PRESCRIBING INFORMATION

Pr PYRIDIUM Phenazopyridine Hydrochloride Tablets USP

100 mg and 200 mg

Urinary Tract Analgesic

Searchlight Pharma Inc. 1600 Notre-Dame West, Suite 312 Montreal, Quebec H3J 1M1

Submission Control No.: 267654

Date of Preparation: OCT 24, 2022

TABLE OF CONTENTS

PART I: HEALTH PROFESSIONAL INFORMATION	3
SUMMARY PRODUCT INFORMATION	
INDICATIONS AND CLINICAL USE	3
CONTRAINDICATIONS	
WARNINGS AND PRECAUTIONS	
ADVERSE REACTIONS	
DRUG INTERACTIONS	
DOSAGE AND ADMINISTRATION	
OVERDOSAGE	8
ACTION AND CLINICAL PHARMACOLOGY	
STORAGE AND STABILITY	
DOSAGE FORMS, COMPOSITION AND PACKAGING	
PART II: SCIENTIFIC INFORMATION	10
PHARMACEUTICAL INFORMATION	10
DETAILED PHARMACOLOGY	
TOXICOLOGY	10
REFERENCES	12
PART III: CONSUMER INFORMATION	13

Pr PYRIDIUM® Phenazopyridine Hydrochloride Tablets USP

PART I: HEALTH PROFESSIONAL INFORMATION

SUMMARY PRODUCT INFORMATION

Route of Administration	Dosage Form / Strength	Non-medicinal Ingredients
oral	Tablet 100 mg	Core: Lactose monohydrate, pregelatinized corn starch, arabic gum, magnesium stearate, Aerosil 200, sodium carboxymethyl starch.
		Coating: OPAGLOS® NA-7150, isopropylic alcohol, talc, calcium carbonate, purified water, saccharose, SICOVIT® BROWN 75, OPAGLOS® 6000 OFF-WHITE.
oral	Tablet 200 mg	Carnauba wax, cornstarch, D&C red No. 7, FD&C blue No. 2, FD&C yellow No. 6, gelatin, lactose, magnesium stearate, methylcellulose, sodium starch glycolate, sucrose, titanium dioxide and white wax.

INDICATIONS AND CLINICAL USE

Adults (≥18 years old)

PYRIDIUM® (Phenazopyridine Hydrochloride) is indicated for the symptomatic relief of pain, burning, urgency, frequency, and other discomforts resulting from irritation of the mucosa of the lower urinary tract caused by infection, trauma, surgery, endoscopic procedures, or the passage of sounds or catheters.

Phenazopyridine is compatible with antimicrobial therapy and can help relieve pain and discomfort during the interval before an antimicrobial therapy controls the infection.

Treatment with phenazopyridine should not exceed 2 days because of potential organ damage. (See Warnings and Precautions)

Geriatrics (>65 years old): No data are available

Pediatrics (< 18 years old): No data are available

CONTRAINDICATIONS

PYRIDIUM® is contraindicated in:

- patients who are hypersensitive to the drug or its ingredients.
- patients with renal insufficiency or any liver disease.

WARNINGS AND PRECAUTIONS

Serious Warnings and Precautions

A yellowish color of the skin or sclerae may indicate accumulation of phenazopyridine resulting from impaired renal function or overdose or taking the drug for more than two days, and necessitates discontinuance of the drug. It should be noted that a decline in renal function is common in elderly patients. Phenazopyridine produces an orange to red color in the urine and feces, and may cause staining. Phenazopyridine may cause discoloration of body fluids and staining of contact lenses. Phenazopyridine may mask pathological conditions and interfere with laboratory test values using colorimetric, spectrophotometric or fluorometric analysis methods.

Cautious use in patients with G-6-PD deficiency is advised since these patients are susceptible to oxidative hemolysis and may have greater potential to develop hemolytic anemia.

Patient Counselling by the physician:

- The patient should be advised to take phenazopyridine with or following food or after eating a snack to reduce stomach upset.
- The patient should be advised that phenazopyridine produces an orange to red color in the urine and feces, and may cause staining.
- The patient should be advised that treatment with Pyridium[®] should not exceed 2 days.
- The patient should be advised to discontinue Pyridium® and contact their doctor immediately if they notice a yellowish color of the skin or sclerae (white of the eye).

Carcinogenesis and Mutagenesis

Long-term administration of phenazopyridine has been associated with tumors of the large intestine in rats and of the liver in mice. Available epidemiological data are insufficient to evaluate the carcinogenicity of phenazopyridine in humans. In vitro studies indicate that phenazopyridine in the presence of metabolic activation is mutagenic in bacteria and mutagenic and clastogenic in mammalian cells.

Striated muscles

Treatment with phenazopyridine should not exceed 2 days. A metabolite of phenazopyridine (2,3,6-triaminopyridine) caused extensive injury to the skeletal muscle and, to a lesser extent, the heart muscle in rats in a toxicology study. Caution is advised when giving phenazopyridine to patients with a heart condition or to patients with any neuromuscular condition.

Hepatic/Biliary/Pancreatic

Phenazopyridine is contraindicated in patients with any liver disease. (See Contraindications).

Renal

Phenazopyridine is contraindicated in patients with renal insufficiency. The decline in renal function associated with advanced age should be kept in mind. There are no data available in elderly patients.

Phenazopyridine produces an orange to red color in the urine. (See Serious Warnings and Precautions).

Hematologic

Patients with G-6-PD deficiency are susceptible to oxidative hemolysis and may have greater potential to develop hemolytic anemia (See **Serious Warnings and Precautions**). Phenazopyridine should not be used in patients with G-6-PD Mediterranean as hemolysis may occur at normal doses in these patients.

Infection

The use of phenazopyridine for relief of symptoms should not delay definitive diagnosis and treatment of causative conditions. The drug should be used for symptomatic relief of pain and not as a substitute for specific surgery or antimicrobial therapy.

Ophthalmologic

A yellowish color of sclerae (white of the eye) may indicate accumulation of phenazopyridine resulting from impaired renal function or overdose or taking for more than two days, and necessitates discontinuance of the drug. (See **Serious Warnings and Precautions**).

Skin

A yellowish color of the skin may indicate accumulation of phenazopyridine resulting from impaired renal function or overdose or taking for more than two days, and necessitates discontinuance of the drug. (See Serious Warnings and Precautions).

Special Populations

Pregnant Women

Reproductive studies with phenazopyridine (in combination with sulfacytine) in rats given up to 110 mg/kg/day and in rabbits given up to 39 mg/kg/day during organogenesis revealed no evidence of harm to offspring.

One very limited prospective study in humans demonstrated that phenazopyridine traverses the placenta into the fetal compartment. There are no adequate and well-controlled studies in pregnant women. Therefore, phenazopyridine should be used in pregnant women only if the benefit clearly outweighs the risk.

Nursing Women

It is unknown if the drug is excreted in human milk. Because many drugs are excreted in human milk, precaution should be exercised.

Pediatrics (<18 years old)

Safety and effectiveness in children below the age of 18 have not been established.

Geriatrics (> 65 years old)

Safety and effectiveness in elderly patients above 65 have not been established.

ADVERSE REACTIONS

Adverse Drug Reaction Overview

Gastrointestinal: nausea, vomiting and diarrhea.

Nervous System: headache, aseptic meningitis.

Integumentary: rash, pruritus, discoloration, jaundice.

Renal: renal toxicity usually associated with overdose, renal calculi.

Hematologic: methemoglobinemia, hemolytic anemia, potential hemolytic agent in G-6-PD deficiency, sulfhemoglobinemia, neutropenia, leukopenia, pancytopenia.

Body as a Whole: anaphylactoid-like reaction and hypersensitivity hepatitis.

Special Senses: visual disturbances, eye irritation, ear pain, reversible loss of color vision.

Other: hepatic toxicity usually associated with overdose, discoloration of body fluids.

DRUG INTERACTIONS

Drug-Drug Interactions

The medical literature suggests that no significant interactions have been reported besides the one mentioned below.

Table 1 Established or Potential Drug-Drug Interactions

Proper name	Ref	Effect	Clinical comment
Ciprofloxacin	Theoretical	Ciprofloxacin bioavailability	Caution is warranted

Drug-Laboratory Test Interactions

Due to its properties as an azo dye, Phenazopyridine HCl may interfere with urinalysis based on spectrometry or color reactions. (See Warnings and Precautions).

Phenazopyridine may interfere with the phenolsulfonphthalein (PSP) excretion test of kidney function; butanol may be used to extract phenazopyridine from the final alkaline urine dilution to give accurate results.

Phenazopyridine may interfere with urinary glucose tests. Phenazopyridine may interfere with urinary ketone tests using sodium nitroprusside or Gerhardt ferric chloride by producing interfering colors. Phenazopyridine may interfere with urinary urobilinogen determinations because of color interference with Ehrlich's reagent. Phenazopyridine may produce falsely elevated readings in the spectrophotofluorimetric screening tests and assays for porphyrins.

Phenazopyridine may interfere with laboratory test values using colorimetric, photometric or fluorometric analysis methods. Altered urine laboratory test values may include ketone (sodium nitroprusside), bilirubin (foam test, talc-disk-Fouchet-spot test, Franklin's tablet-Fouchet test, p-nitrobenzene diazonium p-toluene sulfonate reagent), diacetic acid (Gerhardt ferric chloride test), free hydrochloric acid, glucose (glucose oxidase tests), 17-hydroxycorticosteroids (modified Glenn-Nelson), 17-ketosteroids (Holtorff Koch modification of Zimmerman), porphyrins, albumin (discolors bromophenol blue test areas of commercial reagent strips, nitric acid ring test), phenolsulfophthalein, urobilinogen (color interference with Ehrlich's reagent), and urinalysis (spectrophotometric or color-based tests). Phenazopyridine also imparts an orange-red color to stools which may interfere with color tests.

DOSAGE AND ADMINISTRATION

Recommended Dose and Dosage Adjustment

Adults: 200 mg 3 times daily after meals.

When used concomitantly with an antibacterial agent for the treatment of a urinary tract infection, the administration of phenazopyridine should **not** exceed 2 days. If symptoms persist, the patient should be reevaluated.

Missed Dose

If a dose is missed, patients should take it as soon as they remember. If it is near the time of the next dose, patients should skip the missed dose and resume their usual dosing schedule. Patients should not double the dose to catch up.

Administration

Administration is by the oral route, preferably after meals.

OVERDOSAGE

For management of a suspected drug overdose contact your regional Poison Control Centre.

Exceeding the recommended dose in patients with normal renal function or administering the recommended dose to patients with reduced renal function (common in elderly patients) may lead to increased serum levels and toxic reactions.

Methemoglobinemia generally follows a massive, acute overdose. Oxidative Heinz body hemolytic anemia also may occur, and "bite cells" (degmacytes) may be present in a chronic overdosage situation. Red blood cell G-6-PD deficiency may predispose to hemolysis; however, hemolysis may occur at normal doses in patients with G-6-PD Mediterranean. Renal toxicity and occasional failure and hepatic impairment may also occur.

Treatment: Treatment is symptomatic and supportive. Methylene blue, 1 to 2 mg/kg/dose given i.v. as a 1% solution as needed, should cause prompt reduction of the methemoglobinemia and disappearance of the cyanosis which is an aid in diagnosis.

ACTION AND CLINICAL PHARMACOLOGY

Mechanism of Action

Phenazopyridine is excreted in the urine where it exerts a topical analgesic effect on the mucosa of the lower urinary tract. This action helps to relieve pain, burning, urgency and frequency. The precise mechanism of action is unknown.

Pharmacokinetics

The pharmacokinetic properties of phenazopyridine have not been fully elucidated. Phenazopyridine and its metabolites are rapidly excreted by the kidneys. In a small number of healthy subjects, 90% of a 600 mg/day oral dose of phenazopyridine was eliminated in the urine in 24 hours, 41% as unchanged drug and 49% as metabolites.

STORAGE AND STABILITY

Store at controlled room temperature, 15-30°C.

DOSAGE FORMS, COMPOSITION AND PACKAGING

Composition

PYRIDIUM® 100 mg tablets: Each light brown, round, biconvex coated tablet, contains: phenazopyridine HCl 100 mg.

Non-medicinal ingredients:

Core: Lactose monohydrate, pregelatinized corn starch, arabic gum, magnesium stearate, Aerosil 200, sodium carboxymethyl starch.

Coating: OPAGLOS® NA-7150, isopropylic alcohol, talc, calcium carbonate, purified water, saccharose, SICOVIT® BROWN 75, OPAGLOS® 6000 OFF-WHITE.

Packaged in blisters of 10 tablets. Each box contains 30 tablets.

PYRIDIUM® 200 mg tablets: Each reddish brown, coated tablet, imprinted with a white PD 181 monogram on one side, contains: phenazopyridine HCl 200 mg.

Non-medicinal ingredients:

Carnauba wax, cornstarch, D&C red No. 7, FD&C blue No. 2, FD&C yellow No. 6, gelatin, lactose, magnesium stearate, methylcellulose, sodium starch glycolate, sucrose, titanium dioxide and white wax.

Packaged in bottles of 100 tablets.

PART II: SCIENTIFIC INFORMATION

PHARMACEUTICAL INFORMATION

Drug Substance

Proper Name: Phenazopyridine hydrochloride

Chemical Name: 2, 6-pyridinediamine, 3-(phenylazo)-, monohydrochloride.

Empirical Formula: C11H11N5 ●HCl

Molecular Weight: 249.70

Structural Formula:

Physicochemical properties: Brick-red microcrystals with a slight violet luster or a purple powder. Slightly bitter taste.

DETAILED PHARMACOLOGY

Phenazopyridine Hydrochloride exerts a topical analgesic effect on the mucosa of the lower urinary tract. This action helps to relieve pain, burning, urgency and frequency. The precise mechanism of action is not known.

Phenazopyridine HCl is rapidly excreted by the kidneys, with as much as 65% of an oral dose being excreted unchanged in the urine.

TOXICOLOGY

Toxic reactions to phenazopyridine, an azo dye, appear to be rare. Metabolism of phenazopyridine results in the formation of large quantities of aniline, and the production of methemoglobinemia by phenazopyridine is probably due to the aniline metabolites. Because the azo dye is deposited in the skin, yellow skin pigmentation has been noted in cases of azo dye intoxication.

The oral administration of phenazopyridine hydrochloride to dogs showed that the drug accumulated selectively in lacrimal and nictitans glands and the glands of Moll, and caused a reduction of tear flow. The drug or its metabolic derivative was detectable by light microscopy as an accumulation in the cytoplasm within 48 hours after drug administration. Electron microscopy showed that the product detected was localized in secretory granules. The results suggest that phenazopyridine hydrochloride affects the synthesis of secretory granules and causes progressive destruction of affected cells.

REFERENCES

- 1: Alano FA Jr, Webster GD Jr. Acute renal failure and pigmentation due to phenazopyridine (Pyridium). Ann Intern Med. 1970 Jan;72(1):89-91.
- 2: Cahan DH. Phenazopyridine overdose and renal failure. JAMA. 1979 Jun 29;241(26):2785.
- 3: Cohen BL, Bovasso GJ Jr. Acquired methemoglobinemia and hemolytic anemia following excessive pyridium (phenazopyridine hydrochloride) ingestion. Clin Pediatr (Phila). 1971 Sep;10(9):537-40.
- 4: Eisinger AJ, Jones R. Phenazopyridine-hydrochloride haemolysis. Lancet. 1969 Jan 18;1(7586):151.
- 5: Goldfinger SE, Marx S. Hypersensitivity hepatitis due to phenazopyridine hydrochloride. N Engl J Med. 1972 May 18;286(20):1090-1.
- 6: Greenberg MS, wong H. methemoglobinemia and heinz body hemolytic anemia due to phenazopyridine hydrochloride. N Engl J Med. 1964 Aug 27;271:431-5.
- 7: Herlihy TE. Phenazopyridine and aseptic meningitis. Ann Intern Med. 1987 Jan;106(1):172-3.
- 8: Hollifield RD, Conklin JD. A method for determining nitrofurantoin in urine in the presence of phenazopyridine hydrochloride and its metabolites. Clin Chem. 1970 Apr;16(4):335-8.
- 9: Hood JW, Toth WN. Jaundice caused by phenazopyridine hydrochloride. JAMA. 1966 Dec 26;198(13):1366-7.
- 10: Johnson WJ, Chartrand A. The metabolism and excretion of phenazopyridine hydrochloride in animals and man. Toxicol Appl Pharmacol. 1976 Aug;37(2):371-6.
- 11: Marcelín-Jiménez G, Angeles AP, Martínez-Rossier L, Fernández S A. Ciprofloxacin bioavailability is enhanced by oral co-administration with phenazopyridine: a pharmacokinetic study in a Mexican population. Clin Drug Investig. 2006;26(6):323-8.
- 12: McEwen J, Paterson C. Drugs and false-positive screening tests for porphyria. Br Med J. 1972 Feb 12;1(5797):421.
- 13: Meshali MM, El-Sabbagh H. Effect of adsorption of phenazopyridine hydrochloride on its bioavailability in human. Pharmazie. 1981 Dec;36(12):867-8.
- 14: Randazzo GP, Ford EA, Glauser FL. Methemoglobinemia caused by acute overdosage of phenazopyridine. West J Med. 1975 May;122(5):427-9.
- 15: Tishler M, Abramov A. Phenazopyridine-induced hemolytic anemia in a patientwith G6PD deficiency. Acta Haematol. 1983;70(3):208-9.
- 16: Wander HJ, Pascoe DJ. Phenylazopyridine hydrochloride poisoning. report of case and review of literature. Am J Dis Child. 1965 Jul;110:105-7.
- 17: Zelenitsky SA, Zhanel GG. Phenazopyridine in urinary tract infections. Ann Pharmacother. 1996 Jul-Aug;30(7-8):866-8.

PART III: CONSUMER INFORMATION

Pr PYRIDIUM ®

Phenazopyridine Hydrochloride Tablets USP

Read this information carefully before you start taking PYRIDIUM[®]. Talk to your healthcare professional about your medical condition and treatment and ask if there is any new information about PYRIDIUM[®].

ABOUT THIS MEDICATION

What is PYRIDIUM® used for?

PYRIDIUM® is used for one or more of the following medical conditions:

 Pain, burning, urgency, frequency, and other discomforts resulting from lower urinary tract caused by infection, trauma, surgery, endoscopic procedures, or the passage of sounds or catheters.

PYRIDIUM[®] is indicated for short-term use and can only relieve symptoms; it is not a treatment for the underlying cause of the symptoms.

How does PYRIDIUM® work?

PYRIDIUM® is excreted in the urine where it exerts a topical analgesic effect on the mucosa of the lower urinary tract. This action helps to relieve pain, burning, urgency and frequency. The precise mechanism of action is unknown.

What are the ingredients in PYRIDIUM®?

Medicinal ingredient:

Phenazopyridine Hydrochloride.

Non-medicinal ingredients: PYRIDIUM® 100mg tablets:

Aerosil 200, arabic gum, calcium carbonate, pregelatinized corn starch, lactose monohydrate, isopropylic alcohol, magnesium stearate, sodium carboxymethyl starch, OPAGLOS® NA-7150, OPAGLOS® 6000 OFF-WHITE, purified water, saccharose, SICOVIT® BROWN 75, talc.

PYRIDIUM® 200mg tablets:

Carnauba wax, cornstarch, D&C red No. 7, FD&C blue No. 2, FD&C yellow No. 6, gelatin, lactose, magnesium stearate, methylcellulose, sodium starch glycolate, sucrose, titanium dioxide and white wax.

PYRIDIUM® comes in the following dosage form:

As tablets containing 100 mg or 200 mg of phenazopyridine hydrochloride.

WARNING AND PRECAUTIONS

Do not use PYRIDIUM® if you:

- are allergic to this drug or its ingredients
- have renal insufficiency
- have severe liver disease

PYRIDIUM® should NOT be used in patients under 18 years of age since the safety and effectiveness have NOT been established.

Before taking this medication, tell your health care provider if you have any of the following:

- G-6-PD deficiency
- renal insufficiency
- severe liver disease
- any other medical problem

Other warnings you should know about:

Phenazopyridine produces an orange to red color in the urine and feces, and may cause staining. Staining of contact lenses has also been reported. If you are older, your doctor will watch you more closely, since the kidneys work less effectively with age.

If your skin or the whites of your eyes develop a yellowish tone, it may indicate that your kidneys are not eliminating the medication as they should. STOP TAKING THE DRUG AND NOTIFY YOUR DOCTOR IMMEDIATELY.

INTERACTIONS WITH THIS MEDICATION

Tell your healthcare professional about all the medicines you take, including any drugs, vitamins, minerals, natural supplements or alternative medicines.

The following medicines may interact with PYRIDIUM® (NOT a complete list):

· Ciprofloxacin"

PROPER USE OF THIS MEDICATION

How to take PYRIDIUM®:

- Swallow PYRIDIUM® tablets with water.
- Take PYRIDIUM® after meals.
- Follow all instructions given to you by your healthcare professional.

This medication has been prescribed specifically for you. Do NOT give it to anyone else. It may harm them, even if their symptoms seem to be similar to yours.

Usual dose of PYRIDIUM®:

200 mg 3 times daily after meals.

Take PYRIDIUM® only as directed by your healthcare professional.

Do NOT take more of it, do NOT take it more often and do NOT take it for a longer period of time than your healthcare professional recommended. If possible, you should take the lowest dose of this medication for the shortest time period.

Taking too much PYRIDIUM® may increase your

Taking too much PYRIDIUM® may increase your chances of unwanted and sometimes dangerous side effects, especially if you are elderly, or have other diseases.

If you will be using PYRIDIUM® for more than 2 days, see your healthcare professional regularly to discuss whether this medicine is working for you and if it is causing you any unwanted effects.

Overdose

If you think you have received too much PYRIDIUM®, contact your healthcare professional, hospital emergency department or regional poison control centre immediately, even if there are no symptoms.

Missed Dose

- If you miss a dose of PYRIDIUM®, take it as soon as you remember.
- If it is almost time for your next dose, skip the missed dose and take your next scheduled dose. Never take a double dose to make up for a missed dose.

What are possible side effects from using PYRIDIUM®?

These are not all the possible side effects you may feel when taking PYRIDIUM®.

PYRIDIUM® may cause some side effects, especially when used for a long time or in large doses. When these side effects occur, you may require medical attention. Report all symptoms or side effects to your healthcare professional.

Check with your healthcare professional IMMEDIATELY if you develop chills, fever, muscle aches or pains, or other flu-like symptoms, swelling of the neck and throat and tongue, especially if they occur before or together with a skin rash. These symptoms may be the first signs of a **SERIOUS ALLERGIC REACTION to this medication.**

SERIOUS SIDE EFFECTS, HOW OFTEN THEY HAPPEN AND WHAT TO DO ABOUT THEM				
Symptom	STOP taking PYRIDIUM® and talk to your physician or pharmacist	STOP taking PYRIDIUM® and get emergency medical attention IMMEDIATELY		
RARE				
Headaches, stiff neck		~		
Shortness of breath, any trouble breathing or chest tightness, wheezing		~		
Hives, itching, skin rash or swelling of the neck, throat or tongue		~		
Blurred vision, or any visual disturbance	~			
Diarrhea, nausea and vomiting	V			
Yellow discoloration of the skin or whites of the eyes with or without itchy skin	~			

If you have a troublesome symptom or side effect that is not listed here or becomes bad enough to interfere with your daily activities, talk to your healthcare professional.

Reporting Side Effects

You can report any suspected side effects associated with the use of health products to Health Canada by:

- Visiting the Web page on Adverse Reaction Reporting (http://www.hc-sc.gc.ca/dhp-mps/medeff/report-declaration/index-eng.php) for information on how to report online, by mail or by fax; or
- Calling toll-free at 1-866-234-2345.

NOTE: Contact your health professional if you need information about how to manage your side effects. The Canada Vigilance Program does not provide medical advice.

HOW TO STORE IT

Keep the tablets in a dry place at normal room temperature (below 30°C) in the packaging that they come in.

Keep out of sight and reach of children.

MORE INFORMATION

If you want more information about PYRIDIUM®:

- Talk to your healthcare professional.
- Find the full prescribing information that is prepared for healthcare professionals and includes this Patient Medication Information by visiting the Health Canada website (http://hc-sc.gc.ca/indexeng.php); the manufacturer's website (www.searchlightpharma.com), or by calling 1-647-945-9762.

This leaflet was prepared by Searchlight Pharma Inc. Last revised: October 24, 2022