

AC Moisture-Plex Advanced PF



discover the
secret to brand differentiation
with immediate improvement in barrier function
increase cellular renewal,
reduce evaporation,
and balance moisture levels

BACKGROUND

If we were asked to describe our skin, we would probably make a description based on its physical characteristics and not its function. True, we like our skin to feel soft and smooth; but more importantly we need our skin to protect us from UV damage, free radicals and hazardous microorganisms while providing barrier protection from various chemicals and liquids. The epidermis is actually part of our innate immune system and serves as one of the body's primary defense mechanisms to protect us from an onslaught of environmental stimuli. Yet the ability of the epidermis to fulfill all of these functions tends to diminish if it is not properly hydrated, so the way we like our skin to look and feel is also optimal for its function.

There are a multitude of ways for our skin to become dry, which results in irritation, damage and loss of function. We have to worry about more than just cold temperatures, changes in humidity and the wind drying out our skin, and often the products we use can cause the same drying effect. Soap, facial cleansers and toners are notorious for dehydrating our skin, and ironically due to the alcohol content, some moisturizers can actually cause the same effect.

SCIENCE

The epidermis consists of several layers with the outermost layers being keratinized cells held together by epidermal lipids. Secreted on the surface is a layer of sebum that provides moisturizing benefits. When the skin becomes dry, the layer of sebum is often stripped away, and the integrity of the epidermal lipids is less substantive. The keratinized cells separate and the skin becomes itchy and usually appears red, inflamed and cracked.

Code Number: 16503PF

INCI Name: Glycerin & Water & Sodium PCA & Urea & Trehalose & Polyquaternium-51 & Sodium Hyaluronate

INCI Status: Conforms

REACH Status: Complies

CAS Number: 56-81-5 & 7732-18-5 & 28874-51-3 & 57-13-6 & 99-20-7 & 125275-25-4 & 9067-32-7

EINCS Number: 200-289-5 & 231-791-2 & 249-277-1 & 200-315-5 & 202-739-6 & N/A & N/A

Origin: Botanical/Synthetic

Processing:

GMO Free
No Ethoxylation
No Irradiation
No Sulphonation

Additives:

Preservatives: None
Antioxidants: None
Other additives: None

Solvents Used: Glycerin, Water

Appearance: Slightly Hazy to Transparent Liquid

Soluble/ Miscible: Water Soluble

Ecological Information:
100% Biodegradability

Microbial Count:

< 100opg, No Pathogens

Suggested Use Levels: 1.0 – 10.0%

Suggested Applications:

Moisturizing, Barrier Formation, Hyaluronic Acid Alternative

Benefits of **AC Moisture-Plex Advanced PF:**

- Moisturizing
- Improves Barrier Integrity
- Reduces Evaporation
- Moisture and Lipid Balance

AC Moisture-Plex Advanced PF

Because the epidermis is comprised primarily of a lipid base, the topical application of glycerin may help hydrate the skin and prevent lipid damage. The sodium PCA in **AC Moisture-Plex Advanced PF** is also hygroscopic so it may help the skin stay moist. It is actually even more hygroscopic than either glycerin or sorbitol. Urea is capable of binding water in the stratum corneum to prevent water loss while effectively moisturizing the skin. Urea also functions as an effective exfoliating agent to help smooth and soften the skin, which normally becomes rough and flakey after desiccation. Both sodium PCA and urea are components of the body's natural moisturizing factors (NMF), which function as the body's methods to retain moisture.

Trehalose is a glucose disaccharide that facilitates osmo-regulation, and it can be found in fungi, bacteria, some amphibians and many invertebrates that are forced to survive in desiccating environments. It functions as a carbohydrate reserve in *Saccharomyces cerevisiae* to stabilize proteins during heat shock and suppresses denatured protein aggregation. Trehalose is also important for overcoming environmental osmotic and oxidative stresses. Topical application of the disaccharide may improve epidermal barrier function, and possibly prevent heat shock.

The polyquaternium-51 in **AC Moisture-Plex Advanced PF** is a hygroscopic polymer that stabilizes epidermal phospholipids while significantly improving moisture retention. Hyaluronic acid has been observed to increase the rate of cellular repair while minimizing the formation of scarred tissue, sodium hyaluronate is intended to facilitate cellular repair and renewal to minimize cracking and damage.

BENEFITS

AC Moisture-Plex Advanced PF is formulated to address all of these issues by improving barrier integrity, reducing evaporation, improving moisture balance and maintaining lipid balance while increasing cellular renewal. **AC Moisture-Plex Advanced PF** contains a complex of glycerin, sodium PCA, urea, polyquaternium-51 and sodium hyaluronate. Glycerin is hygroscopic and is often used as a humectant. It is derived from glycerides of natural vegetable lipids that are just like the glycerides in our own lipids.

EFFICACY DATA

As evidenced in a 4 week efficacy study of **AC Moisture-Plex Advanced PF** on skin, moisture levels were improved by 51.92% after 24 hours and by 61.28% after 4 weeks when compared to the untreated control. When compared to the base cream **AC Moisture-Plex Advanced PF** improved moisturization 17.83% better after 24 hours. After 4 weeks **AC Moisture-Plex Advanced PF** improved moisturization levels 44.30% better than the base lotion alone. Results indicate that **AC Moisture-Plex Advanced PF** is capable of increasing moisturization when compared to both the untreated control as well as the base lotion.

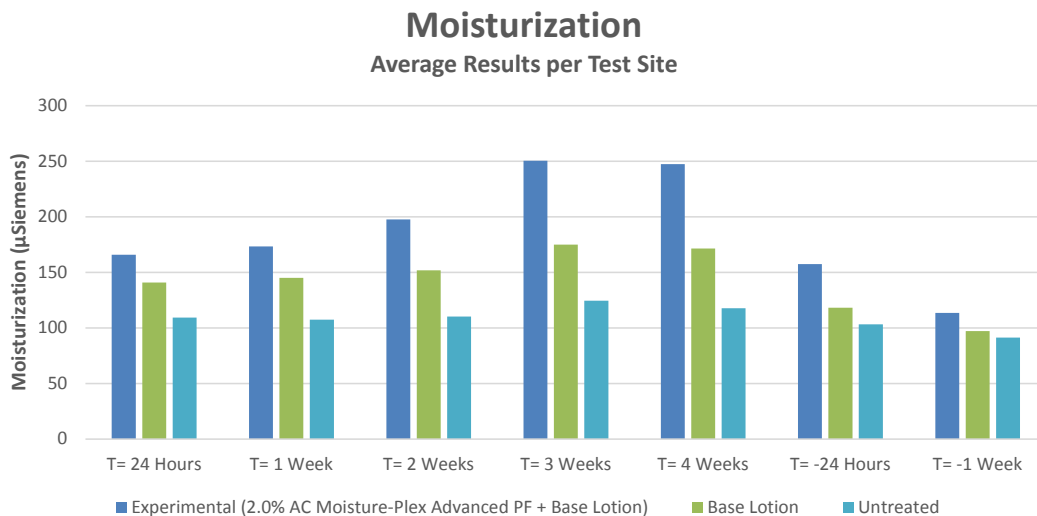


Figure 1. Improvements in Moisturization over time for **AC Moisture-Plex Advanced PF**

AC Moisture-Plex Advanced PF

Furthermore, when examining the moisture levels on the skin after application of test materials stopped, it was determined that **AC Moisture-Plex Advanced PF** is capable of sustaining increased skin moisturization when compared to the skin site that remained untreated through the duration of the study. After 24 hours, the site testing 2.0% **AC Moisture-Plex Advanced PF** + Base Lotion was approximately 52.47% more moisturized than the site which received no treatment. After one week, the experimental test site was still yielding moisturization results that were 24.38% better than the untreated site. Additionally, in comparison to the site tested with the base lotion alone, the site treated with 2.0% **AC Moisture-Plex Advanced PF** + Base Lotion moisturized the skin 33.40% better after 24 hours and was still 16.86% more effective in moisturizing the skin when reading were taken one week after the applications of both test materials ceased.

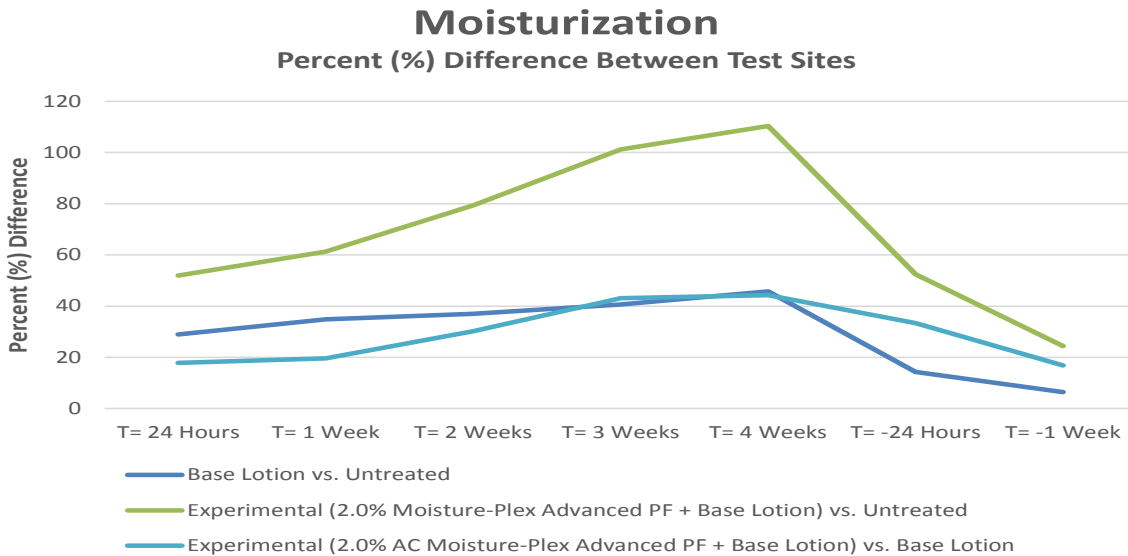


Figure 2. Percent difference between test sites for **AC Moisture-Plex Advanced PF**

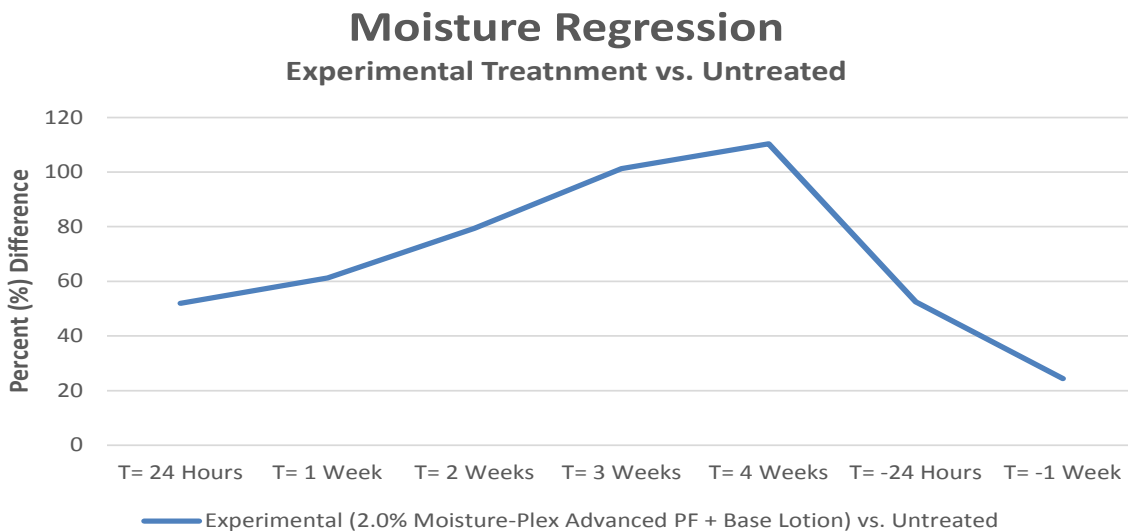


Figure 3. Moisture Regression