I. DESCRIPTION: Hydroquinone is 1,4-benzenediol. Hydroquinone is structurally related to monobenzone. Hydroquinone occurs as fine, white needles. The drug is freely soluble in water and in alcohol and has a pKₐ of 9.96. Chemically, hydroquinone is designated as p-dihydroxybenzene; the empirical formula is C₆H₆O₂; molecular weight 110.1. The structural formula is:

CONTENTS:
ACTIVE INGREDIENT: Hydroquinone USP 4%.
OTHER INGREDIENTS (LUSTRA®): Purified Water USP, Phenyl Trimethicone, Glycerin 99% USP, Glyceryl Stearate (and) PEG-100 Stearate, Alcohol, Cetyl Alcohol NF, Cyclopentasiloxane (and) Polysilicone-11, Linoleic Acid, Glycolic Acid, Polycrlylamide (and) C13-14 Isoparaffin (and) Laureth-7, Cetearyl Alcohol (and) Ceteareth-20, Triethanolamine 99% USP, Tocopheryl Acetate USP, Hydrogenated Lecithin, Phenoxyethanol, Magnesium 1-Ascorbyl Phosphate NF, Benzyl Alcohol NF, Dimethiconol, Sodium Metabisulfite NF, Sodium Citrate USP, Disodium EDTA USP, Butylated Hydroxytoluene, Vitamin E USP, Carbomer NF, Fragrance.
OTHER INGREDIENTS (LUSTRA-AF®): Purified Water USP, Octyl Methoxycinnamate, Glycerin 99% USP, Phenyl Trimethicone, Glyceryl Stearate (and) PEG-100 Stearate, Cetyl Alcohol NF, Alcohol, Avobenzone, Cyclopentasiloxane (and) Polysilicone-11, Linoleic Acid, Glycolic Acid, Polycrlylamide (and) C 13-14 Isoparaffin (and) Laureth-7, Cetearyl Alcohol (and) Ceteareth-20, Triethanolamine 99% USP, Hydrogenated Lecithin, Tocopheryl Acetate USP, Phenoxyethanol, Benzyl Alcohol NF, Magnesium 1-Ascorbyl Phosphate NF, Dimethiconol, Sodium Metabisulfite NF, Sodium Citrate USP, Disodium EDTA USP, Butylated Hydroxytoluene, Vitamin E USP, Carbomer NF, Fragrance.

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)¹ and suppression of other melanocyte metabolic processes.² Exposure to sunlight or ultraviolet light will cause repigmentation which may be prevented by the broad spectrum sunscreen agents contained in LUSTRA-AF.³

III. INDICATIONS AND USAGE: LUSTRA and LUSTRA-AF are 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. DOSAGE AND ADMINISTRATION: LUSTRA or LUSTRA-AF should be applied to the affected areas twice daily, morning and before bedtime, or as directed by a physician. During and after the use of LUSTRA sun exposure should be limited, and a sunscreen agent or sun-protective clothing should be used to cover the treated areas, to prevent repigmentation. There is no recommended dosage for pediatric patients under 12 years of age except under the advice and supervision of a physician.

V. CONTRAINDICATIONS: LUSTRA and LUSTRA-AF are contraindicated in any patient that has 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.

VI. WARNINGS:
A. CAUTION: Hydroquinone is a depigmenting agent which 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 LUSTRA or LUSTRA-AF 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 LUSTRA or LUSTRA-AF should be discontinued. LUSTRA-AF is formulated for use as a treatment for dyschromia and should not be used for the prevention of sunburn.

C. Sunscreen use is an essential aspect of hydroquinone therapy, because even minimal sunlight sustains melanocytic activity. During treatment and maintenance therapy, sun exposure should be avoided on treated skin by application of a broad spectrum sunscreen (SPF 15 or greater) or by use of protective clothing to prevent repigmentation. Although LUSTRA has an antioxidant system in its vehicle, there are no sunblocking or sunscreening agents in LUSTRA. The sunscreens in LUSTRA-AF provide the necessary sun protection during therapy. During and after the use of LUSTRA-AF, sun exposure should be limited or sun-protective clothing should be used to cover the treated areas to prevent repigmentation.

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

E. WARNING: Contains sodium metabisulfite, a sulfite which 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 LUSTRA or LUSTRA-AF should be discontinued and a physician contacted immediately.

VII. 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 where 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.

VIII. 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.

IX. 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 which does not preclude treatment.

X. HOW SUPPLIED:
LUSTRA® (hydroquinone USP 4%) is available as follows:

<table>
<thead>
<tr>
<th>SIZE</th>
<th>NDC NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ounce tube (56.8 g)</td>
<td>51672-1326-3</td>
</tr>
</tbody>
</table>

LUSTRA-AF® (hydroquinone USP 4%) is available as follows:

<table>
<thead>
<tr>
<th>SIZE</th>
<th>NDC NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ounce tube (56.8 g)</td>
<td>51672-1327-3</td>
</tr>
</tbody>
</table>

REFERENCES:

LUSTRA and LUSTRA-AF should be stored at 15°C-25°C (59°F-77°F).


Manufactured for: TaroPharma
a division of Taro Pharmaceuticals U.S.A., Inc., Hawthorne, NY 10532
by: Contract Pharmaceuticals Limited, Mississauga, Ontario L5N 6L6 CANADA
Made in Canada

LUSTRA® & LUSTRA-AF® are registered trademarks of Medicis Pharmaceutical Corporation, used under license by Taro Pharmaceuticals U.S.A., Inc.
TaroPharma™ is a trademark of Taro Pharmaceuticals U.S.A., Inc.

Issued: September 2004
PK-4967-0 0904-0
I. DESCRIPTION: Hydroquinone is 1,4-benzenediol. Hydroquinone is structurally related to monobenzone. Hydroquinone occurs as fine, white needles. The drug is freely soluble in water and in alcohol and has a pK$_a$ of 9.96. Chemically, hydroquinone is designated as p-dihydroxybenzene; the empirical formula is C$_6$H$_6$O$_2$; molecular weight 110.1. The structural formula is:

\[
\begin{align*}
\text{OH} & \\
\text{OH} & \\
\text{C}_6\text{H}_6\text{O}_2
\end{align*}
\]

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) $^1$ and suppression of other melanocyte metabolic processes. $^2$ Exposure to sunlight or ultraviolet light will cause repigmentation which may be prevented by the broad spectrum sunscreen agents contained in LUSTRA-ULTRA. $^3$

III. INDICATIONS AND USAGE: LUSTRA-ULTRA 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. DOSAGE AND ADMINISTRATION: LUSTRA-ULTRA should be applied to the affected areas twice daily, morning and before bedtime, or as directed by a physician. During and after the use of LUSTRA-ULTRA sun exposure should be limited, and a sunscreen agent or sun-protective clothing should be used to cover the treated areas, to prevent repigmentation. There is no recommended dosage for pediatric patients under 12 years of age except under the advice and supervision of a physician.

V. CONTRAINDICATIONS: LUSTRA-ULTRA is contraindicated in any patient that has 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.

VI. WARNINGS:
A. CAUTION: Hydroquinone is a depigmenting agent which 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 LUSTRA-ULTRA 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 LUSTRA-ULTRA (hydroquinone USP 4%) should be discontinued. LUSTRA-ULTRA is formulated for use as a treatment for dyschromia and should not be used for the prevention of sunburn.
C. Sunscreen use is an essential aspect of hydroquinone therapy, because even minimal sunlight sustains melanocytic activity. During treatment and
maintenance therapy, sun exposure should be avoided on treated skin by application of a broad spectrum sunscreen (SPF 15 or greater) or by use of protective clothing to prevent repigmentation. The sunscreens in LUSTRA-ULTRA provide the necessary sun protection during therapy. During and after the use of LUSTRA-ULTRA, sun exposure should be limited or sun-protective clothing should be used to cover the treated areas to prevent repigmentation.

D. Keep this and all medications out of the reach of children. In case of accidental ingestion, contact a physician or a poison control center immediately.
E. WARNING: Contains sodium metabisulfite, a sulfite which 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 LUSTRA-ULTRA should be discontinued and a physician contacted immediately.

VII. 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 where clearly indicated.
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VIII. 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.

IX. OVERDOSAGE
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X. HOW SUPPLIED:
LUSTRA-ULTRA™ (hydroquinone USP 4%) is available as follows:

<table>
<thead>
<tr>
<th>SIZE</th>
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<tbody>
<tr>
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<tr>
<td>2 ounce tube (56.8G)</td>
<td>51672-1328-3</td>
</tr>
</tbody>
</table>

REFERENCES:

LUSTRA-ULTRA should be stored at:15°-25°C (59°-77°F).

Patent Pending

Manufactured for:
a division of Taro Pharmaceuticals U.S.A., Inc., Hawthorne, NY 10532
by: Contract Pharmaceuticals Limited, Mississauga, Ontario L5N 6L6 CANADA
Made in Canada

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TaroPharma™ is a trademark of Taro Pharmaceuticals U.S.A., Inc.

Revised: June 2005
PK-5067-2 0605-2