SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

Microgard S Cream

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each gram of cream contains:

Silver Sulfadiazine …… 10 mg (1% w/w)
Chlorhexidine Gluconate Solution (equivalent to Chlorhexidine Gluconate) … 2 mg (0.2% w/w)
Metronidazole …… 10 mg (1% w/w)
For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Cream for topical application.

White to off-white, smooth, homogenous cream with characteristic odour.

4. CLINICAL PARTICULARS

4.1 Therapeutic Indications

This triple combination cream is indicated for:

Prevention and treatment of wound sepsis in patients with second- and third-degree burns.
Treatment of infected skin ulcers, pressure sores, and diabetic foot ulcers.
Management of superficial skin infections including those caused by mixed aerobic and anaerobic organisms.
Adjunctive therapy for abrasions, lacerations, and surgical wounds at risk of infection.

4.2 Posology and Method of Administration

Route of administration: Topical (external use only).

Adults and children over 2 months of age:

Apply a thin layer of cream to the affected area once or twice daily, or as directed by the physician. The cream should be applied to a thickness of approximately 1–2 mm to entirely cover the cleaned, debrided wound or burn area. The wound should be re-evaluated and the cream reapplied after cleansing during dressing changes.

Burn wounds: The affected area should be covered with the cream at all times. Reapply immediately after hydrotherapy or if the cream is removed by patient activity. Treatment should be continued until satisfactory healing has occurred or until the wound is ready for grafting.

Method of application:

Cleanse and debride the wound using standard aseptic technique.
Apply the cream with sterile gloves or a sterile applicator.
Cover with a sterile, non-adherent dressing if required.
Change dressing every 1–2 days or as clinically indicated.

Special populations:

Paediatric population: Use in children under 2 months of age is contraindicated due to the risk of kernicterus from sulfonamide absorption (see section 4.3). For children over 2 months, use under medical supervision.

Older people: No special dosage adjustments required. Monitor renal and hepatic function in elderly patients with extensive burns due to potential systemic absorption.
Renal and hepatic impairment: Use with caution in patients with impaired renal or hepatic function. Monitor serum sulfa levels and renal function if applied to extensive burn areas.

4.3 Contraindications

Hypersensitivity to silver sulfadiazine, sulfonamides, chlorhexidine, metronidazole, or any of the excipients.
Infants under 2 months of age (risk of kernicterus from sulfonamide absorption).
Pregnant women at or near term (risk of kernicterus in the neonate).
Premature infants and newborn infants during the first 2 months of life.
Patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency (risk of haemolysis from sulfonamide component).
Patients with known porphyria.

4.4 Special Warnings and Precautions for Use

For external use only. Avoid contact with eyes, mouth, mucous membranes, and periocular region. In case of accidental contact, rinse thoroughly with water.
Systemic absorption may occur when applied to extensive burn areas. Monitor for signs of sulfa toxicity, including rash, fever, haematuria, crystalluria, and blood dyscrasias.
Monitor renal and hepatic function in patients with extensive burns or prolonged use.
Discontinue use if hepatic or renal function becomes impaired and elimination of drug decreases.
Use with caution in patients with a history of blood dyscrasias or bone marrow suppression.
Prolonged use may result in overgrowth of non-susceptible organisms, including fungi. If superinfection occurs, discontinue use and institute appropriate therapy.
Chlorhexidine may cause allergic reactions, including anaphylaxis, in sensitive individuals.
Metronidazole component: Avoid concurrent use with alcohol or propylene glycol-containing products due to disulfiram-like reactions.
Each tube should be designated for single-patient use to prevent cross-contamination.
Use sterile technique during application. Do not 'double-dip' applicators into the cream.

4.5 Interaction with Other Medicinal Products

Topical proteolytic enzymes: Silver may inactivate such enzymes. Avoid concurrent use.
Other topical antiseptics (e.g., hydrogen peroxide, iodine preparations): May interact with chlorhexidine or silver sulfadiazine. Avoid concurrent application.
Corticosteroids (topical): May increase risk of skin irritation or delay wound healing when applied concurrently.
Alcohol and propylene glycol-containing products: May cause disulfiram-like reactions due to metronidazole component.
Warfarin and other anticoagulants: Metronidazole may potentiate the anticoagulant effect. Monitor INR if used concurrently on large wound areas with significant systemic absorption.
Phenytoin: Metronidazole may inhibit metabolism, leading to increased phenytoin levels.
Lithium: Metronidazole may increase serum lithium levels.
Disulfiram: Concurrent use with metronidazole may cause psychotic reactions.
CYP3A4 inducers/inhibitors: May affect metronidazole metabolism.

4.6 Fertility, Pregnancy and Lactation

Pregnancy:

Category C. There are no adequate and well-controlled studies in pregnant women. Silver sulfadiazine should not be used on pregnant women at or near term due to the risk of kernicterus in the neonate.

Use during the first and second trimesters only if the potential benefit justifies the potential risk to the fetus. Systemic absorption of sulfonamides may occur with extensive application.

Lactation:

It is not known whether silver sulfadiazine, chlorhexidine, or metronidazole are excreted in human milk following topical administration. Caution should be exercised when administering to nursing mothers, especially when applied to large surface areas. Avoid application to the breast area.

Fertility:

No data available on effects of topical use on fertility.

4.7 Effects on Ability to Drive and Use Machines

No known effects on ability to drive and use machines. However, patients should be advised to avoid activities requiring alertness if they experience dizziness or other systemic effects from significant absorption.

4.8 Undesirable Effects

Adverse reactions are listed by MedDRA System Organ Class and frequency category:

Very common (≥1/10); Common (≥1/100 to <1/10); Uncommon (≥1/1,000 to <1/100); Rare (≥1/10,000 to <1/1,000); Very rare (<1/10,000); Not known (cannot be estimated from available data).

System Organ Class	Adverse Reaction	Frequency
Immune system disorders	Hypersensitivity reactions, anaphylaxis, angioedema	Rare
Blood and lymphatic system disorders	Leucopenia, agranulocytosis, thrombocytopenia, haemolytic anemia (especially in G6PD deficiency)	Rare
Nervous system disorders	Peripheral neuropathy (with prolonged use), headache, dizziness, metallic taste	Not known
Eye disorders	Eye irritation (if accidental contact)	Uncommon
Skin and subcutaneous tissue disorders	Burning sensation, pain, pruritus, erythema, rash, skin discoloration (argyria), contact dermatitis, urticaria, skin dryness, exfoliative dermatitis	Common to Uncommon
Gastrointestinal disorders	Nausea, vomiting, anorexia, epigastric distress	Not known
Hepatobiliary disorders	Hepatitis, jaundice, elevated liver enzymes	Rare
Renal and urinary disorders	Crystalluria, haematuria, interstitial nephritis	Rare
General disorders	Fever, chills	Uncommon

Observed post-marketing.

Reporting of suspected adverse reactions If you experience any side effects, talk to your doctor or pharmacist. By reporting side effects, you can help provide more information on the safety of this product. Healthcare professionals are requested to report any suspected adverse reactions via pharmacy and poisons board, Pharmacovigilance Electronic Reporting System (PvERS) https://pv.pharmacyboardkenya.org

4.9 Overdose

Overdose following topical application is unlikely. However, excessive application to large surface areas may result in systemic absorption of sulfonamides, chlorhexidine, or metronidazole.

Symptoms of systemic sulfonamide overdose may include: nausea, vomiting, dizziness, headache, drowsiness, unconsciousness, fever, haematuria, crystalluria, and blood dyscrasias.

Management: Discontinue use. Supportive treatment should be initiated as appropriate. Maintain adequate hydration to prevent crystalluria. Monitor renal function, liver function, and blood counts. Haemodialysis may be considered in severe cases.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic Properties

Pharmacotherapeutic group: Antibiotics and chemotherapeutics for dermatological use; Sulfonamides in combination with other antibacterials

ATC code: D06BA51

Mechanism of action:

Silver Sulfadiazine: A broad-spectrum bactericidal agent effective against Gram-positive and Gram-negative bacteria, including Pseudomonas aeruginosa, as well as some yeasts. It acts by disrupting bacterial cell walls and membranes and inhibiting bacterial respiration. The silver ion binds to DNA, RNA, and proteins, interfering with microbial replication.

Chlorhexidine Gluconate: A bisbiguanide antiseptic with activity against a wide range of Gram-positive and Gram-negative bacteria, fungi, and some viruses. It disrupts bacterial cell membranes, causing leakage of intracellular components and cell death. It has both immediate and residual antimicrobial activity.

Metronidazole: A nitroimidazole antimicrobial agent active against anaerobic bacteria and protozoa. It is reduced intracellularly by sensitive organisms, generating cytotoxic intermediates that damage DNA and inhibit nucleic acid synthesis.

The triple combination provides broad-spectrum coverage against aerobic, anaerobic, and mixed polymicrobial wound infections, including those commonly associated with burns and chronic wounds.

5.2 Pharmacokinetic Properties

Absorption:

Following topical application to intact skin, systemic absorption is minimal. However, significant absorption may occur when applied to large burn areas, extensive ulcers, or denuded skin. Peak serum sulfonamide concentrations of 8–12 mg% may be reached with extensive application.

Distribution:

Silver sulfadiazine distributes to tissues and body fluids. Sulfonamides cross the placenta and are excreted in breast milk. Metronidazole penetrates well into tissues, including bone and central nervous system.

Metabolism:

Sulfadiazine is acetylated in the liver. Metronidazole is metabolised in the liver by oxidation and glucuronidation. Chlorhexidine is poorly absorbed and minimally metabolised.

Elimination:

Sulfadiazine and its metabolites are excreted primarily by the kidneys. Metronidazole and its metabolites are excreted in urine and faeces. Chlorhexidine is excreted unchanged in faeces.

5.3 Preclinical Safety Data

No carcinogenicity studies have been performed with the triple combination. Long-term dermal toxicity studies of silver sulfadiazine in rats (24 months) and mice (18 months) at concentrations 3–10 times the clinical concentration revealed no evidence of carcinogenicity. No mutagenic effect was observed in the Ames test.

Reproductive toxicity studies with topical silver sulfadiazine in animals did not show adverse effects on reproduction. However, systemic sulfonamide administration in animals has been associated with teratogenic effects

6. PHARMACEUTICAL PARTICULARS

6.1 List of Excipients

- Cetostearyl alcohol
- Liquid paraffin
- White soft paraffin
- Propylene glycol
- Polysorbate 60
- Glycerol
- Methyl parahydroxybenzoate (E218)
- Propyl parahydroxybenzoate (E216)
- Purified water

6.2 Incompatibilities

- Chlorhexidine is incompatible with soap and other anionic surfactants.
- Silver sulfadiazine may be inactivated by topical proteolytic enzymes.
- Incompatible with oxidising agents and strong acids/alkalis.
- Do not mix with other topical medicinal products unless specifically directed by a physician.

6.3 Shelf Life

24 months

6.4 Special Precautions for Storage

- Store below 30°C.
- Protect from light.
- Do not freeze.
- Keep out of reach of children.

6.5 Nature and Contents of Container

Aluminium laminate tube with polypropylene cap, or high-density polyethylene (HDPE) jar with screw cap.

Pack sizes: 15 g, 30 g, and 50 g.

6.6 Special Precautions for Disposal and Other Handling

- Any unused product or waste material should be disposed of in accordance with local requirements for pharmaceutical waste.
- Do not dispose of via wastewater or household waste.
- Each tube/jar should be designated for single-patient use only.
- Wash hands thoroughly after handling.

7. MARKETING AUTHORISATION HOLDER

Stedman Pharmaceuticals Pvt Limited 14A, 3rd Cross Street, Venkateswara Colony, Nehru Nagar, Kottivakkam, Chennai, Tamil Nadu 600041, India

8. **MARKETING AUTHORISATION NUMBER**

CTD9135

9. DATE OF FIRST AUTHORISATION/RENEWAL

21st September 2022

10. DATE OF REVISION OF THE TEXT

21st September 2022