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Urea

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Drug Nomenclature

Generic Name: Urea

CAS Number: 57-13-6

Synonyms: Carbamide

Synonyms: Amino-cerv; Carbamex; Dermaflex; Eucerin; Hydrophil; Kerasal; Urea; Urederm; Uremol; Urisec

Introduction

Urea, at concentrations of 10–30%, promotes hydration of keratin and mild keratolysis in dry and hyperkeratotic skin.

Chemistry and Stability

Chemistry

Urea, the diamide of carbonic acid, occurs as colorless to white, prismatic crystals or as a white, crystalline powder. The drug is freely soluble in water and soluble in alcohol and has a cooling, saline, unpleasant taste; it is practically odorless but may gradually develop a slight ammoniacal odor on long standing. An endothermic reaction occurs on dissolution of urea; to shorten dissolution time, the diluent may be warmed in a water bath to a temperature of 60°C before mixing with urea.

Stability

Upon standing, heating, or exposure to acids or alkalis, urea is hydrolyzed to ammonia and carbon dioxide. Solutions of urea are unstable and cannot be sterilized by heat. Urea should be stored in well-closed containers.

Uses

Urea is used topically in the treatment of dry skin. At concentrations of 10–30%, urea promotes hydration of keratin and mild keratolysis in dry and hyperkeratotic skin. The drug increases the uptake of water by the stratum corneum, giving it a high water-binding capacity. Topically applied urea may also have an antipruritic effect. At high concentrations (e.g., 40%), urea is a protein denaturant.

For use of urea as a diuretic or oxytocic, see 40:28.12 or 76:00, respectively.

Cautions

Adverse Effects

When used in appropriate dosage, topically applied urea preparations have a low order of toxicity. Transient stinging may occur, especially when urea preparations are applied to the face or broken or inflamed skin. Local irritation may also occur following topical application of urea.

Precautions and Contraindications

Topical preparations containing urea are intended for external use only. Topical urea preparations should be applied with caution to the face or broken or inflamed skin. Urea should not be used near the eyes.

Some commercially available topical formulations of urea contain sulfites that may cause allergic-type reactions, including anaphylaxis and life-threatening or less severe asthmatic episodes, in certain susceptible individuals. The overall prevalence of sulfite sensitivity in the general population is unknown but probably low; such sensitivity appears to occur more frequently in asthmatic than in nonasthmatic individuals. Topical urea preparations should be discontinued if local irritation or rash occurs during use.

Dosage and Administration

Urea is applied topically as a cream or lotion. The moisturizing effect of urea may be enhanced by applying the preparation to the skin while it is still moist after washing or bathing. Urea is applied topically to the affected area 1–3 times daily or as directed by a physician.

Preparations**Urea**

Routes	Dosage Forms	Strengths	Brand Names	Manufacturer
Bulk	Powder*			
Bulk	Crystals*			
Topical	Cream	10%	Aqua Care® (with benzyl alcohol)	Numark
			Nutraplus®	Healthpoint
	20%	Carmol® (with propylene glycol)	Doak	
		Ureacin® (with parabens)	Pedinol	
	22%	Gordon's® Urea	Gordon	
		30%	Rea-Lo®	Med-Derm
	40%	Gordon's® Urea	Gordon	
		Lotion	10%	Aqua Care® (with benzyl alcohol)
Carmol®	Doak			

	Nutraplus®	Healthpoint
	Ureacin® (with parabens)	Pedinol
15%	Rea-Lo®	Med-Derm
25%	Ultra Mide®	Teva

* Available generically.

Urea Combinations

Routes	Dosage Forms	Strengths	Brand Names	Manufacturer
Topical	Cream	10% with Hydrocortisone Acetate 1%	Carmol® HC (with propylene glycol and sodium metabisulfite)	Doak

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