

Hair dandruff reducer

DI-HDR-02

DEFINITION / COMPOSITION

HAIR DANDRUFF REDUCER is a liquid, hydro-soluble preparation with demonstrated efficacy against *Pityrosporum ovale*.

Dandruff is a scalp disorder resulting in a disruption of the corneocytes cohesion which leads to an excessive shedding of dead cells on the scalp. The epidermal cell turn-over is accelerated and the cells are discarded in big clumps.

Causes

The etiology of dandruff is multifactorial but it is generally accepted that the most common cause is probably the fungus *Malassezia furfur* (previously known as *Pityrosporum ovale*). A species of yeast found in superficial epidermal scales and hair follicles on oily skin, of borderline pathogenicity; may cause seborrheic dermatitis associated with immune deficiency.

As the fungus requires fat to grow, it is most common in areas with many sebaceous glands: on the scalp, face, and upper part of the body. When the fungus grows too rapidly, the natural renewal of cells is disturbed and dandruff appears with itching (a similar process may also occur with other fungi or bacteria).

Other factors can influence the state of dandruff such as:

- hormonal imbalances
- season (most severe during the winter),
- use of alkaline soaps,
- infrequent shampoo of hair or inadequate rinsing, excessive perspiration,
- stress, anxiety and tension...

Components:

HAIR DANDRUFF REDUCER is glycolic solution of **Hexamidine diisethionate** at 8%.

Molecular formula C₂₄ H₃₈ N₄ O₁₀ S₂
MW: 606.72 (Hexamidine diisethionate)
Belonging to the class of aromatic diamidines

Hexamidine Diisethionate is a proven antimicrobial agent that has been used in a number of topical, ophthalmic and buccal preparations in Europe for many years. Clinical effectiveness and safety have been demonstrated in several clinical trials and with general wide usage in people of all ages (The Merck Index, 11th Ed.)

Hexamidine is well known and widely used for its broad spectrum microbiostatic and microbiocidal activity, both immediate and residual, against gram positive and negative bacteria, anaerobes, fungi / yeast and protozoa viruses.

Hexamidine Diisethionate has a good cutaneous-mucous local tolerance and has an excellent coefficient of security (safe and effective) compared to other antiseptics. It remains active in the presence of sebum and acts as an anti-irritant for the skin. Its specific antimicrobial activity is not affected by the presence of abundant cutaneous secretions, especially in the cases of oily or acne-prone skin types.

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Hexamidine Diisethionate has an effective antimicrobial action against acne-causing bacteria (*P. acnes* and *Staphylococcus epidermis*) and against aerobic and anaerobic bacteria and fungi often associated with acne, indirectly playing an anti-inflammatory role

Wide spectrum of activity:

- Gram + and Gram – bacteria
- Fungi (yeasts and filamentous molds)

Suitable as skin/scalp aseptizer: acne, dandruff states, deodorant

In cosmetics and personal-care products, Hexamidine and Hexamidine Diisethionate also function as preservatives and are used in the formulation of hair, nail, and skin-care products, as well as eye makeup and baby products.

COSMETIC APPLICATIONS

HAIR DANDRUFF REDUCER can be formulated at shampoos, tonic lotions, creams and masks. Because it is difficult to work and formulate with Hexamidine diisethionate, this is a ready to use solution at 8% of the antiseptic agent

Care of pityrospores: of the face: seborrheic state
and the scalp: pityriasis capitis or dandruff state

Strains			Concentration (µg/ml)	
			MIC	MMC
<i>Sarcina lutea</i>	ATCC	9341	10	20
<i>Streptococcus pyogenes</i>	NCTC	8198	20	20
<i>Corynebacterium xerosis</i>	NCTC	8481	40	40
<i>Propionibacterium acnes</i>	NCTC	521	1,25	155
<i>Propionibacterium granulosum</i>	ATCC	5564	1,25	155
<i>Pytirosporum ovale</i>	NCYC	0218	155	1250

* MIC Minimal Inhibitory Concentration

** MMC Minimal Microbicidal Concentration

*** Results of MMC after only 2 hours of contact

HAIR DANDRUFF REDUCER can also be used as antiseptic in topical applications, to kill harmful micro-organisms at the skin surface

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DOSAGE / SOLUBILITY / PROCESSING

1. **Dosage:** 0,5 – 1,25 % (Regulation (EC) No 1223/2009, Annex Ref V/47: maximum concentration on Hexamidine diisethionate: 0.1%)
2. **Solubility:** HAIR DANDRUFF REDUCER is soluble in water (20-85 °C) and soluble in ethanol. It is not soluble at oils.
3. **Processing:** It must be incorporated at the aqueous phase of the cosmetic formulation, at all the ranges of T; until emulsion or also when the formulation is finished, at the cooling phase

COMPATIBILITY

HAIR DANDRUFF REDUCER is compatible with a pH range between 4 to 9.

ANALITICAL CHARACTERISTICS

1. **Aspect:** Transparent liquid, with characteristic odour.
2. **Specifications:** Given under request.

TOLERANCE

Good

STORAGE

At its original package at 15-25 °C

INCI DENOMINATION

Propylene Glycol, Hexamidine Diisethionate, Water.

MANUFACTURER

COBIOsa INDUSTRIAS ASOCIADAS, S.L.