

# **PHENYLEPHRINE HYDROCHLORIDE- phenylephrine hydrochloride solution/ drops NorthStar RxLLC**

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## **HIGHLIGHTS OF PRESCRIBING INFORMATION**

**These highlights do not include all the information needed to use PHENYLEPHRINE HYDROCHLORIDE OPHTHALMIC SOLUTION, USP safely and effectively. See full prescribing information for PHENYLEPHRINE HYDROCHLORIDE OPHTHALMIC SOLUTION, USP. PHENYLEPHRINE HYDROCHLORIDE ophthalmic solution, USP 10%. Initial U.S. Approval: 1939**

## **INDICATIONS AND USAGE**

Phenylephrine Hydrochloride Ophthalmic Solution is an alpha-1 adrenergic receptor agonist indicated to dilate the pupil (1)

## **DOSAGE AND ADMINISTRATION**

For patients 1 year of age and older: (2.1)

- Apply one drop of Phenylephrine Hydrochloride Ophthalmic Solution (10% strength) to conjunctival fornix at 3 to 5 minute intervals up to a maximum of 3 drops per eye.
- To obtain a greater degree of mydriasis, use 10% strength

For pediatric patients less than 1 year of age: (2.2)

- Instill one drop of 2.5% strength to conjunctival fornix at 3 to 5 minute intervals up to a maximum of 3 drops per eye.

## **DOSAGE FORMS AND STRENGTHS**

Ophthalmic solution (sterile): (3)

- 100 mg of phenylephrine hydrochloride in one mL of solution (10%)

## **CONTRAINDICATIONS**

The 10% strength is contraindicated in:

- Patients with hypertension, or thyrotoxicosis (4.1)
- Pediatric patients less than 1 year of age due to increased risk of systemic toxicity (4.2)

## **WARNINGS AND PRECAUTIONS**

- Not for injection: Topical ophthalmic use only (5.1)
- Serious cardiovascular reactions with 10% strength: Reactions have included ventricular arrhythmias and some have been fatal. Monitor blood pressure in patients with cardiovascular disease (5.2)
- Significant elevations in blood pressure: Caution in pediatric patients less than 5 years of age, and in patients with cardiovascular disease or hyperthyroidism. In patients at high risk, monitor blood pressure post treatment (5.3)
- Rebound miosis: Reported one day after instillation (5.4)

## **ADVERSE REACTIONS**

- Ocular adverse reactions include eye pain and stinging on instillation, temporary blurred vision, and photophobia (6.1)
- Cardiovascular adverse reactions include increase in blood pressure, syncope, myocardial infarction, tachycardia, arrhythmia and subarachnoid hemorrhage (6.2)

**To report SUSPECTED ADVERSE REACTIONS, contact Northstar Rx LLC at 1-800-206-7821 or FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).**

## **DRUG INTERACTIONS**

- Atropine-like drugs: May exaggerate the adrenergic pressor response (7.1)
- Potent inhalation anesthetic agents: May potentiate cardiovascular depressant effects (7.1)

**See 17 for PATIENT COUNSELING INFORMATION.**

**Revised: 9/2024**

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\* Sections or subsections omitted from the full prescribing information are not listed.

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## **FULL PRESCRIBING INFORMATION**

### **1 INDICATIONS AND USAGE**

Phenylephrine Hydrochloride Ophthalmic Solution, USP 10%, is indicated to dilate the pupil.

### **2 DOSAGE AND ADMINISTRATION**

## **2.1 General Dosing Recommendations**

In patients 1 year of age or greater, apply one drop of phenylephrine hydrochloride ophthalmic solution 10% every 3 to 5 minutes to the conjunctival fornix as required up to a maximum of 3 drops per eye per day

In order to obtain a greater degree of mydriasis, phenylephrine hydrochloride ophthalmic solution 10% may be needed

## **2.2 Dosing in Pediatric Patients Less Than 1 Year of Age**

In pediatric patients less than 1 year of age, one drop of phenylephrine hydrochloride ophthalmic solution 2.5% should be instilled at 3 to 5 minute intervals up to a maximum of 3 drops per eye.

## **3 DOSAGE FORMS AND STRENGTHS**

Phenylephrine hydrochloride ophthalmic solution, USP 10% is a clear, colorless, to yellow colored sterile topical ophthalmic solution containing phenylephrine hydrochloride 10%.: each mL contains 100 mg of phenylephrine hydrochloride.

## **4 CONTRAINDICATIONS**

### **4.1 Cardiac and Endocrine Disease**

Phenylephrine hydrochloride ophthalmic solution 10% is contraindicated in patients with hypertension or thyrotoxicosis. Phenylephrine hydrochloride ophthalmic solution 2.5% should be used in these patients.

### **4.2 Pediatric Patients Less Than 1 Year of Age**

Phenylephrine hydrochloride ophthalmic solution 10% is contraindicated in pediatric patients less than 1 year of age due to the increased risk of systemic toxicity. Phenylephrine hydrochloride ophthalmic solution 2.5% should be used in these patients [*See Dosage and Administration (2.2)*].

## **5 WARNINGS AND PRECAUTIONS**

### **5.1 Topical Ophthalmic Use Only**

Phenylephrine hydrochloride ophthalmic solution 10% is not indicated for injection.

### **5.2 Cardiovascular Reactions**

There have been reports of serious cardiovascular reactions, including ventricular arrhythmias and myocardial infarctions, in patients using phenylephrine 10%. These episodes, some fatal, have usually occurred in patients with pre-existing cardiovascular diseases. Phenylephrine Hydrochloride Ophthalmic Solution, USP 2.5% should be used in these patients.

### **5.3 Elevation of Blood Pressure**

A significant elevation in blood pressure is not common but has been reported following conjunctival instillation of recommended doses of phenylephrine 10%. The risk is less with phenylephrine 2.5%. Caution should be exercised with the use of phenylephrine 10% in pediatric patients less than 5 years of age and patients with hyperthyroidism, or cardiovascular disease. The post-treatment blood pressure of patients with cardiac and endocrine diseases and any patients who develop symptoms should be carefully monitored.

### **5.4 Rebound Miosis**

Rebound miosis has been reported one day after receiving phenylephrine hydrochloride ophthalmic solution, and re-instillation of the drug produced a lesser mydriatic effect.

## **6 ADVERSE REACTIONS**

The following serious adverse reactions are described below and elsewhere in the labeling:

- Cardiovascular Effects [*See Warnings and Precautions (5.2)*]
- Elevation in Blood Pressure [*See Warnings and Precautions (5.3)*]

The following adverse reactions have been identified following use of phenylephrine hydrochloride ophthalmic solution. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

### **6.1 Ocular Adverse Reactions**

Eye pain and stinging on instillation, temporary blurred vision and photophobia, and conjunctival sensitization may occur.

### **6.2 Systemic Adverse Reactions**

A marked increase in blood pressure has been reported particularly, but not limited to low weight premature neonates, infants and hypertensive patients.

Cardiovascular effects which have been seen primarily in hypertensive patients following topical ocular use of phenylephrine hydrochloride ophthalmic solution 10% include marked increase in blood pressure, syncope, myocardial infarction, tachycardia, arrhythmia and subarachnoid hemorrhage [*See Warnings and Precautions (5.2 and 5.3)*].

## **7 DRUG INTERACTIONS**

### **7.1 Agents That May Exaggerate Pressor Responses**

Concomitant use of phenylephrine and atropine may enhance the pressor effects and induce tachycardia in some patients. Phenylephrine may potentiate the cardiovascular depressant effects of some inhalation anesthetic agents.

## 8 USE IN SPECIFIC POPULATIONS

### 8.1 Pregnancy

Animal reproduction studies have not been conducted with topical phenylephrine. It is also not known whether phenylephrine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Phenylephrine hydrochloride should be given to a pregnant woman only if clearly needed.

### 8.3 Nursing Mothers

It is not known whether this drug is excreted in human breast milk. Because many drugs are excreted in human milk, caution should be exercised when phenylephrine hydrochloride ophthalmic solution 10% is administered to a nursing woman.

### 8.4 Pediatric Use

Phenylephrine hydrochloride ophthalmic solution 10% is contraindicated in pediatric patients less than 1 year of age [See *Contraindications (4.2)*].

### 8.5 Geriatric Use

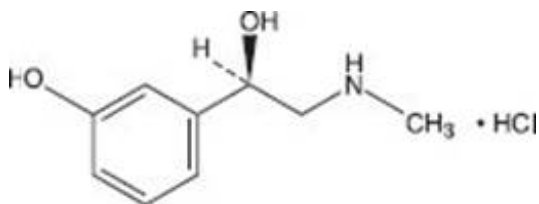
No overall differences in safety and effectiveness have been observed between elderly and younger adult patients.

## 10 OVERDOSAGE

Overdosage of phenylephrine may cause a rapid rise in blood pressure. It may also cause headache, anxiety, nausea, and vomiting, and ventricular arrhythmias. Prompt injection of a rapidly acting alpha-adrenergic blocking agent such as phentolamine has been recommended.

## 11 DESCRIPTION

Phenylephrine Hydrochloride Ophthalmic Solution, USP is a sterile, clear, colorless to yellow color solution, topical  $\alpha$ -adrenergic agonist for ophthalmic use. The active ingredient is represented by the chemical structure



Chemical Name: (R)-3-hydroxy- $\alpha$ [(methylamino)methyl]benzenemethanol hydrochloride.

Molecular Formula:  $C_9H_{13}NO_2 \cdot HCl$

Molecular Weight: 203.67 g/mol

Each mL of Phenylephrine Hydrochloride Ophthalmic Solution, USP 10% contains:

ACTIVE: Phenylephrine Hydrochloride 100 mg (10%); INACTIVES: Sodium Phosphate Monobasic, Sodium Phosphate Dibasic, Water for Injection. Phosphoric Acid and/or Sodium Hydroxide may be added to adjust pH (4.0 to 7.5). The solution has a tonicity of 985 mOsm/kg; PRESERVATIVE: Benzalkonium Chloride 0.1 mg (0.01%).

## **12 CLINICAL PHARMACOLOGY**

### **12.1 Mechanism of Action**

Phenylephrine hydrochloride is an  $\alpha$ -1 adrenergic agonist drug that is used in ophthalmology mainly for its mydriatic effect. After topical application to the conjunctiva, phenylephrine acts directly on  $\alpha$ -adrenergic receptors in the eye, producing contraction of the dilator muscle of the pupil and constriction of the arterioles in the conjunctiva.

### **12.2 Pharmacodynamics**

Maximal mydriasis occurs in 20 to 90 minutes with recovery after 3 to 8 hours.

Systemic absorption of sufficient quantities of phenylephrine may lead to systemic  $\alpha$ -adrenergic effects, such as rise in blood pressure which may be accompanied by a reflex atropine-sensitive bradycardia.

### **12.3 Pharmacokinetics**

The systemic exposure following topical administration of phenylephrine hydrochloride ophthalmic solution has not been studied. A higher systemic absorption is expected for the 10% solution than the 2.5% solution and when the corneal barrier function is compromised.

## **14 CLINICAL STUDIES**

Pupillary dilation following topical administration of phenylephrine hydrochloride ophthalmic solution has been demonstrated in controlled clinical studies in adults and pediatric patients with different levels of iris pigmentation. Pupil movement is generally seen within 15 minutes, maximal mydriasis between 20 to 90 minutes and recovery after 3 to 8 hours. Darker irides tend to dilate slower than lighter irides.

## **16 HOW SUPPLIED/STORAGE AND HANDLING**

Phenylephrine Hydrochloride Ophthalmic Solution, USP 10% is supplied as a sterile, clear, colorless to yellow color, aqueous, topical ophthalmic solution in an opaque, white low density polyethylene (LDPE) bottle with a natural LDPE dropper tip and red cap in the following sizes:

NDC 72603-530-01      5 mL in 10 mL bottle

After opening, Phenylephrine Hydrochloride Ophthalmic Solution, USP can be used until the expiration date on the bottle.

**Storage:** Store at 20° to 25°C (68° to 77°F). See USP Controlled room temperature. Keep container tightly closed. Protect from light and excessive heat.

Do not use if solution is brown or contains precipitate.

## 17 PATIENT COUNSELING INFORMATION

Advise patients not to touch the dropper tip to any surface as this may contaminate the solution. Inform patients that they may experience sensitivity to light and should protect their eyes in bright illumination while their pupils are dilated.

Manufactured for:

Northstar Rx LLC

Memphis, 1N 38141.

Toll-Free: 1-800-206-7821

Manufactured by:

Mankind Pharma Limited

Paonta Sahib, Sirmaur

Himachal Pradesh 173025, India

Issued: July 2024, V-01

**NDC 72603-530-01**

**Phenylephrine**

**Hydrochloride Ophthalmic**

**Solution, USP**

**10%**

**For Topical Application in the Eye.**

**Not for Injection**

**Rx only**

**5 mL**

The image shows a product label for Phenylephrine Hydrochloride Ophthalmic Solution, USP 10%. The label is white with blue and red accents. It includes the NDC number 72603-530-01, the product name, concentration (10%), and volume (5 mL). It also features a barcode, a warning to not use if the seal is broken, and manufacturing information. A pink arrow points to the bottom right corner of the label.

**Rx only**

NDC 72603-530-01

**Phenylephrine Hydrochloride  
Ophthalmic Solution, USP**

**10%**

For Topical Application in the Eye.  
Not for Injection

5 mL

**NORTHSTAR<sup>®</sup>**

8  
7 2603 153001

Each mL contains: **Active:** Phenylephrine Hydrochloride USP 100 mg (10%). **Preservative:** Benzalkonium Chloride 0.1 mg (0.01%). **Usual Dosage:** See package insert for dosage information. **Storage:** Store at 20°C to 25°C (68°F to 77°F). See USP Controlled room temperature. Keep container tightly closed. Protect from light and excessive heat. Do not use if solution is brown or contains a precipitate.

**Note:** Bottle filled to 1/2 capacity for proper drop control.

**DO NOT USE IF TAMPER-EVIDENT SEAL IS BROKEN OR MISSING.**

After opening, phenylephrine HCl Ophthalmic Solution, USP can be used until the expiration date on the bottle.

Mfd for: Northstar Rx LLC  
Memphis, TN 38141.

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Code No.: HP/Drugs/N-MB/17/195

EXP

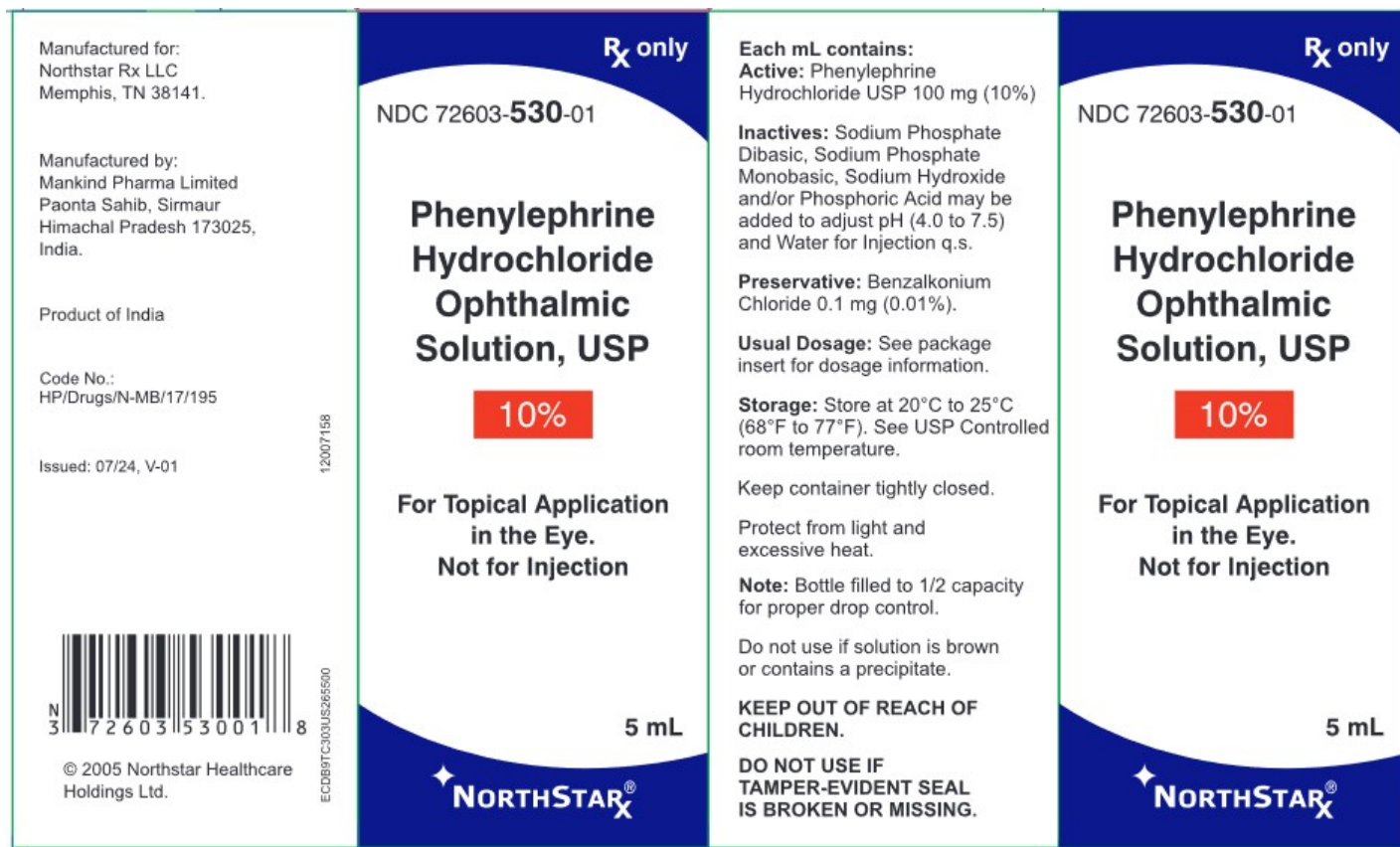
LOT

ECDB9TL303US265400 Issued: 07/24,V-01

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**NDC 72603-530-01**

**Phenylephrine  
Hydrochloride Ophthalmic  
Solution, USP  
10%  
For Topical Application in the Eye.  
Not for Injection  
Rx only  
5 mL**



**PHENYLEPHRINE HYDROCHLORIDE**

phenylephrine hydrochloride solution/ drops

**Product Information**

<b>Product Type</b>	HUMAN PRESCRIPTION DRUG	<b>Item Code (Source)</b>	NDC:72603-530
<b>Route of Administration</b>	OPHTHALMIC		

**Active Ingredient/Active Moiety**

Ingredient Name	Basis of Strength	Strength
PHENYLEPHRINE HYDROCHLORIDE (UNII: 04JA59TNSJ) (PHENYLEPHRINE -	PHENYLEPHRINE	100 mg



UNII:1WS297W6MV)	HYDROCHLORIDE	in 1 mL
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### Inactive Ingredients

Ingredient Name	Strength
<b>BENZALKONIUM CHLORIDE</b> (UNII: F5UM2KM3W7)	
<b>PHOSPHORIC ACID</b> (UNII: E4GA8884NN)	
<b>SODIUM HYDROXIDE</b> (UNII: 55X04QC32I)	
<b>SODIUM PHOSPHATE, DIBASIC, ANHYDROUS</b> (UNII: 22ADO53M6F)	
<b>SODIUM PHOSPHATE, MONOBASIC, ANHYDROUS</b> (UNII: KH7I04HPUU)	
<b>WATER</b> (UNII: 059QF0K00R)	

### Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72603-530-01	1 in 1 CARTON	10/01/2024	
1		5 mL in 1 BOTTLE, DROPPER; Type 9: Other Type of Part 3 Combination Product (e.g., Drug/Device/Biological Product)		

### Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA216496	10/01/2024	

**Labeler** - NorthStar RxLLC (830546433)

**Registrant** - Mankind Pharma Limited (915834068)

### Establishment

Name	Address	ID/FEI	Business Operations
Mankind Pharma Limited		916512493	MANUFACTURE(72603-530) , ANALYSIS(72603-530) , PACK(72603-530)

Revised: 9/2024

NorthStar RxLLC