

# EpiQuin<sup>®</sup> Micro

(hydroquinone USP 4%)

A Multi-Phasic Sustained Release Cream in an Airless Pump  
Skin Lightening Topical Cream

Rx only

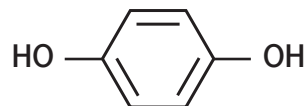
FOR EXTERNAL USE ONLY.

## I. DESCRIPTION

EpiQuin Micro is a patented, multi-phasic formulation containing 4 distinct phases: an oil phase, a water phase, and two methyl methacrylate/glycol dimethacrylate crosspolymer microparticulate phases resulting from the incorporation of two different MICROSPONGE<sup>\*</sup> delivery systems within the formula. The formula contains 4% hydroquinone USP, apportioned in both the water phase (1.5%) and in one of the microparticulate phases (2.5%) of the formulation. It also includes retinol (vitamin A), which is shown to penetrate better than retinyl esters<sup>1</sup>, in the second microparticulate phase. Using a standard model of topical drug release, the MICROSPONGE delivery system has been shown to extend the release of hydroquinone<sup>2</sup>. The multi-phasic formulation allows for the hydroquinone to be sequestered within the two phases which allows for both immediate and gradual release of the active ingredient into the skin.<sup>3,4</sup> The multi-phasic composition packaged in an airless pump also improves the stability of the hydroquinone when compared to other formulations not containing the microparticulate, thus preserving the efficacy of the product<sup>5</sup>.

Hydroquinone is 1,4-benzenediol. Hydroquinone is structurally related to monobenzene. Hydroquinone occurs as fine white needles. The drug is freely soluble in water and in alcohol and has a pK<sub>a</sub> of 9.96. Chemically, hydroquinone is designated as p-dihydroxybenzene; the empirical formula is C<sub>6</sub>H<sub>6</sub>O<sub>2</sub>; the molecular weight is 110.1.

The structural formula is:



**ACTIVE INGREDIENT:**  
Hydroquinone USP 4%

## OTHER INGREDIENTS:

Ascorbic Acid, Ascorbyl Palmitate, Benzyl Alcohol, BHT, Bisabolol, C10-30 Cholesterol/Lanosterol Esters, C13-14 Isoparaffin, Caprylic/Capric Triglyceride, Cetearyl Alcohol, Cetyl Alcohol, Cetyl Phosphate, Cetyl Ricinoleate, Cyclohexasiloxane, Cyclopentasiloxane, Dimethicone, Disodium EDTA, Glycerin, Laureth-7, Magnesium Aluminum Silicate, Methyl Methacrylate/Glycol Dimethacrylate Crosspolymer, Methylparaben, PEG-10 Soy Sterol, Phenoxyethanol, Polyacrylamide, Polysorbate 20, Polysorbate 60, Propyl Gallate, Retinol, Sodium Metabisulfite, TEA-Stearate, Tocopheryl Acetate, Triethanolamine, Water.

## II. CLINICAL PHARMACOLOGY:

Topical application of hydroquinone produces a reversible depigmentation of the skin by inhibition of the enzymatic oxidation of tyrosine to 3- (3,4-dihydroxyphenyl)

alanine (dopa)<sup>6</sup> and suppression of other melanocyte metabolic processes.<sup>7</sup> Exposure to sunlight or ultraviolet light will cause repigmentation of the bleached areas.<sup>8</sup>

**Pharmacokinetics:** It is widely accepted that the absorption of a topically applied drug is affected by many factors, including the vehicle, the drug's solubility, the conditions of the epidermis including the overall pH, disease state, and genetically driven factors such as oiliness or dryness of the epidermis. The rate of absorption can affect the efficacy and tolerability of the formulation<sup>9</sup>.

## III. INDICATIONS AND USAGE:

EpiQuin Micro is indicated for the gradual treatment of ultraviolet induced dyschromia and discoloration resulting from the use of oral contraceptives, pregnancy, hormone replacement therapy, or skin trauma.

## IV. CONTRAINDICATIONS:

EpiQuin Micro is contraindicated in any patient with a prior history of hypersensitivity or allergic reaction to hydroquinone or any of the other ingredients. The safety of topical hydroquinone use during pregnancy or on children (12 years and under) has not been established.

## V. WARNINGS:

A. **CAUTION:** Hydroquinone is a depigmenting agent that may produce unwanted cosmetic effects if not used as directed. The physician should be familiar with the contents of this insert before prescribing or dispensing this medication.  
B. Test for skin sensitivity before using EpiQuin Micro by applying a small amount to an unbroken patch of skin and check within 24 hours.  
Minor redness is not a contraindication, but where there is itching, vesicle formation, or excessive inflammatory response, further treatment is not advised. Close patient supervision is recommended. Contact with the eyes should be avoided. If no lightening effect is noted after two months of treatment, use of EpiQuin Micro should be discontinued.  
C. Sunscreen use is an essential aspect of

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hydroquinone therapy, because even minimal sunlight sustains melanocytic activity. To prevent repigmentation during treatment and maintenance therapy, sun exposure on treated skin should be avoided by application of a broad spectrum sunscreen (SPF 15 or greater) or by use of protective clothing.

D. Keep this and all medications out of reach of children. In case of accidental ingestion, contact a physician or a poison control center immediately.

E. **WARNING:** Contains sodium metabisulfite, a sulfite that may cause serious allergic reactions (e.g., hives, itching, wheezing, anaphylaxis, severe asthma attack) in certain susceptible persons.

F. On rare occasions, a gradual blue-black darkening of the skin may occur, in which case, use of EpiQuin Micro should be discontinued and a physician contacted immediately.

## VI. PRECAUTIONS (SEE WARNINGS):

A. **Pregnancy Category C:** Animal reproduction studies have not been conducted with topical hydroquinone. It is also not known whether hydroquinone can cause fetal harm when used topically on a pregnant woman, or can affect reproductive capacity. It is not known to what degree, if any, topical hydroquinone is absorbed systemically. Topical hydroquinone should be used in pregnant women only when clearly indicated.

B. **Nursing mothers:** It is not known whether topical hydroquinone is absorbed or excreted in human milk. Caution is advised when hydroquinone is used by a nursing mother.

C. **Pediatric usage:** Safety and effectiveness in pediatric patients below the age of 12 years have not been established.

## VII. ADVERSE REACTIONS:

No systemic reactions have been reported. Occasional cutaneous hypersensitivity (localized contact dermatitis) may occur, in which case the medication should be discontinued and the physician notified immediately.

## VIII. OVERDOSAGE:

There have been no systemic reactions reported from the use of topical hydroquinone. However, treatment should be limited to relatively small areas of the body at one time, since some patients experience a transient skin reddening and a mild burning sensation that does not preclude treatment.

## IX. DOSAGE AND ADMINISTRATION:

EpiQuin Micro should be applied to the affected areas twice daily, morning and before bedtime, or as directed by a physician.

Replace cap after each use. To prevent repigmentation during and after the use of EpiQuin Micro, sun exposure should be limited and a sunscreen agent or sun-protective clothing should be used to cover the treated areas. There is no recommended dosage for pediatric patients under 12 years of age except under the advice and supervision of a physician.

## X. HOW SUPPLIED:

EpiQuin Micro is supplied as follows:  
SIZE: 40 g tube with an airless pump dispenser  
NDC NUMBER: 67402-010-40

Store at 25°C (77°F); excursions permitted to 15°-30°C (59°-86°F) (see USP Controlled Room Temperature)

## REFERENCES

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