Salbutamol 1mg/ml Nebuliser Solution

Salbutamol 2mg/ml Nebuliser Solution

PL 36390/0035

PL 36390/0036

UKPAR

TABLE OF CONTENTS

Lay summary .................................................. Page 2
Scientific discussion ........................................ Page 3
Steps taken for assessment ............................... Page 9
Summaries of product characteristics ................ Page 10
Patient information leaflet ............................... Page 22
Labelling ....................................................... Page 25
SALBUTAMOL 1MG/ML NEBULISER SOLUTION

SALBUTAMOL 2MG/ML NEBULISER SOLUTION

PL 36390/0035

PL 36390/0036

LAY SUMMARY

The Medicines and Healthcare products Regulatory Agency (MHRA) granted Marketing Authorisations (licences) for the medicinal products Salbutamol 1mg/ml and 2mg/ml Nebuliser Solution (product licence numbers: PL 36390/0035-0036) on 6 June 2011. These products are available by prescription only.

Salbutamol Nebuliser Solution is a liquid which, when used in a nebulising device, is converted into a mist that can then be inhaled. It contains the active ingredient salbutamol, which belongs to a group of medicines called bronchodilators. These are used to make breathing easier by relaxing and opening up the airways in the lungs.

Salbutamol is used for the management of the symptoms of severe wheeziness or other chest conditions (such as asthma or bronchitis) particularly when no other treatment seems to work. It is also used to treat severe attacks of asthma.

Salbutamol Nebuliser Solutions raised no clinically significant safety concerns and it was, therefore, judged that the benefits of using these products outweigh the risks; hence Marketing Authorisations have been granted.
SALBUTAMOL 1MG/ML NEBULISER SOLUTION

SALBUTAMOL 2MG/ML NEBULISER SOLUTION

PL 36390/0035

PL 36390/0036

SCIENTIFIC DISCUSSION

TABLE OF CONTENTS

Introduction .................................................. Page 4
Pharmaceutical assessment ............................... Page 5
Preclinical assessment ..................................... Page 6
Clinical assessment ......................................... Page 7
Overall conclusions and risk benefit assessment  .... Page 8
INTRODUCTION

Based on the review of the data on quality, safety and efficacy, the MHRA granted Marketing Authorisations for the medicinal products Salbutamol 1mg/ml and 2mg/ml Nebuliser Solution (PL 36390/0035-0036) on 6 June 2011.

These are abridged applications submitted under Article 10(c) of EC Directive 2001/83, last paragraph. The applicant claims that these products are identical to Salbutamol 1mg/ml and 2mg/ml Nebuliser Solution (PL 08137/0083 and PL 08137/0131), authorised to Neolab Limited.

No new data were submitted, nor was it necessary for these simple applications, as the data are identical to those for the previously granted reference products.

Salbutamol Nebuliser Solutions are indicated for use in the routine management of chronic bronchospasm unresponsive to conventional therapy, and in the treatment of acute severe asthma.
PHARMACEUTICAL ASSESSMENT

DRUG SUBSTANCE
The salbutamol sulphate used in these products complies with a current EDQM Certificate of Suitability and is, therefore, satisfactory.

DRUG PRODUCT
The nebuliser solutions are clear and sterile and contain the pharmaceutical excipients sodium chloride, sulphuric acid (to adjust pH) and water for injection.

The products are stored in plastic, polyethylene ampoules that hold 2.5 ml of solution. The ampoules come in strips of five, which are over-wrapped in a protective foil. The products are available in boxes containing 20 ampoules.

There appears to be no difference between the composition and packaging of the proposed products and those of the already licensed reference products.

The proposed shelf-life (2 years for unopened product and 3 months after opening the foil over-wrap) and storage conditions (Store in the original package. The ampoules should be protected from light after removal from the foil over-wrap) are consistent with the details registered for the reference products.

ADDITIONAL DATA REQUIREMENTS
The active ingredient specification, manufacturing process, and finished product specifications are in line with those for the reference products and are satisfactory.

A satisfactory Letters of Access has been provided.

EXPERT REPORTS
Satisfactory expert reports in the form of quality, non-clinical and clinical overall summaries are provided, with signed declarations from each expert confirming that the applicant’s products are identical to the reference products in all particulars. Expert CVs are also submitted and are acceptable.

PRODUCT LITERATURE
The proposed SmPCs, PILs and labels are identical to those for the reference products and are satisfactory.

ASSSESSOR’S OVERALL CONCLUSIONS
Marketing Authorisations may be granted for these products.
PRECLINICAL ASSESSMENT

No new preclinical data have been supplied with these applications and none is required for an application of this type.
CLINICAL ASSESSMENT

OVERVIEW
A statement has been provided confirming that the clinical particulars for Salbutamol 1mg/ml and 2mg/ml Nebuliser Solution (PL 36390/0035-0036) are identical to those for the already licensed products; Salbutamol 1mg/ml and 2mg/ml Nebuliser Solution (PL 08137/0083 and PL 08137/0131). This is satisfactory.

BIOAVAILABILITY AND BIOEQUIVALENCE
No bioequivalence study has been performed to support these applications and none is needed.

PRODUCT LITERATURE
All product literature is medically satisfactory.

ASSESSOR’S OVERALL CONCLUSIONS
It is recommended that Marketing Authorisations can be granted.
OVERALL CONCLUSION AND RISK BENEFIT ASSESSMENT

QUALITY
Salbutamol 1mg/ml and 2mg/ml Nebuliser Solution are identical to the already licensed reference products. These products are, therefore, pharmaceutically satisfactory.

PRECLINICAL
No new preclinical data were submitted and none are required for applications of this type.

EFFICACY
The efficacy of salbutamol is well established. The SmPCs, PILs and labelling are satisfactory and consistent with those for the reference products.

RISK BENEFIT ASSESSMENT
The quality of the products is acceptable, no significant preclinical or clinical safety concerns were identified, and benefit has been shown to be associated with salbutamol. The risk benefit ratio is, therefore, considered to be acceptable.
SALBUTAMOL 1MG/ML NEBULISER SOLUTION

SALBUTAMOL 2MG/ML NEBULISER SOLUTION

PL 36390/0035

PL 36390/0036

STEPS TAKEN FOR ASSESSMENT

<table>
<thead>
<tr>
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<th>Description</th>
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<tr>
<td>1</td>
<td>The MHRA received the Marketing Authorisation applications on 17 January 2011</td>
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<tr>
<td>2</td>
<td>Following standard checks and communication with the applicant the MHRA considered the applications valid on 8 February 2011</td>
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<td>3</td>
<td>Following assessment of the applications the MHRA requested further information relating to the dossier on 18 April 2011</td>
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<td>4</td>
<td>The applicant responded to the MHRA’s requests, providing further information on the dossier on 23 May 2011</td>
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<tr>
<td>5</td>
<td>The applications were determined on 6 June 2011</td>
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SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE MEDICINAL PRODUCT
Salbutamol 1mg/ml Nebuliser Solution

2 QUALITATIVE AND QUANTITATIVE COMPOSITION
Each nebule contains 2.5mg / 2.5ml salbutamol (as sulphate).
For full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM
Nebuliser Solution (for use via a nebuliser).
Plastic ampoule containing 2.5 ml of a clear sterile solution containing 2.5mg salbutamol (as sulphate) in normal saline.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications
Salbutamol is a selective beta-2-agonist providing short-acting (4-6 hour) bronchodilatation with a fast onset (within 5 minutes) in reversible airways obstruction.

Salbutamol Nebuliser Solutions are indicated for use in the routine management of chronic bronchospasm unresponsive to conventional therapy, and in the treatment of acute severe asthma.

4.2 Posology and method of administration
For inhalation use.
The solution should not be injected or swallowed.
To be used with a suitable nebuliser device under the direction of a physician.

Adults (and the elderly): 2.5mg to 5mg salbutamol up to four times a day. Up to 40mg per day can be given under strict medical direction in hospital.

Children: 2.5mg to 5mg up to four times a day.

Infants under 18 months old: The clinical efficacy of nebulised salbutamol is uncertain. As transient hypoxia may occur supplemental oxygen therapy should be considered.

Salbutamol Nebulisers Solutions are intended to be used undiluted. However, if prolonged delivery time (more than 10 minutes) is required, the solution may be diluted with sterile normal saline.
4.3 **Contraindications**

Hypersensitivity to salbutamol or to any of the excipients.

Salbutamol Nebuliser Solutions are contraindicated for use in the management of premature labour and threatened abortion.

4.4 **Special warnings and precautions for use**

Salbutamol Nebuliser Solution must not be injected or swallowed.

Potentially serious hypokalaemia has been reported in patients taking beta-2-agonist therapy. Particular caution is advised in patients with severe asthma as hypokalaemia may be potentiated in hypoxic patients and those treated with xanthine derivatives, steroids, diuretics and long-term laxatives. In these groups of patients serum potassium levels should be monitored.

Bronchodilators should not be the only or main treatment in patients with severe or unstable asthma. Severe asthma requires specialist medical assessment, including lung function testing, as patients are at risk of severe attacks or even death. Physicians should consider using the maximum recommended dose of inhaled corticosteroid and/or oral corticosteroid therapy in these patients.

Patients being treated with Salbutamol Nebuliser Solution may also be receiving treatment with other short-acting inhaled bronchodilators to relieve symptoms. Increasing use of bronchodilators, in particular short-acting beta-2 agonists to relieve symptoms indicates deterioration of asthma control. Patients should be advised to seek medical advice if their treatment ceases to be effective, more inhalations than usual are required and/or their asthma seems to be getting worse. Patients should not increase their dose without medical advice.

Salbutamol should be administered cautiously to patients with thyrotoxicosis.

Salbutamol Nebuliser Solutions should be used with care in patients known to have received large doses of other sympathomimetic drugs.

Cardiovascular effects may be seen with sympathomimetic drugs, including Salbutamol. There is some evidence from post-marketing data and published literature of rare occurrences of myocardial ischaemia associated with Salbutamol. Patients with underlying severe heart disease (e.g., ischaemic heart disease, arrhythmia or severe heart failure) who are receiving Salbutamol should be warned to seek medical advice if they experience chest pain or other symptoms of worsening heart disease. Attention should be paid to assessment of symptoms such as dyspnoea or chest pain, as they may be of either respiratory or cardiac origin.

In common with other beta-adrenoceptor agonists, salbutamol can induce reversible metabolic changes such as increased blood glucose levels. Diabetic patients may be unable to compensate for the increase in blood glucose and the
development of ketoacidosis has been reported. Concurrent administration of corticosteroids can exaggerate this effect.

Lactic acidosis has been reported in association with high therapeutic doses of intravenous and nebulised short-acting beta-agonist therapy, mainly in patients being treated for an acute asthma exacerbation (see Section 4.8). Increase in lactate levels may lead to dyspnoea and compensatory hyperventilation, which could be misinterpreted as a sign of asthma treatment failure and lead to inappropriate intensification of short-acting beta-agonist treatment. It is therefore recommended that patients are monitored for the development of elevated serum lactate and consequent metabolic acidosis in this setting.

A small number of cases of acute angle-closure glaucoma have been reported in patients treated with a combination of nebulised salbutamol and ipratropium bromide. A combination of nebulised salbutamol with nebulised anticholinergics should therefore be used cautiously. Patients should receive adequate instruction in correct administration and be warned not to let the solution or mist, enter their eyes.

Patients receiving treatment at home should seek medical advice if treatment with nebulised salbutamol becomes less effective. The dosage or frequency of administration should only be increased on medical advice.

4.5 Interaction with other medicinal products and other forms of interaction

Salbutamol and beta-blockers (i.e propranolol) should not usually be prescribed together.

Hypokalaemia occurring with beta-2-agonist therapy may be exacerbated by treatment with xanthines, steroids, diuretics and long-term laxatives.

4.6 Pregnancy and lactation

Salbutamol should not be used in pregnancy and lactation unless the expected benefit to the mother is thought to outweigh the risk to the foetus.

The safe use of inhaled Salbutamol during pregnancy has not been established but it is reported that in animal studies at high doses there is evidence of harmful effects to the foetus.

Careful consideration should be given to the use of Salbutamol in nursing mothers, as it is not known whether salbutamol is distributed into breast milk.

4.7 Effects on ability to drive and use machines

None reported.

4.8 Undesirable effects

Adverse reactions are listed by frequency: common (≥1/100 and <1/10); uncommon (≥1/1000 and <1/100), rare (≥1/10,000 and <1/1,000); very rare (<1/10,000).

The following undesirable effects have been observed:
**Immune system disorders**  
*Very rare*: Hypersensitivity reactions including angioedema, urticaria, bronchospasm, hypotension and collapse.

**Metabolism and nutrition disorders**  
*Rare*: Hypokalaemia, potentially serious hypokalaemia may result from beta₂ agonist therapy (see section 4.4)  
*Unknown*: Lactic acidosis may occur during prolonged or repeated high-dose therapy.

**Nervous system disorders**  
*Common*: Headache, tremor.  
Salbutamol Nebuliser Solutions may cause a fine tremor of skeletal muscle; usually the hands are most obviously affected. This effect is dose related and is common to all beta-adrenergic stimulants.  
*Very rare*: Hyperactivity in children has been reported

**Cardiac disorders**  
*Common*: Tachycardia  
*Uncommon*: Palpitations  
*Very rare*: Cardiac arrhythmias (including atrial fibrillation, supraventricular tachycardia, extrasystoles)  
*Unknown*: Myocardial ischaemia (see section 4.4).

**Vascular disorders**  
*Rare*: Peripheral vasodilatation

**Respiratory, thoracic and mediastinal disorders**  
*Very rare*: Paradoxical bronchospasm.  
As with other inhalation therapy, paradoxical bronchospasm may occur with an immediate increase in wheezing after dosing. This should be treated immediately with an alternative presentation or a different fast-acting inhaled bronchodilator. The preparation should be discontinued immediately, the patient assessed, and, if necessary, alternative therapy instituted.  
Solutions which are not of neutral pH may rarely cause bronchospasm.

**Gastrointestinal disorders**  
*Uncommon*: Mouth and throat irritation

**Musculoskeletal and connective tissue disorders**  
*Uncommon*: Muscle cramps

### 4.9 Overdose

The preferred antidote to overdosage with salbutamol is a cardioselective beta-blocking agent, but beta-blocking drugs should be used with caution in patients with a history of bronchospasm.  
Hypokalaemia may occur following overdose with salbutamol. Serum
5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties
R03A C02
Salbutamol is a selective beta-2-adrenoceptor agonist with effects on bronchial muscle.

5.2 Pharmacokinetic properties
When salbutamol is taken by the inhalation route only about 10% - 20% of the dose is deposited in the airways, with the remainder either being retained in the delivery system or swallowed.

Inhaled Salbutamol has a fast onset of action (within 5 – 10 minutes of inhalation) and lasts 4-6 hours in most patients.

Salbutamol does not appear to be metabolised in the lung. The swallowed part of the salbutamol dose is absorbed from the gastrointestinal tract and is subject to first-pass metabolism in the liver; about half is excreted in the urine as an inactive sulphate conjugate.

5.3 Preclinical safety data
No additional information.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients
Sodium chloride
Sulphuric acid to adjust pH
Water for injection

6.2 Incompatibilities
Not applicable.

6.3 Shelf life
2 years unopened.
3 months after opening the foil over-wrap.

6.4 Special precautions for storage
Store in the original package.
The ampoules should be protected from light after removal from the foil over-wrap.

6.5 Nature and contents of container
Plastic polyethylene ampoules in strips of 5 ampoules, with a protective foil over-wrap. Available in boxes containing 20 ampoules.

potassium levels should be monitored.
6.6 Special precautions for disposal
Nebulisers should be used in a well ventilated room as it is usual for some nebulised drug to be released into the local environment.

_Dilution:_ May be diluted with sterile sodium chloride solution, (normal saline) if required.

For instructions on the use of this product refer to the Patient Information Leaflet.

7 MARKETING AUTHORISATION HOLDER
STD Chemicals Ltd,
Hillbrow House,
Hillbrow Road,
Esher,
Surrey,
KT10 9NW

8 MARKETING AUTHORISATION NUMBER(S)
PL 36390/0035

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION
06/06/2011

10 DATE OF REVISION OF THE TEXT
06/06/2011

1 NAME OF THE MEDICINAL PRODUCT
Salbutamol 2mg/ml Nebuliser Solution

2 QUALITATIVE AND QUANTITATIVE COMPOSITION
Each nebulule contains 5mg / 2.5ml salbutamol (as sulphate).

For full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM
Nebuliser Solution (for use via a nebuliser).

Plastic ampoule containing 2.5 ml of a clear sterile solution containing 5mg salbutamol (as sulphate) in normal saline.
4 CLINICAL PARTICULARS

4.1 Therapeutic indications
Salbutamol is a selective beta-2-agonist providing short-acting (4-6 hour) bronchodilatation with a fast onset (within 5 minutes) in reversible airways obstruction.

Salbutamol Nebuliser Solutions are indicated for use in the routine management of chronic bronchospasm unresponsive to conventional therapy, and in the treatment of acute severe asthma.

4.2 Posology and method of administration
For inhalation use.
The solution should not be injected or swallowed.
To be used with a suitable nebuliser device under the direction of a physician.

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Infants under 18 months old: The clinical efficacy of nebulised salbutamol is uncertain. As transient hypoxia may occur supplemental oxygen therapy should be considered.

Salbutamol Nebulisers Solutions are intended to be used undiluted. However, if prolonged delivery time (more than 10 minutes) is required, the solution may be diluted with sterile normal saline.

4.3 Contraindications
Hypersensitivity to salbutamol or to any of the excipients.
Salbutamol Nebuliser Solutions are contraindicated for use in the management of premature labour and threatened abortion.

4.4 Special warnings and precautions for use
Salbutamol Nebuliser Solution must not be injected or swallowed.

Potentially serious hypokalaemia has been reported in patients taking beta-2-agonist therapy. Particular caution is advised in patients with severe asthma as hypokalaemia may be potentiated in hypoxic patients and those treated with xanthine derivatives, steroids, diuretics and long-term laxatives. In these groups of patients serum potassium levels should be monitored.

Bronchodilators should not be the only or main treatment in patients with severe or unstable asthma. Severe asthma requires specialist medical assessment, including lung function testing, as patients are at risk of severe attacks or even death. Physicians should consider using the maximum recommended dose of inhaled corticosteroid and/or oral corticosteroid therapy in these patients.
Patients being treated with Salbutamol Nebuliser Solution may also be receiving treatment with other short-acting inhaled bronchodilators to relieve symptoms. Increasing use of bronchodilators, in particular short-acting beta-2-agonists to relieve symptoms indicates deterioration of asthma control. Patients should be advised to seek medical advice if their treatment ceases to be effective, more inhalations than usual are required and/or their asthma seems to be getting worse. Patients should not increase their dose without medical advice.

Salbutamol should be administered cautiously to patients with thyrotoxicosis.

Salbutamol Nebuliser Solutions should be used with care in patients known to have received large doses of other sympathomimetic drugs.

Cardiovascular effects may be seen with sympathomimetic drugs, including Salbutamol. There is some evidence from post-marketing data and published literature of rare occurrences of myocardial ischaemia associated with Salbutamol. Patients with underlying severe heart disease (e.g., ischaemic heart disease, arrhythmia or severe heart failure) who are receiving Salbutamol should be warned to seek medical advice if they experience chest pain or other symptoms of worsening heart disease. Attention should be paid to assessment of symptoms such as dyspnoea or chest pain, as they may be of either respiratory or cardiac origin.

In common with other beta-adrenoceptor agonists, salbutamol can induce reversible metabolic changes such as increased blood glucose levels. Diabetic patients may be unable to compensate for the increase in blood glucose and the development of ketoacidosis has been reported. Concurrent administration of corticosteroids can exaggerate this effect.

Lactic acidosis has been reported in association with high therapeutic doses of intravenous and nebulised short-acting beta-agonist therapy, mainly in patients being treated for an acute asthma exacerbation (see Section 4.8). Increase in lactate levels may lead to dyspnoea and compensatory hyperventilation, which could be misinterpreted as a sign of asthma treatment failure and lead to inappropriate intensification of short-acting beta-agonist treatment. It is therefore recommended that patients are monitored for the development of elevated serum lactate and consequent metabolic acidosis in this setting.

A small number of cases of acute angle-closure glaucoma have been reported in patients treated with a combination of nebulised salbutamol and ipratropium bromide. A combination of nebulised salbutamol with nebulised anticholinergics should therefore be used cautiously. Patients should receive adequate instruction in correct administration and be warned not to let the solution or mist, enter their eyes.

Patients receiving treatment at home should seek medical advice if treatment with nebulised salbutamol becomes less effective. The dosage or frequency of administration should only be increased on medical advice.
4.5 **Interaction with other medicinal products and other forms of interaction**

Salbutamol and beta-blockers (i.e. propranolol) should not usually be prescribed together.

Hypokalaemia occurring with beta-2-agonist therapy may be exacerbated by treatment with xanthines, steroids, diuretics and long-term laxatives.

4.6 **Pregnancy and lactation**

Salbutamol should not be used in pregnancy and lactation unless the expected benefit to the mother is thought to outweigh the risk to the foetus.

The safe use of inhaled Salbutamol during pregnancy has not been established but it is reported that in animal studies at high doses there is evidence of harmful effects to the foetus.

Careful consideration should be given to the use of Salbutamol in nursing mothers, as it is not known whether salbutamol is distributed into breast milk.

4.7 **Effects on ability to drive and use machines**

None reported.

4.8 **Undesirable effects**

Adverse reactions are listed by frequency: common (≥1/100 and <1/10); uncommon (≥1/1000 and <1/100), rare (≥1/10,000 and <1/1,000), very rare (<1/10,000).

The following undesirable effects have been observed:

*Immune system disorders*

*Very rare:* Hypersensitivity reactions including angioedema, urticaria, bronchospasm, hypotension and collapse

*Metabolism and nutrition disorders*

*Rare:* Hypokalaemia, potentially serious hypokalaemia may result from beta_2_ agonist therapy (see section 4.4)

*Unknown:* Lactic acidosis may occur during prolonged or repeated high-dose therapy.

*Nervous system disorders*

*Common:* Headache, tremor.

Salbutamol Nebuliser Solutions may cause a fine tremor of skeletal muscle; usually the hands are most obviously affected. This effect is dose related and is common to all beta-adrenergic stimulants.

*Very rare:* Hyperactivity in children has been reported

*Cardiac disorders*

*Common:* Tachycardia

*Uncommon:* Palpitations

*Very rare:* Cardiac arrhythmias (including atrial fibrillation, supraventricular
tachycardia, extrasystoles)
*Unknown:* Myocardial ischaemia (see section 4.4).

**Vascular disorders**
*Rare:* Peripheral vasodilatation

**Respiratory, thoracic and mediastinal disorders**
*Very rare:* Paradoxical bronchospasm.
As with other inhalation therapy, paradoxical bronchospasm may occur with an immediate increase in wheezing after dosing. This should be treated immediately with an alternative presentation or a different fast-acting inhaled bronchodilator.
The preparation should be discontinued immediately, the patient assessed, and, if necessary, alternative therapy instituted.
Solutions which are not of neutral pH may rarely cause bronchospasm.

**Gastrointestinal disorders**
*Uncommon:* Mouth and throat irritation

**Musculoskeletal and connective tissue disorders**
*Uncommon:* Muscle cramps

4.9 **Overdose**
The preferred antidote to overdosage with salbutamol is a cardioselective beta-blocking agent, but beta-blocking drugs should be used with caution in patients with a history of bronchospasm.

Hypokalaemia may occur following overdose with salbutamol. Serum potassium levels should be monitored

5 **PHARMACOLOGICAL PROPERTIES**

5.1 **Pharmacodynamic properties**
R03A C02
Salbutamol is a selective beta-2-adrenoceptor agonist with effects on bronchial muscle.

5.2 **Pharmacokinetic properties**
When salbutamol is taken by the inhalation route only about 10% - 20% of the dose is deposited in the airways, with the remainder either being retained in the delivery system or swallowed.

Inhaled Salbutamol has a fast onset of action (within 5 – 10 minutes of inhalation) and lasts 4-6 hours in most patients.

Salbutamol does not appear to be metabolised in the lung. The swallowed part of the salbutamol dose is absorbed from the gastrointestinal tract and is subject to first-pass metabolism in the liver; about half is excreted in the urine as an inactive sulphate conjugate.
5.3 **Preclinical safety data**
No additional information.

6 **PHARMACEUTICAL PARTICULARS**

6.1 **List of excipients**
- Sodium chloride
- Sulphuric acid to adjust pH
- Water for injection

6.2 **Incompatibilities**
Not applicable.

6.3 **Shelf life**
- 2 years unopened.
- 3 months after opening the foil over-wrap.

6.4 **Special precautions for storage**
Store in the original package.
The ampoules should be protected from light after removal from the foil over-wrap.

6.5 **Nature and contents of container**
Plastic polyethylene ampoules in strips of 5 ampoules, with a protective foil over-wrap. Available in boxes containing 20 ampoules

6.6 **Special precautions for disposal**
Nebulisers should be used in a well ventilated room as it is usual for some nebulised drug to be released into the local environment.

*Dilution:* May be diluted with sterile sodium chloride solution, (normal saline) if required.

For instructions on the use of this product refer to the Patient Information Leaflet.

7 **MARKETING AUTHORISATION HOLDER**
STD Chemicals Ltd,
Hillbrow House,
Hillbrow Road,
Esher,
Surrey,
KT10 9NW

8 **MARKETING AUTHORISATION NUMBER(S)**
PL 36390/0036
DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORIZATION
06/06/2011

DATE OF REVISION OF THE TEXT
06/06/2011
1. WHAT SALBUTAMOL NEBULISER SOLUTION IS AND WHAT IT IS USED FOR

Salbutamol Nebuliser Solution is a liquid which, when used in a nebulising device, is converted into a mist which can then be inhaled. It contains the active ingredient salbutamol (salbutamol sulphate) which belongs to a group of medicines called bronchodilators. These are used to make breathing easier by relaxing and opening up the airways in the lungs. Salbutamol is used for the management of the symptoms of severe wheeziness or other chest conditions (such as asthma or bronchitis) particularly when no other treatment seems to work.

They are also used to treat severe attacks of asthma.

2. BEFORE YOU USE SALBUTAMOL NEBULISER SOLUTION

Do not use Salbutamol Nebuliser Solution if you are:

- allergic (hypersensitive) to salbutamol, salbutamol sulphate, or any of the other ingredients in Salbutamol Nebuliser Solution (see section 6. Further Information).
- pregnant and/or breast feeding.
- taking other bronchodilators (bronchodilator) drugs.
- taking other nebuliser solutions such as ipratropium bromide.
- using other nebuliser solutions at the same time as this medicine (see section 6. Further Information).
- being treated for an overactive thyroid, salbutamol may interfere with your thyroid medication.
- are diabetic.
- have existing heart disease such as angina or heart failure you must seek immediate medical advice especially if you experience any chest pain or other symptoms of heart disease.
- taking other medicines.
- if you are taking or have recently taken any other medicines including medicines obtained without a prescription. It is important that you tell your doctor if you are taking the following medicines, as they may decrease or increase the effect of Salbutamol Nebuliser Solution and vice versa.
- are taking any other beta-adrenergic agonists (these are medicines used to treat severe asthma and other lung conditions).
- are taking beta blockers such as propranolol. These are not usually taken with salbutamol.
- are taking other bronchodilators (bronchodilator) drugs.
- are taking other medicines.
- breast feeding.

Pregnancy and breast-feeding

Do not use Salbutamol Nebuliser Solution if you are in premature labour or have a threatened miscarriage.

Do not breast feed unless your doctor advises you to as salbutamol passes into breast milk.

The safety of salbutamol during pregnancy has not been established. Tell your doctor if you are pregnant, likely to be pregnant or are trying to become pregnant.

Ask your doctor or pharmacist for advice before taking any medicine.

Driving and using machines

It is unlikely that Salbutamol Nebuliser Solution will affect your ability to drive or use machines.

3. HOW TO USE SALBUTAMOL NEBULISER SOLUTION

This product is for inhalation use only. It should not be injected or swallowed.

Your doctor may tell you to use your nebuliser at a regular time each day or may tell you only to use it when you are very wheezy or short of breath.

Always use the nebuliser exactly as your doctor or asthma nurse has told you and use the recommended dose. Make sure that you know how to use your nebuliser properly. You should check with your doctor or pharmacist if you are not sure.

Adults, Elderly and Children aged over 18 months:
The usual dose is 2.5mg to 5mg salbutamol used up to 4 times a day, as described in "How to use your Nebuliser".

For severe attacks in hospital a higher dose may be given.

Read and follow the instructions on the pharmacist's label. Do not take more doses than your doctor has prescribed or use your nebuliser more often than you are told. It is very important that you inhale each dose exactly as instructed.

If you need to take more inhalations than usual, or you find the dose is becoming less effective, or your asthma is getting worse tell your doctor or asthma nurse immediately as you may need other medicines.

If you need to go into hospital take your Salbutamol Nebuliser with you.

How to use your Salbutamol Nebuliser:

1. Insert the plastic mouthpiece (labeled 1) into the nebuliser (labeled 2). Attach the nebuliser to a nebuliser system (labeled 3) (Page 1).
1. Set up the nebuliser and get it ready for filling.
2. Open the foil wrapping by cutting along the side. Only open when you are ready to use the first ampoule.
3. Take the ampoule strip out of the wrapping and remove the end ampoule by twisting downwards and away from you. Replace the unused ampoules back into the foil over-wrap and place them back into their box.
4. To open the ampoule: Hold the body and top of the ampoule securely and then twist the body.
5. Carefully place the open end of the ampoule into the nebuliser container and empty the contents by squeezing gently.
6. Set up and use the nebuliser as you have been shown.
7. Ensure that any remaining solution left in your nebuliser after use is discarded and your nebuliser is cleaned as recommended.
8. Nebulisers should always be used in a well-ventilated room.

**Salbutamol Nebuliser Solution is intended to be used undiluted.**

If you have been told by your doctor to dilute Salbutamol Nebuliser Solution, empty the contents of the ampoule into the nebuliser container, add the amount of sterile normal saline that your doctor has told you to and shake gently to mix before using.

If you use more Salbutamol Nebuliser Solution than you should:

If you have accidentally taken more than the prescribed dose, contact your nearest hospital casualty department or tell your doctor or pharmacist immediately. Remember to take your nebuliser with you.

Very rare (occurring in less than 1 in 10,000 people)
- hypokalaemia in children
- low blood pressure
- restlessness or irritability
- irregular or rapid heartbeat

The following side effects can also happen but the frequency of these is unknown:
- chest pain, especially if you have existing heart disease. See your doctor if this happens
- build up of mucus in your lungs, your doctor will check this from a blood test. This may cause stomach pain, hyperventilation, shortness of breath, cold feet and hands, irregular heartbeat and faint.

Patients who are also taking anticoagulant medicines (such as aspirin) mixed with salbutamol in their nebulisers, may suffer from an eye condition called glaucoma (an increase in pressure in the eyes), which can cause severe pain in the eye and damage to your vision. It is important to avoid getting the nebuliser mist in your eyes. This can be avoided by using a mouthpiece instead of a face mask or using protective eye goggles to prevent the mist from getting into the eyes if a face mask is preferred.

If any of these side effects gets serious, or if you notice any side effects not listed in this leaflet, please tell your doctor or pharmacist.

5. HOW TO STORE SALBUTAMOL NEBULISER SOLUTION

Keep out of the reach of children.

Do not take this medicine after the expiry date (Exp.) stated. The expiry date refers to the last day of that month.

Store in the original package to protect the ampoules from light. Always return the unopened ampoules to the foil over-wrap and place back into the box after use to protect from the light.

Use the ampoules within 3 months of first opening.

Medicines should not be disposed of via wastewater or household waste. Ask your pharmacist how to dispose of medicines no longer required. These measures will help to protect the environment.

6. FURTHER INFORMATION

What Salbutamol Nebuliser Solution contains:

The active ingredient is salbutamol sulphate. Each nebule contains 2.5mg or 5mg of salbutamol sulphate in 2.5ml of liquid.

The other ingredients are sodium chloride, sodium citrate (as a pH adjuster) and water.

What Salbutamol Nebuliser Solution looks like and the contents of the pack:

Salbutamol Nebuliser Solution is a liquid which when used in a nebuliser device is converted into a mist to be inhaled.

The solutions are available in two strengths, 1mg per ml or 2mg per ml. Each pack contains 20 ampoules.

Salbutamol Nebuliser Solution contains 2.5mg of solution. Each nebule contains 2.5ml of solution.

Salbutamol Nebuliser Solution comes in plastic polythene ampoules in strips of 5, with over-wrap. Your medicine is available in boxes of 20 ampoules.

Marketing Authorisation Holder and Manufacturer:

The Product Licence holder is STD, 3Combe Ltd, Hillhouse Road, Hillhouse Road, Erri, Surrey, KT10 9WA.

The manufacturer responsible for batch release is Nalab Ltd, 57 High Street, Odiham, Hants, RG92 1UF.

This leaflet was last revised in December 2010.
LABELLING

PL 36390/0035

Foil:

Salbutamol 1mg/ml Nebuliser Solution
2.5 mg/2.5 ml
For inhalation use only
STD Chemicals Ltd.

Label:

Salbutamol 1mg/ml Nebuliser Solution
5 ampoules

Each nebuliser contains 2.5mg / 2.5ml salbutamol (as sulphate)

FOR INHALATION USE. DO NOT INJECT

Store in the original package. The ampoules should be protected from light after removal from the foil over-wrap. Use within 3 months after opening the foil over-wrap.

Fill in use by date here. Use before: / / 

Use as directed by your doctor. Read information leaflet before use. Also contains sodium chloride, sulphuric acid for pH adjustment and water.

KEEP OUT OF THE REACH AND SIGHT OF CHILDREN.
Salbutamol 1mg/ml Nebuliser Solution

2.5 mg / 2.5 ml ampoule

For inhalation use only

20 ampoules

Each ampoule contains 2.5mg / 2.5ml salbutamol (as sulphate).
Also includes sodium chloride, sulphuric acid for pH adjustment and water.
Inhale the solution using a nebuliser as directed by your doctor.
Please read the enclosed leaflet carefully before use.

For inhalation use. DO NOT INJECT

Salbutamol 1mg/ml Nebuliser Solution

2.5 mg / 2.5 ml ampoule

Each carton contains 20 ampoules in strips of 5 ampoules

Salbutamol 1mg/ml Nebuliser Solution

2.5 mg / 2.5 ml ampoule

KEEP OUT OF THE REACH AND SIGHT OF CHILDREN.
Store in the original package. The ampoules should be protected from light after removal from the foil over-wrap. Use within 3 months after opening the foil over-wrap.
PL 36390/0036

Foil:

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Label:

Salbutamol 2mg/ml Nebuliser Solution 5 ampoules

Each nebul contains 5mg / 2.5ml salbutamol (as sulphate)

FOR INHALATION USE. DO NOT INJECT

Store in the original package. The ampoules should be protected from light after removal from the foil over-wrap. Use within 3 months after opening the foil over-wrap.

Fill in use by date here. Use before: __/__/__

Use as directed by your doctor. Read information leaflet before use.

KEEP OUT OF THE REACH AND SIGHT OF CHILDREN.
Salbutamol 2mg/ml Nebuliser Solution

5 mg / 2.5 ml ampoule

For inhalation use only

20 ampoules

Each nebuliser contains 5mg / 2.5ml salbutamol (as sulphate), also includes sodium chloride, sulphuric acid for pH adjustment and water.

Inhale the solution using a nebuliser as directed by your doctor. Please read the enclosed leaflet carefully before use.

For inhalation use, DO NOT INJECT

Distributor:
Nestle Ltd, 57 High Street,
Cuddington, Macclesfield, SK11 8JR.
PL 36390/0036

PC Holder:
STD Chemicals Ltd,
Middlemore House, Middlemore Road,
Ellesmere, Shropshire, TF10 9NW

Salbutamol 2mg/ml Nebuliser Solution

5 mg / 2.5 ml ampoule

Each carton contains
20 ampoules in strips of 5 ampoules

Salbutamol 2mg/ml Nebuliser Solution

5 mg / 2.5 ml ampoule

KEEP OUT OF THE REACH AND SIGHT OF CHILDREN.

Store in the original package. The ampoules should be protected from light after removal from the foil over-wrap. Use within 3 months after opening the foil over-wrap.