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| **Description and Composition of the Drug Product** | |
| **BEA 2180 BR Respimat® Solution for Inhalation Active Product and Matching Placebo** | Internal Number  ADD 774 |
| Document Number  U05-1314-01 |
| Date  15 May 2007 |
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# DESCRIPTION OF THE DRUG PRODUCT

BEA 2180 BR Respimat solution for inhalation consists of an aqueous solution of

BEA 2180 BR filled into a cartridge, and a Respimat inhalation device. One cartridge is used per device.

Respimat is a hand held, pocket sized oral inhalation device that uses mechanical energy to generate a slow moving aerosol cloud of medication (“soft mist”) from a metered volume of drug solution.

Three dose strengths of BEA 2180 BR Respimat solution for inhalation, corresponding to 50, 100 and 200 µg and a placebo formulation will be used. One dose will be administered by 2 actuations of the inhalation device. In order to conform to international standards for declaration of active substances, the dose strengths refer to the cation, i.e. BEA 2180, as the active moiety of the molecule.

# COMPOSITION OF THE DRUG PRODUCT

* 1. **BEA 2180 BR RESPIMAT** **SOLUTION FOR INHALATION**

The BEA 2180 BR Respimat formulation is an aqueous solution containing BEA 2180 BR as active substance.

The compositions of BEA 2180 BR Respimat solution for inhalation corresponding to the dose strengths of 50, 100, and 200 µg as well as the placebo formulation are given in Table 1 and 2.

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Table 1 Composition of BEA 2180 BR Respimat solution for inhalation (Mass per dose)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name of ingredient** | **Mass per dose d**  **[mg] dose strength**  **50µg** | **Mass per dose d**  **[mg] dose strength**  **100µg** | **Mass per dose d**  **[mg] dose strength**  **200µg** | **Mass per dose d**  **[mg] placebo e** | **Function** | **Reference to standards** |
| BEA 2180 a | 0.0500 | 0.1000 | 0.2000 | - | Drug substance | In house standard |
| Corresponding amount of  BEA 2180 BR a | 0.0606 | 0.1211 | 0.2422 | - |  |  |
| Benzalkonium chloride b, c | 0.0023 | 0.0023 | 0.0023 | 0.0023 | Preservative | Pharm. Eur. |
| Edetate disodium | 0.0023 | 0.0023 | 0.0023 | 0.0023 | Stabilizer | Pharm. Eur. |
| Citric acid, anhydrous | 0.0007 | 0.0007 | 0.0007 | 0.0007 | Acidifier | Pharm. Eur. |
| Water for injection f | ad 22.4 | ad 22.4 | ad 23.7 | ad 22.9 | Solvent | Pharm. Eur. |
| Nitrogen | q. s. | q. s. | q. s. | q. s. | Gas for filtration | Pharm. Eur. |
| Total weight | 22.4 | 22.4 | 23.7 | 22.9 |  |  |

* + 1. 1 g of BEA 2180 corresponds to 1.211 g of BEA 2180 BR
    2. The declared amount of benzalkonium chloride refers to the anhydrous substance
    3. Benzalkonium chloride may be used as a 50% aqueous solution or solid substance; both comply with the respective monographs of the Pharm. Eur. "Benzalkonium chloride solution" and "Benzalkonium chloride", respectively.
    4. One dose will be administered by 2 actuations of the inhalation device
    5. The placebo formulation used for clinical trials is identical to the active product formulation, except that it contains no active drug. f Alternatively, Purified Water may be used.

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Table 2 Composition of BEA 2180 BR Respimat solution for inhalation (Percentage formula)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name of ingredient** | **Percentage Formula [g/100 ml]**  **dose strength 50µg d** | **Percentage Formula [g/100 ml]**  **dose strength 100µg d** | **Percentage Formula [g/100 ml]**  **dose strength 200µg d** | **Percentage Formula [g/100 ml]**  **placebo d, e** | **Function** | **Reference to standards** |
| BEA 2180 a | 0.223 | 0.446 | 0.844 | - | Drug substance | In house standard |
| Corresponding amount of  BEA 2180 BR a | 0.270 | 0.541 | 1.022 | - |  |  |
| Benzalkonium chloride b, c | 0.010 | 0.010 | 0.010 | 0.010 | Preservative | Pharm. Eur. |
| Edetate disodium | 0.010 | 0.010 | 0.010 | 0.010 | Stabilizer | Pharm. Eur. |
| Citric acid, anhydrous | 0.003 | 0.003 | 0.003 | 0.003 | Acidifier | Pharm. Eur. |
| Water for injection f | ad 100.0 | ad 100.0 | ad 100.0 | ad 100.0 | Solvent | Pharm. Eur. |
| Nitrogen | q. s. | q. s. | q. s. | q. s. | Gas for filtration | Pharm. Eur. |
| Total weight | 100.0 | 100.0 | 100.0 | 100.0 |  |  |

1. 1 g of BEA 2180 corresponds to 1.211 g of BEA 2180 BR
2. The declared amount of benzalkonium chloride refers to the anhydrous substance
3. Benzalkonium chloride may be used as a 50% aqueous solution or solid substance; both comply with the respective monographs of the Pharm. Eur. "Benzalkonium chloride solution" and "Benzalkonium chloride", respectively.
4. One dose will be administered by 2 actuations of the inhalation device.
5. The placebo formulation used for clinical trials is identical to the active product formulation, except that it contains no active drug. f Alternatively, Purified Water may be used.