SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE MEDICINAL PRODUCT

Phenoxymethylpenicillin 125mg/5ml Granules for Oral Solution

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Phenoxymethylpenicillin Potassium
138.59 mg equivalent to 125mg phenoxymethylpenicillin per 5ml of reconstituted product

Excipients: Each 5 ml contains 2.61g of sucrose, 1.2mg of ponceau 4R (E124)
For full list of excipients, see section 6.1

3 PHARMACEUTICAL FORM

Granules for oral solution

Light pink powder with an odour of strawberry

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Phenoxymethylpenicillin and potassium phenoxymethylpenicillin are indicated in the treatment of mild to moderately severe infections associated with micro-organisms whose susceptibility to penicillin is within the range of serum levels attained with these dosage forms. The following infections will usually respond to adequate doses:

Streptococcal infections (without bacteraemia): Mild to moderate infections of the upper respiratory tract, scarlet fever and mild erysipelas.

Pneumococcal infections: Mild to moderately severe infections of the respiratory tract.

Staphylococcal infections sensitive to penicillin: Mild infections of the skin and soft tissues.

Fusospirochaetosis (Vincent's gingivitis and pharyngitis): Mild to moderately severe infections of the oropharynx usually respond to therapy with oral penicillin.

Prophylactic use: Prophylaxis with oral penicillin has proved effective in preventing reccurrence of rheumatic fever and chorea.

Patients with a past history of rheumatic fever receiving continuous prophylaxis may harbour penicillin-resistant organisms. In these patients, the use of another prophylactic agent should be considered.

Note: severe empyema, bacteraemia, pericarditis, meningitis and arthritis should not be treated with Phenoxymethylpenicillin during the acute phase.

Consideration should be given to official guidance on the appropriate use of antibacterial agent.

4.2 Posology and method of administration

Posology

Adults: 125 – 500 mg every 4 – 6 hours depending on the severity of the condition.

***Prophylactic* use**: 125 mg twice daily is recommended for long term prophylaxis of rheumatic fever.

Children: Up to 1 year: 62.5 mg 6 hourly

1 – 5 years: 125 mg 6 hourly

6 – 12 years: 250 mg 6 hourly

The Elderly: As for adults. Reduce dosage if renal function is markedly impaired.

Each dose should be administered half an hour before or at least 2 hours after a meal.

To avoid late complications (rheumatic fever), infections with beta-haemolytic streptococcal infection, should be for 10 days,

The treatment of acute otitis media with penicillin V should be limited to five days. However, 5-10 days treatment may be recommended in patients with potential for complications.

Method of administration : Oral use

For instructions on dilution of the product before administration, see section 6.6.

4.3 Contraindications

Hypersensitivity to any penicillin or to any of the excipients listed in section 6.1 and should be used with caution in patients with known histories of allergy.

4.4 Special warnings and precautions for use

Before initiation of penicillin therapy, careful enquiry should be made concerning previous hypersensitivity reaction to penicillin, cephalosporins or other drugs. Fatal anaphylaxis has been observed with oral penicillin.

Patients suffering from severe gastrointestinal impairments accompanied by vomiting and diarrhoea should not be treated with penicillin V, because sufficient absorption is not ensured. (In those cases a parenteral administration is recommended, e.g. with benzyl penicillin or another adequate antibiotic).

Penicillin should be used with caution in individuals with histories of significant allergies and/or asthma.

All degrees of hypersensitivity, including fatal anaphylaxis, have been observed with oral penicillin. These reactions are more likely to occur in individuals with a history of sensitivity to penicillins, cephalosporins and other allergens.

Enquiries should be made for such a history before therapy with a penicillin is begun. If any allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents (e.g. Adrenaline and other pressor amines, antihistamines and corticosteroids).

Oral therapy should not be relied upon for patients with severe illness, or with nausea, vomiting, gastric dilation, achalasia or intestinal hypermotility.

Occasionally patients do not absorb therapeutic amounts of orally administered penicillin.

Administer with caution in the presence of markedly impaired renal function, as safe dosage may be lower than the usually recommended doses.

Streptococcal infections should be treated for a minimum of 10 days, and post-therapy cultures should be performed to confirm the eradication of the organisms.

Prolonged use of antibiotics may result in the development of superinfection due to organisms resistant to that anti-infective including Pseudomonas and Candida. If superinfection occurs, appropriate measures should be taken.

In patients undergoing long-term penicillin V treatment the complete and differential blood count, as well as the liver and kidney function, should be monitored.

Cases of Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) have been reported with the use of penicillins. These are serious and potentially life threatening cutaneous conditions. Patients should be advised of the signs and symptoms of SJS and TEN (e.g., progressive skin rash often with blisters or mucosal lesions) and instructed to discontinue use immediately and seek urgent medical attention.

This medicine contains:

Sucrose: Each 5ml dose contains 2.61g sucrose; this should be taken into account in patients with diabetes mellitus. May be harmful to teeth. Patients with rare hereditary problems of fructose intolerance, glucose-galactose malabsorption or sucrase-isomaltase insufficiency should not take this medicine.

Ponceau 4R (E124): May cause allergic reactions.

4.5 Interaction with other medicinal products and other forms of interaction

Aminoglycosides: Neomycin is reported to reduce the absorption of phenoxymethylpenicillin.

Anticoagulants: Penicillins may interfere with anticoagulant control.

Bacteriostatic antibiotics: Certain bacteriostatic antibiotics such as chloramphenicol, erythromycin and tetracyclines have been reported to antagonise the bactericidal activity of penicillins and concomitant use is not recommended.

Methotrexate: Use of phenoxymethylpenicillin while taking methotrexate can cause reduced excretion of methotrexate thereby increasing the risk of toxicity.

Sulfinpyrazone: Excretion of penicillins reduced by sulfinpyrazone.

Typhoid vaccine (oral): Penicillins may inactivate oral typhoid vaccine if ingested concomitantly.

Guar gum: reduces the absorption of phenoxymethylpenicillin.

Probenecid: reduced excretion of phenoxymethylpenicillin by competing with it for renal tubular secretion.

Laboratory tests: Non enzymatic methods of detecting glucose in the urine may show false positive results during treatment with phenoxymethylpenicillin. Phenoxymethylpenicillin may also interfere with tests for urobilinogen.

4.6 Fertility, pregnancy and lactation

Pregnancy:
There are no or a limited amount of data from the use of Phenoxymethylpenicillin in pregnant women. As a precautionary measure, it is preferable to avoid the use of Phenoxymethylpenicillin during pregnancy.

Lactation:
The product is excreted in breast milk, presenting the risk of candidiasis and also of central nervous system toxicity due to prematurity of the blood brain barrier. There is a theoretical possibility of later sensitisation.

4.7 Effects on ability to drive and use machines

No or negligible effect.

4.8 Undesirable effects

The most common reactions to oral penicillin are gastrointestinal effects and hypersensitivity reactions. Although hypersensitivity reactions have been reported much less frequently after oral than after parenteral therapy, it should be remembered that all forms of hypersensitivity, including fatal anaphylaxis have been observed with oral penicillin. Hypersensitivity reactions of all intensities - to the point of anaphylactic shock- have also been observed after oral penicillin use.

Severe anaphylactoid reactions, which occur significantly less often after oral administration of penicillin than after intravenous or intramuscular administration, may necessitate appropriate emergency management.

The following convention has been utilised for the classification of undesirable effects:

Very common ($\geq$1/10)

Common ($\geq$1/100, <1/10)

Uncommon ($\geq$1/1000, <1/100)

Rare ($\geq$1/10,000, <1/1000)

Very rare (<1/10,000)

Not known (cannot be estimated from the available data).

Infections and infestations	Not known	Pseudomembranous colitis
Blood and lymphatic disorders	Very rare	Changes in blood counts, including, thrombocytopenia, granulocytopenia, agranulocytosis neutropenia, leucopenia, pancytopenia eosinophilia and haemolytic anaemia. These changes are reversible on discontinuation. Coagulation disorders have also been reported.
	Not known	Coagulation disorders (including prolongation of bleeding time and defective platelet function)
Gastrointestinal disorders	Common	Gastric discomfort, flatulence, nausea, vomiting, abdominal pain, diarrhoea glossitis, stomatitis. These disorders are usually light and abate during or at the latest after discontinuing treatment
	Uncommon	Sore mouth and black hairy tongue (discolouration of tongue)
	Rare	Dry mouth
	Very rare	tooth discolouration
Hepatobiliary disorders	Very rare	Hepatitis, cholestatic jaundice
	Rare	Transiently raised liver enzymes
Immune disorders	Common	Allergic reactions (typically manifest as skin reactions (See Skin and subcutaneous disorders). Urticarial, erythematous or mobilliform rash, pruritus may occur
	Very rare	Serious allergic reactions including drug fever, arthralgia, eosinophilia, angioneurotic oedema, laryngeal oedema, bronchospasm, tachycardia, dyspnoea, serum sickness, allergic vasculitis and dropping of blood pressure up to life threatening shock.
Nervous system disorders	Unknown	Central nervous system toxicity including convulsions (especially with high doses or in severe renal impairment); paraesthesia may occur with prolonged use, Neuropathy (usually associated with high doses of parenteral penicillin)
	Rare	Taste alteration
Renal and urinary	Very rare	Interstitial nephritis

disorders	Uncommon	Nephropathy (usually associated with high doses of parenteral penicillin)
Skin and subcutaneous disorders	Common	Urticarial, erythematous or mobilliform rash and pruritus, exanthema
	Rare	Exfoliative dermatitis, Toxic epidermal necrolysis, allergic vasculitis
	Very Rare	Severe skin reactions such as Stevens-Johnson syndrome
Metabolism and Nutrition Disorders	Very common	Loss of appetite
Investigations	Rare	blood pressure decreased

Frequently fever and eosinophilia will be the only manifestations of penicillin hypersensitivity.

Reporting of suspected adverse reactions:

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme at: www.mhra.gov.uk/yellowcard or search for MHRA Yellow Card in the Google Play or Apple App Store.

4.9 Overdose

Symptoms: A large oral overdose of penicillin may cause nausea, vomiting, stomach pain, diarrhoea and rarely, major motor seizures. If other symptoms are present, consider the possibility of an allergic reaction. Hyperkalaemia may result from overdosage, particularly for patients with renal insufficiency.

Management: No specific antidote is known. Symptomatic and supportive therapy is recommended. Activated charcoal with a cathartic, such as sorbitol, may hasten drug elimination. Penicillin may be removed by haemodialysis

5.1 Pharmacodynamic properties

ATC code: J01CE02,

Pharmacotherapeutic group: Antibacterials for systemic use, Beta-lactamase sensitive penicillins.

Mechanism of action

Phenoxymethylpenicillin acts through interference with the final stage of synthesis of the bacterial cell wall. The action depends upon phenoxymethylpenicillin's ability to bind to certain membrane bound proteins, known as penicillin-binding proteins (PBP's) that are located beneath the cell wall. These proteins are involved in maintaining cell wall structure in cell wall synthesis, and in cell division, and appear to possess transpeptidase and carboxypeptidase activity.

Bacterial surface enzymes called autolysins also appear to be involved in the lethal effect of penicillins, particularly for gram-positive bacteria. In gram-negative bacilli osmotic rupture of cells may occur when the cell wall is weakened. Phenoxymethylpenicillin can also produce morphological changes in vitro including the formation of long filaments or abnormally shaped cells. Bacteria that are not growing or dividing are generally not killed by phenoxymethylpenicillin.

Mechanism(s) of resistance:

Phenoxymethylpenicillin is inhibited by penicillinase and other beta-lactamases that are produced by certain micro-organisms. The incidence of beta-lactamase producing organisms is increasing.

EUCAST clinical MIC breakpoints to separate susceptible (S) pathogens from resistant (R) pathogens (version 1.0 22.11.210) are:

The susceptibility of streptococci Groups A, C and G and *S. pneumoniae* to phenoxymethylpenicillin is inferred from the susceptibility to benzylpenicillin.

EUCAST Species-related breakpoints (Susceptible ≤/Resistant>) Units: mg/L	
Staphylococcus	≤0.12/>0.12
Streptococcus A, B, C, G	≤0.25/>0.25
S. pneumoniae	≤0.05/>2

Staphylococci: Most staphylococci are penicillinase-producers. Penicillinase-producing strains are resistant. The benzylpenicillin breakpoint (shown) will mostly, but not unequivocally, separate beta-lactamase producers from non-producers.

Streptococcus pneumoniae: For phenoxymethylpenicillin, report *S. pneumoniae* with benzylpenicillin MICs above 0.06 mg/L resistant.

Streptococci: Strains with MIC values above the S/I breakpoint are very rare or not yet reported. Until there is evidence regarding clinical response for confirmed isolates with MIC above the current resistant breakpoint (in italics) they should be reported resistant. Streptococci groups A, B, C and G do not produce beta-lactamase. The addition of a beta-lactamase inhibitor does not add clinical benefit.

The prevalence of acquired resistance may vary geographically and with time for selected species and local information on resistance is desirable, particularly when treating severe infections. Expert advice should be sought as necessary when the local prevalence of resistance is such that the utility of the agent in at least some types of infection is questionable.

Commonly susceptible species
Streptococcus A, C, G
Species for which acquired resistance may be a problem
Staphylococcus aureus
Streptococcus pneumoniae
Staphylococcus epidermidis

5.2 Pharmacokinetic properties

Absorption:

Rapidly but incompletely absorbed after oral administration (about 60% of an oral dose is absorbed). Calcium and potassium salts are better absorbed than the free acid. Absorption appears to be reduced in patients with coeliac disease. Absorption appears to be more rapid in fasting than non-fasting subjects.

Blood concentration:

After an oral dose of 125mg, peak serum concentrations of 200 to 700ng/ml are attained in 2 hours. After an oral dose of 500mg, peak serum concentrations reach 2 to 5 micrograms/ml in 2 to 4 hours.

Half-life:

Biological half-life is about 30 minutes, increased to about 4 hours in severe renal impairment.

Distribution:

Widely distributed throughout the body and enters pleural and ascitic fluids and also in cerebrospinal fluid when the meninges are inflamed; Phenoxymethylpenicillin crosses the placenta and is secreted in trace amounts in breast milk; (protein binding 50% to 80% bound plasma proteins).

Biotransformation: It is metabolised in the liver; several metabolites have been identified, including penicilloic acid.

Elimination:

Unchanged drug and metabolites are excreted rapidly in the urine.
(20% to 35% of an oral dose is excreted in the urine in 24 hours).

5.3 Preclinical safety data

There are no preclinical data of relevance to the prescriber, which are additional to those already included in other sections of the SmPC.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Strawberry Flavour
Ponceau 4R (E124)
Sucrose
Saccharin Sodium

6.2 Incompatibilities

Not applicable

6.3 Shelf life

Before reconstitution: 36 months
After reconstitution: 1 week

6.4 Special precautions for storage

In the form of dry granules: Do not store above 25°C. Keep the bottle tightly closed.

After reconstitution: Store in a refrigerator (2 – 8 °C). Keep the bottle tightly closed. Use within one week of reconstitution.

6.5 Nature and contents of container

HDPE bottles and PP/HDPE child resistant caps with EPE induction seal liner.

Pack size 100 ml.

6.6 Special precautions for disposal

To reconstitute the granules to make the solution, add 65 ml of water and shake well until the powder is dissolved. When reconstituted the solution produced is essentially a clear pink solution with an odour of strawberry.

7. MARKETING AUTHORISATION HOLDER

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PL 20416/0131

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21/07/2025