Summary product characteristics:

1. Name of the medicinal product
Moxacil 500 mg capsules

2. Qualitative and quantitative composition
Each capsule contains :Amoxicillin (as Trihydrate) BP 500mg
For the full list of excipients, see section 6.1.

3. Pharmaceutical form
Capsule:
White powder filled in a cylindrical hard gelatin capsule of a yellow body printed “MOXACIL 500”and a maroon cap printed DAWA logo.

4. Clinical particulars
4.1 Therapeutic indications
Amoxicillin is indicated for the treatment of the following infections in adults and children
• Acute bacterial sinusitis
• Acute otitis media
• Acute streptococcal tonsillitis and pharyngitis
• Acute exacerbations of chronic bronchitis
• Community acquired pneumonia
• Acute cystitis
• Asymptomatic bacteriuria in pregnancy
• Acute pyelonephritis
• Typhoid and paratyphoid fever
• Dental abscess with spreading cellulitis
• Prosthetic joint infections
• Helicobacter pylori eradication
• Lyme disease
Amoxicillin is also indicated for the prophylaxis of endocarditis.
Consideration should be given to official guidance on the appropriate use of antibacterial agents.

4.2 Posology and method of administration
Method of administration: oral routé
Swallow with water without opening capsule**.**
Posology
The dose of Amoxicillin that is selected to treat an individual infection should take into account:
• The age, weight and renal function of the patient; as shown below
Adults and children ≥40 kg

Indication*	**Dose***
Acute bacterial sinusitis	250 mg to 500 mg every 8 hours or 750 mg to 1 g every 12 hours For severe infections 750 mg to 1 g every 8 hours Acute cystitis may be treated with 3 g twice daily for one day
Asymptomatic bacteriuria in pregnancy	
Acute pyelonephritis	
Dental abscess with spreading cellulitis	
Acute cystitis	
Acute otitis media	500 mg every 8 hours, 750 mg to 1 g every 12 hours For severe infections 750 mg to 1 g every 8 hours for 10 days
Acute streptococcal tonsillitis and pharyngitis	
Acute exacerbations of chronic bronchitis	
Community acquired pneumonia	500 mg to 1 g every 8 hours
Typhoid and paratyphoid fever	500 mg to 2 g every 8 hours
Prosthetic joint infections	500 mg to 1 g every 8 hours
Prophylaxis of endocarditis	2 g orally, single dose 30 to 60 minutes before procedure
Helicobacter pylori eradication	750 mg to 1 g twice daily in combination with a proton pump inhibitor (e.g. omeprazole, lansoprazole) and another antibiotic (e.gclarithromycin, metronidazole) for 7 days
Lyme disease (see section 4.4)	Early stage: 500 mg to 1 g every 8 hours up to a maximum of 4 g/day in divided doses for 14 days (10 to 21 days) Late stage (systemic involvement): 500 mg to 2 g every 8 hours up to a maximum of 6 g/day in divided doses for 10 to 30 days
*Consideration should be given to the official treatment guidelines for each indication	

Children <40 kg
Children may be treated with Amoxicillin capsules, dispersible tablets suspensions or sachets.
Amoxicillin Paediatric Suspension is recommended for children under six months of age.
Children weighing 40 kg or more should be prescribed the adult dosage.
Recommended doses:

Indication[+]	**Dose**[+]
Acute bacterial sinusitis	20 to 90 mg/kg/day in divided doses*
Acute otitis media	
Community acquired pneumonia	
Acute cystitis	
Acute pyelonephritis	
Dental abscess with spreading cellulitis	
Acute streptococcal tonsillitis and pharyngitis	40 to 90 mg/kg/day in divided doses*
Typhoid and paratyphoid fever	100 mg/kg/day in three divided doses
Prophylaxis of endocarditis	50 mg/kg orally, single dose 30 to 60 minutes before procedure
Lyme disease (see section 4.4)	Early stage: 25 to 50 mg/kg/day in three divided doses for 10 to 21 days Late stage (systemic involvement): 100 mg/kg/day in three divided doses for 10 to 30 days
*Twice daily dosing regimens should only be considered when the dose is in the upper range.	

Elderly
No dose adjustment is considered necessary.
Renal impairment

GFR (ml/min)	**Adults and children ≥ 40 kg**	**Children < 40 kg**[#]
greater than 30	no adjustment necessary	no adjustment necessary
10 to 30	Maximum 500 mg twice daily	15 mg/kg given twice daily (maximum 500 mg twice daily)
Less than 10	Maximum 500 mg/day.	15 mg/kg given as a single daily dose (maximum 500 mg)

In patients receiving haemodialysis
Amoxicillin may be removed from the circulation by haemodialysis.

	Haemodialysis
Adults and children over 40 kg	500 mg every 24 h Prior to haemodialysis one additional dose of 500 mg should be administered. In order to restore circulating drug levels, another dose of 500 mg should be administered after haemodialysis.
Children under 40 kg	15 mg/kg/day given as a single daily dose (maximum 500 mg). Prior to haemodialysis one additional dose of 15 mg/kg should be administered. In order to restore circulating drug levels, another dose of 15 mg/kg should be administered after haemodialysis.

In patients receiving peritoneal dialysis
Amoxicillin maximum 500 mg/day.
Hepatic impairment
Dose with caution and monitor hepatic function at regular intervals

4.3 Contraindications
Hypersensitivity to the active substance, to any of the penicillins or to any of the excipients listed in section 6.1.
It should not be administered to patients with infectious mononucleosis (glandular fever) since they are especially susceptible to amoxicillin-induced skin rashes.

4.4 Special warnings and precautions for use

Use with caution in patients with a known history of allergy to penicillin's ,cephalosporins or other beta-lactam agents

Amoxicillin is not suitable for the treatment of some types of infection unless the pathogen is already documented and known to be susceptible or there is a very high likelihood that the pathogen would be suitable for treatment with amoxicillin

This particularly applies when considering the treatment of patients with urinary tract infections and severe infections of the ear, nose and throat.

Convulsions may occur in patients with impaired renal function or in those receiving high doses or in patients with predisposing factors (e.g. history of seizures, treated epilepsy or meningeal disorders

In patients with renal impairment, the dose should be adjusted according to the degree of impairment

The occurrence at the treatment initiation of a feverish generalised erythema associated with pustula may be a symptom of acute generalised exanthemous pustulosis (AGEP,).

This reaction requires amoxicillin discontinuation and contra-indicates any subsequent administration.

Amoxicillin should be avoided if infectious mononucleosis is suspected since the occurrence of a morbilliform rash has been associated with this condition following the use of amoxicillin.

The Jarisch-Herxheimer reaction has been seen following amoxicillin treatment of Lyme disease

It results directly from the bactericidal activity of amoxicillin on the causative bacteria of Lyme disease, the spirochaete *Borrelia burgdorferi*. Patients should be reassured that this is a common and usually self-limiting consequence of antibiotic treatment of Lyme disease.

Prolonged use of an anti-infective may result in the overgrowth of non-susceptible organisms (superinfection).

If antibiotic-associated colitis occur, amoxicillin should immediately be discontinued, a physician consulted and an appropriate therapy initiated. Anti-peristaltic medicinal products are contra-indicated in this situation.

Periodic assessment of organ system functions; including renal, hepatic and haematopoietic function is advisable during prolonged therapy.

Elevated liver enzymes and changes in blood counts have been reported Anticoagulants

Prolongation of prothrombin time has been reported rarely in patients receiving amoxicillin. Appropriate monitoring should be undertaken when anticoagulants are prescribed concomitantly.

Crystalluria has been observed very rarely, predominantly with parenteral therapy. During the administration of high doses of amoxicillin, it is advisable to maintain adequate fluid intake and urinary output in order to reduce the possibility of amoxicillin Crystalluria. In patients with bladder catheters, a regular check of patency should be maintained

Elevated serum and urinary levels of amoxicillin are likely to affect certain laboratory tests. Due to the high urinary concentrations of amoxicillin, false positive readings are common with chemical methods.

It is recommended that when testing for the presence of glucose in urine during amoxicillin treatment, enzymatic glucose oxidase methods should be used.

The presence of amoxicillin may distort assay results for oestriol in pregnant women.

4.5 Interaction with other medicinal products and other forms of interaction

Probenecid decreases the renal tubular secretion of amoxicillin. Concomitant use of probenecid may result in increased and prolonged blood levels of amoxicillin.

Concurrent administration of allopurinol during treatment with amoxicillin can increase the likelihood of allergic skin reactions.

Tetracyclines and other bacteriostatic drugs may interfere with the bactericidal effects of amoxicillin.

Co-administration of acenocoumarol or warfarin and amoxicillin. prothrombin time or international normalised ratio should be carefully monitored with the addition or withdrawal of amoxicillin. Moreover, adjustments in the dose of oral anticoagulants may be necessary

Penicillins may reduce the excretion of methotrexate causing a potential increase in toxicity.

4.6 Fertiliy, pregnancy and lactation

Pregnancy: Amoxicillin may be used in pregnancy when the potential benefits outweigh the potential risks associated with treatment.

Breastfeeding : Amoxicillin is excreted into breast milk in small quantities with the possible risk of sensitisation.

Consequently, diarrhoea and fungus infection of the mucous membranes are possible in the breast-fed infant, so that breast-feeding might have to be discontinued.

Amoxicillin should only be used during breast-feeding after benefit/risk assessment by the physician in charge.

Fertility :There are no data on the effects of amoxicillin on fertility in humans

4.7 Effects on ability to drive and use machines
None known influence on the ability to drive and use machines

4.8 Undesirable effects
The most commonly reported adverse drug reactions (ADRs) are Diarrhoea and nausea ,Skin rash
Very rare: Mucocutaneous candidiasis, Reversible leucopenia (including severe neutropenia or agranulocytosis), reversible thrombocytopenia and haemolytic anaemia., Prolongation of bleeding time and prothrombin time , Severe allergic reactions, including angioneurotic oedema, anaphylaxis, serum sickness and hypersensitivity vasculitis, Hyperkinesia, dizziness and convulsions , Antibiotic associated colitis (including pseudomembraneous colitis and haemorrhagic colitis , Black hairy tongue, Hepatitis and cholestatic jaundice. A moderate rise in AST and/or ALT
Skin reactions such as erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis, bullous and exfoliative dermatitis, acute generalised exanthematous pustulosis (AGEP) and drug reaction with eosinophilia and systemic symptoms (DRESS), Interstitial nephritis, Crystalluria
*Uncommon: Vomiting, Urticaria and pruritus
Not known: Jarisch-Herxheimer reaction

4.9 Overdose
Symptoms and signs of overdose:
Gastrointestinal symptoms (such as nausea, vomiting and diarrhoea) and disturbance of the fluid and electrolyte balances may be evident. Amoxicillin crystalluria, in some cases leading to renal failure, has been observed. Convulsions may occur in patients with impaired renal function or in those receiving high doses
Treatment of intoxication
Gastrointestinal symptoms may be treated symptomatically, with attention to the water/electrolyte balance.
Amoxicillin can be removed from the circulation by haemodialysis.

5. Pharmacological properties
5.1 Pharmacodynamic properties
Pharmacotherapeutic group: Penicillins with extended spectrum; ATC code: J01CA04.
Mechanism of action
Amoxicillin is a semisynthetic penicillin (beta-lactam antibiotic) that inhibits one or more enzymes (often referred to as penicillin-binding proteins, PBPs) in the biosynthetic pathway of bacterial peptidoglycan, which is an integral structural component of the bacterial cell wall. Inhibition of peptidoglycan synthesis leads to weakening of the cell wall, which is usually followed by cell lysis and death.
Amoxicillin is susceptible to degradation by beta-lactamases produced by resistant bacteria and therefore the spectrum of activity of amoxicillin alone does not include organisms which produce these enzymes.

5.2 Pharmacokinetic properties
Amoxicillin is stable in the acid gastric secretion and is rapidly absorbed from the gastrointestinal tract after oral administration. The presence of food does not interfere with this process. Peak plasma concentrations are obtained in about two hours
Following oral administration, amoxicillin is approximately 70% bioavailable.
The time to peak plasma concentration (Tmax) is approximately one hour.
Distribution : About 18% of total plasma amoxicillin is bound to protein and the apparent volume of distribution is around 0.3 to 0.4 l/kg. Amoxicillin, like most penicillins, can be detected in breast milk, Also has been shown to cross the placental barrier
Biotransformation : Amoxicillin is partly excreted in the urine as the inactive penicilloic acid in quantities equivalent to up to 10 to 25% of the initial dose.
Elimination : The major route of elimination for amoxicillin is via the kidney.
mean elimination half-life of approximately one hour and a mean total clearance of approximately 25 l/hour in healthy subjects. Approximately 60 to 70% of the amoxicillin is excreted unchanged in urine during the first 6 hours after administration of a single 250 mg or 500 mg dose of amoxicillin. Various studies have found the urinary excretion to be 50-85% for amoxicillin over a 24 hour period.
The elimination half-life of amoxicillin is similar for children aged around 3 months to 2 years and older children and adults. For very young children (including preterm newborns) in the first week of life the interval of administration should not exceed twice daily administration due to immaturity of the renal pathway of elimination. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function.
The total serum clearance of amoxicillin decreases proportionately with decreasing renal function
Hepatically impaired patients should be dosed with caution and hepatic function monitored at regular intervals.

5.3 Preclinical safety data
There are no preclinical data of relevance additional to that already included in other sections of the summary product characteristics

5.3 Preclinical safety data
Epidemiological studies have provided no clear evidence of an increased carcinogenic risk in humans.

6. Pharmaceutical particulars
6.1 List of excipients
Microcrystalline cellulose
Sodium lauryl Sulphate
Magnesium Stearate
Empty hard gelatin capsules (maroon/yellow), size "0"

6.2 Incompatibilities
None known

6.3 Shelf life
36 months

6.4 Special precautions for storage
Store below 30°C. Protect from light.
Keep all medicines out of reach of children.

6.5 Nature and contents of container
Blister packs of 10 x 10`s in a unit box and bulk packs of 1000`s or 500`s in HDPE Jars

7. Marketing authorization holder
Dawa Limited,
Plot No.7879/8 Baba Dogo Road, Ruaraka
P.O Box 16633-00620 Nairobi –Kenya

8. Marketing authorization holder
Dawa Limited,
Plot No.7879/8 Baba Dogo Road, Ruaraka
P.O Box 16633-00620 Nairobi –Kenya

9. Registration number(s)
Kenya registration number:H2006/632

10. Legal category: Prescription only medicine, **(POM)**

11. Date of revision of the text
August 2018.