM/EP/305144/1

Approved by

Effective Date: 24.05.2017



CERTIFICATE OF ANALYSIS

| DRUG SUBSTANCE | : Dextromethorphan Hydrobromide EP | BATCH QUANTITY | : 897.520 KG |
|-------------------------------|------------------------------------|----------------|--------------|
| BATCH NO. | : EUS10016 | DATE OF MFG. | ; JAN . 2019 |
| DATE OF ANALYSIS : JAN . 2019 | | RETEST DATE | : DEC . 2023 |
| | | PAGE NO | : 2 OF 3 |

| Sr.No | TESTS | STANDARDS | RESULTS |
|-------|--|---|--------------|
| | | red. | |
| 5 | Specific optical rotation | The specific optical rotation should be +28° to +30°, calculated with reference to the anhydrous substance. | +29° |
| 6 | Related substances i) Known impurities Impurity A | Not more than 0.5% | 0.09 % |
| | Impurity B | Not more than 0.25% | Not detected |
| | Impurity C | Not more than 0.25% | Not detected |
| | Impurity D | not more than 0.25% | Not detected |
| | ii) Any unknown impurity | Not more than 0.10% | **BDL |
| | iii) Total impurities | Not more than 1.0% | 0.09 % |
| 7 | Limit of N,N-dimethylanilinc* | Maximum 10 ppm. | |
| 8 | Water (Determined on about 0.200 g of sample) | Between 4.0% and 5.5% w/w. | 5.0% w/w |
| 9 | Sulphated Ash | Maximum 0.1% w/w. | 0.03% w/w |
| 10 | Assay (calculated with reference to the anhydrous substance) | Between 99.0 and 101.0%, | 99.9% w/w |
| | ADDITIONAL IN HOUSE IESTS Residual Solvents Isopropyl alcohol | Not more than 1000 ppm | 83 ppm |
| | Toluene | Not more than 300 ppm | Not detected |

22.01.2.019 Checked by

Format No. : DM/EP/305144/1

Approved by

Effective Date:24.05.2017



CERTIFICATE OF ANALYSIS

| DRUG SUBSTANCE | : Dextromethorphan Hydrobromide EP | BATCH QUANTITY | : 897.520 KG |
|-------------------------------|------------------------------------|----------------|--------------|
| BATCH NO. | : EUS10016 | DATE OF MFG. | : JAN _ 2019 |
| DATE OF ANALYSIS : JAN . 2019 | | RETEST DATE | : DEC . 2023 |
| | | PAGE NO | :3 OF 3 |

| Sr.No | TESTS | STANDARDS | RESULTS |
|-------|----------------------|--|---------------------------------------|
| 12 | Particle size | Not less than 98.0% should pass through 60 mesh (250µm). | 99.9% passes through 60 mesh (250μm). |
| 13 | Tapped density | Between 0.5 and 0.9 g/cc. | 0.83 g/cc ' |
| 14 | Formaldehyde content | Not more than 0.3 ppm | ***BDL |

^{*}Based on the knowledge of manufacturing process, there is no potential for presence of N,N-Dimethylaniline.

Remarks: The Material Complies With Specification No: FP/EP/305144/1.

Storage: Preserve in tight containers.

22.01.2019 Checked by

Format No. : DM/EP/305144/1

Approved by

Effective Date:24.05.2017

^{**}Below disregard limit is 0.05%.

^{***}Below disregard limit is 0.0629 ppm.