

# Kostol STMS

## Moisture Evaluations

### INTRODUCTION

Kostol STMS is a high performing O/W cosmetic emulsifier that will moisturize and soften the skin after initial use and over time. This cationic emulsifier produces superior white emulsions at multiple viscosities with effective spreading and film forming properties. The film deposited onto the skin provides a breathable barrier.

### BENEFITS

- Increases skin moisturization with initial application
- Increased skin hydration over time
- Moisturizes skin in both wash-off and leave-on applications
- Increased spreadability in emulsions
- Provides a breathable barrier on the skin
- Formulation compatibility with sunscreens, pigments, and silicones

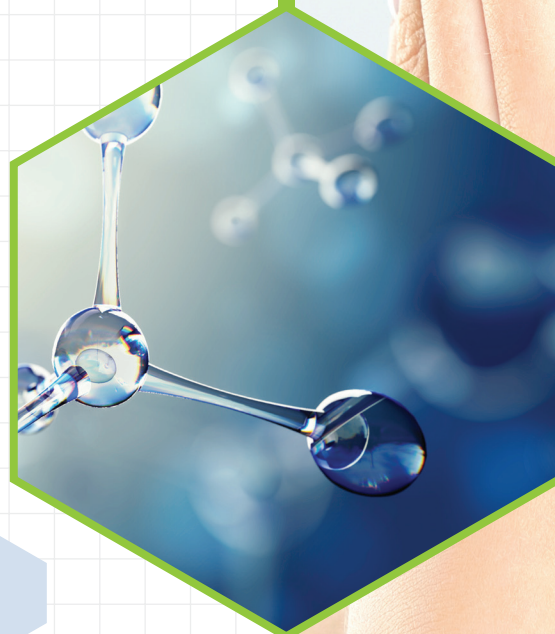
### APPLICATIONS

- All leave-on emulsions including creams, lotions, and sprayable lotions.
- Body, hand and face washes
- In-shower body lotions
- Shave products, 2-in-1 products, men's formulations
- Hair care including shampoos, conditioners, masks and styling aids

\*Hair studies available for conditioning, color retention, frizz control, foam, smoothness and softness.

### CHEMISTRY

INCI: Cetearyl Alcohol, Behentrimonium Methosulfate, Bis-PEG-18 Methyl Ether Dimethyl Silane



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# Moisturization Study: Leave-On

## TEST

Subjects applied control lotion and Kostol STMS lotion following the test protocol. Skin was measured (DPM 9003 skin impedance meter) for moisture retention initially and then every hour for 6 hours.

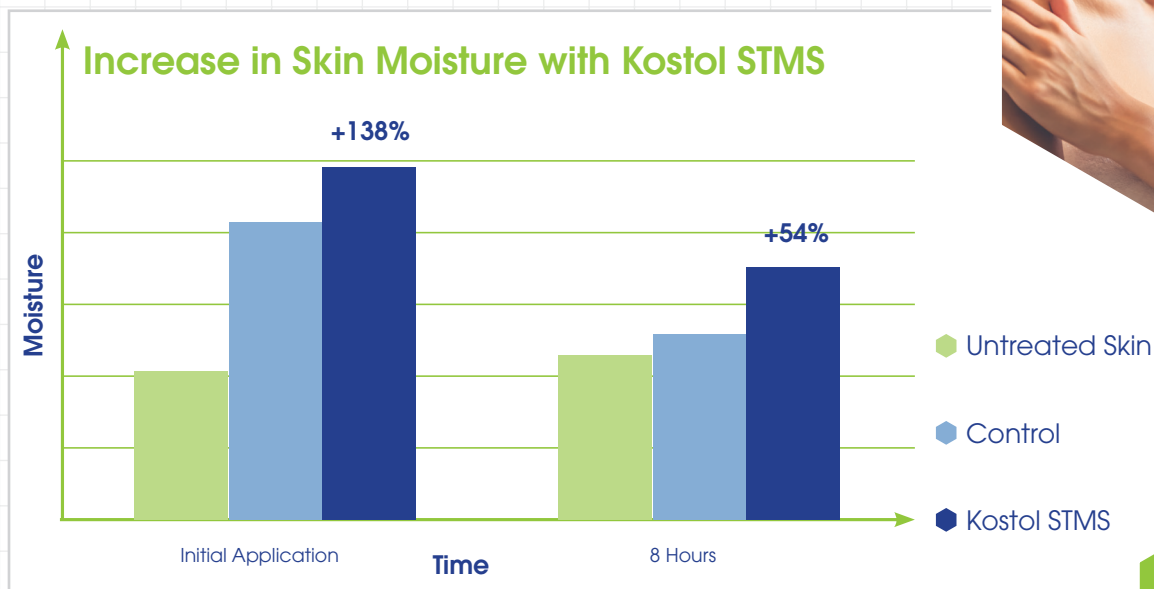
## Moisturizing Lotion Formula & Control Formula

Trade Name	INCI	%	%
<b>Phase A</b>			
Deionized Water	Aqua	83.9	83.9
Glycerin	Glycerin	3.0	3.0
Optiphen	Phenoxyethanol, Caprylyl Glycol	0.6	0.6
<b>Phase B</b>			
Kostol STMS*	Cetearyl Alcohol, Behentrimonium Methosulfate, Bis-PEG-18 Methyl Ether Dimethyl Silane	3.5	--
Kostol IBT *	Cetearyl Alcohol, Behentrimonium Methosulfate	--	3.5
Dermol 1818	Isostearyl Isostearate	3.0	3.0
Sunflower oil	Helianthus Annuus (Sunflower) Seed Oil	4.0	4.0
Jajoba Oil	Simmondsia Chinesis (jojoba) Seed Oil	2.0	2.0

\*Koster Keunen Ingredients

## RESULTS

- Documented results of skin moisture up to 136% increase after initial applications.
- On average 67% increase of skin moisture over 6 hours.
- Sensory results show better skin feel and improved spreadability of emulsion over commodity ingredients.



Up to  
**136%**  
Increase in Skin  
Moisturization



# Moisturization Study: Wash Off

## TEST

Subjects applied control, an in-shower body lotion with a conventional emulsifier and in-shower body lotion with Kostol STMS following the test protocol. Skin was washed, dried, and then measured (DPM 9003 skin impedance meter) for moisture retention initially and every hour for 6 hours.

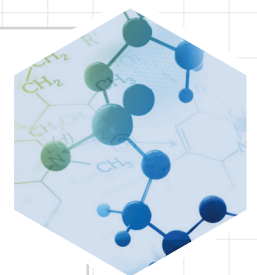
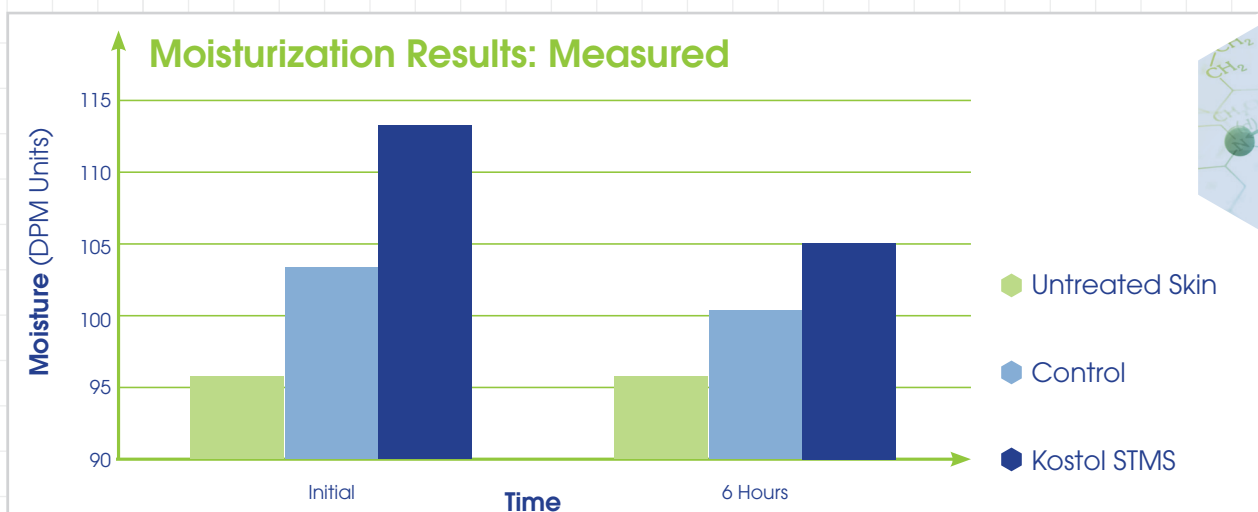
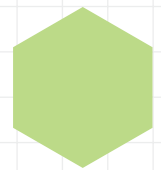
## In-Shower Body Lotion & Control Formula

Trade Name	INCI	%	%
Phase A			
Deionized Water	Aqua	81.3	81.3
Glycerin	Glycerin	4.0	4.0
Optiphen	Phenoxyethanol, Caprylyl Glycol	1.0	1.0
Jaguar C-17	Guar Hydroxypropyltrimonium Chloride	0.2	0.2
Phase B			
Kostol STMS*	Cetearyl Alcohol, Behentrimonium Methosulfate, Bis-PEG-18 Methyl Ether Dimethyl Silane	4.0	--
Emulsifying Wax NF*	Cetearyl Alcohol, Polysorbate 60	--	4.0
AR Cocoa Butter*	Theobroma Cacao (Cocoa) Seed Butter	2.0	2.0
Lipomulse 165	Glyceryl Stearate (and) PEG-100 Stearate	0.5	0.5
Cetyl/Stearyl 1618	Cetearyl Alcohol	2.0	2.0
Petrolatum	Petrolatum	5.0	5.0

\*Koster Keunen Ingredients

## RESULTS

- Skin hydration levels are doubled when treated with Kostol STMS formula vs the control.
- Documented results of moisturization retention for test length (6 hours).
- On average 18% higher moisturization using Kostol STMS formula after wash off vs control.
- The Kostol STMS formula out performs current market products in moisturization
- Sensory results confirm that the Kostol STMS formula was less greasy and gave a drier after feel vs the control formula.



*Lasting Moisturization  
& Skin Hydration*



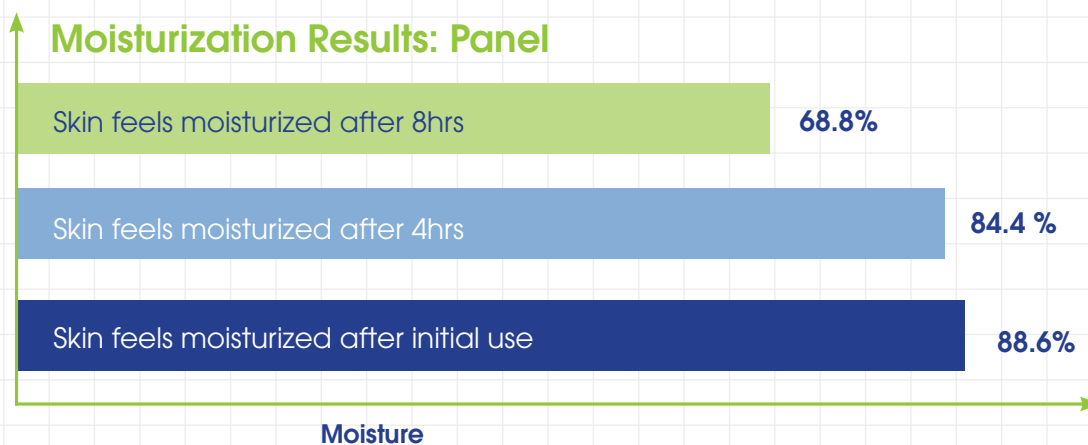
# Sensory Panel: Wash Off

## TEST

Panelists applied and compared control body wash and in-shower body lotion with Kostol STMS following the test protocol. Skin was washed, dried, and evaluated initially, after 4 hours, and after 8 hours.

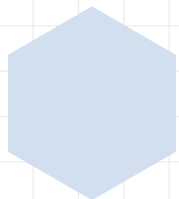
## RESULTS

- Kostol STMS deposits a breathable film without feeling sticky.
- Wash-off formulas using Kostol STMS rinse off clean.
- Over 75% of panelists felt they had softer skin after use.
- Kostol STMS provides better wash-off feel and still deposits on the skin for silky soft skin.
- Over 75% of panelists felt more moisturized over the control



## Formulating with Kostol STMS:

- Kostol STMS can be used in virtually any hair or skin care formula as the primary emulsifier.
- Recommended use levels for an emulsion are 2-6 %.
- Kostol STMS is self-emulsifying. At high levels it will make thick, creamy emulsions. It can be pre melted with other fatty alcohols for increased thickness or with a wide range of esters, oils and waxes for many desired properties.
- At low levels it produces thin, sprayable emulsions, which remain stable.
- The most effective emulsions are obtained when Kostol STMS is combined with a co-emulsifier. Optimum combinations will incorporate high concentrations of desired actives to an emulsion, such as silicones and oils, including sunscreens and pigment dispersions.
- Due to its cationic nature, the remaining formula ingredients should be either neutral or also cationic.



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