



# SORBITHIX L-100

INCI Name: Sorbeth-230 Tetraoleate (and) Decyl Glucoside (and) Sorbitan Laurate

**A Transformative New Non-Ionic Associative Thickener**

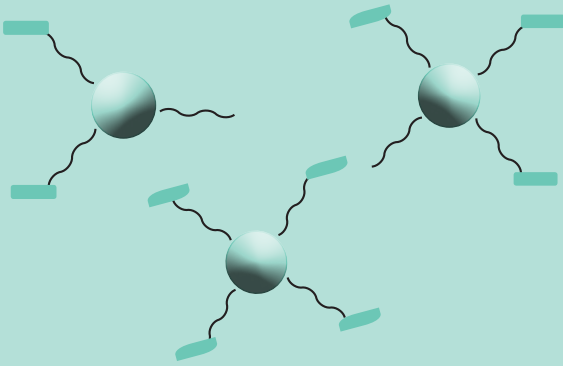
*Patent Pending*

Suitable for all personal cleansing formulations

**applechem**  
create possibilities

# THE SORBITHIX DIFFERENCE

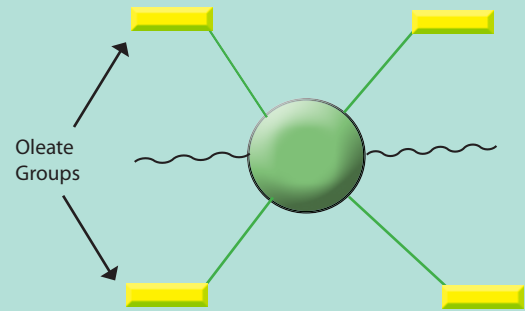
## Current Commercial Thickeners



Non-ionic associative thickeners, by and large, have similar molecular structures - **they are all polymer molecules comprised of variable numbers of "arms"**.

Current commercial thickeners have a maximum of 4 arms, with 2 to 4 arms capped off.

## Sorbeth-230 Tetraoleate



VS.

**A brand new molecule featuring 6 arms.**

4 arms are "capped" with a hydrophobic oleate group, leaving two arms uncapped.

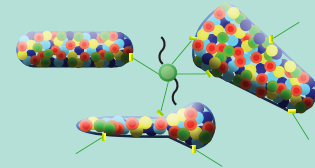
More arms equal stronger thickening power!



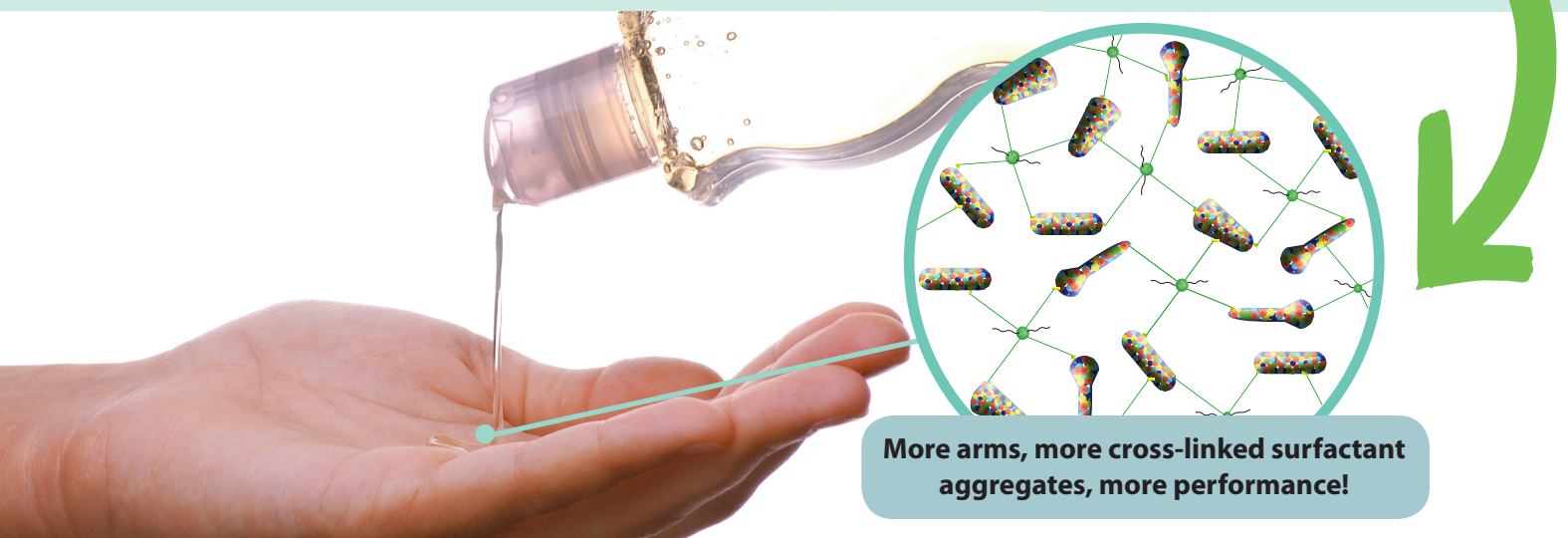
Uncapped arms are hydrophilic and help to boost water solubility and formulation clarity.



The hydrophobic oleate groups on the "capped" arms ...



... are drawn towards and inserted into surfactant aggregates of all shapes and sizes within the formulation.



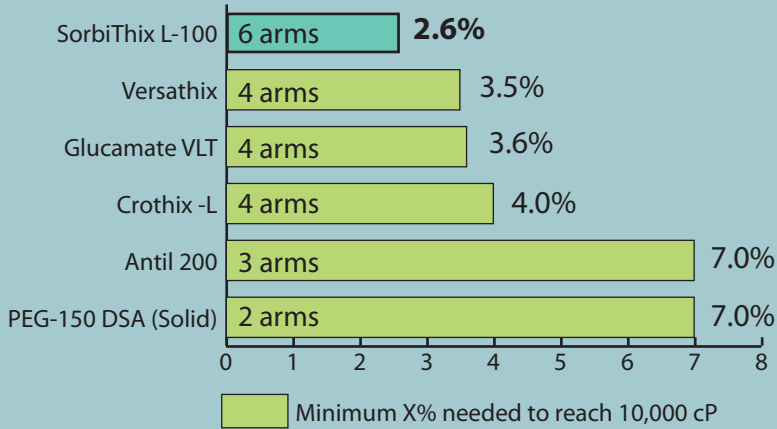
**More arms, more cross-linked surfactant aggregates, more performance!**

Because it features 2 additional arms, Sorbeth-230 Tetraoleate is able to attach to many more adjacent surfactant aggregates, which leads to much stronger performance in all types of surfactant systems while maintaining formulation clarity.

# MAXIMUM PERFORMANCE IN ALL SURFACTANT SYSTEMS

SorbiThix L-100 features best-in-class efficiency in every surfactant system, from sulfates to sulfate-free.

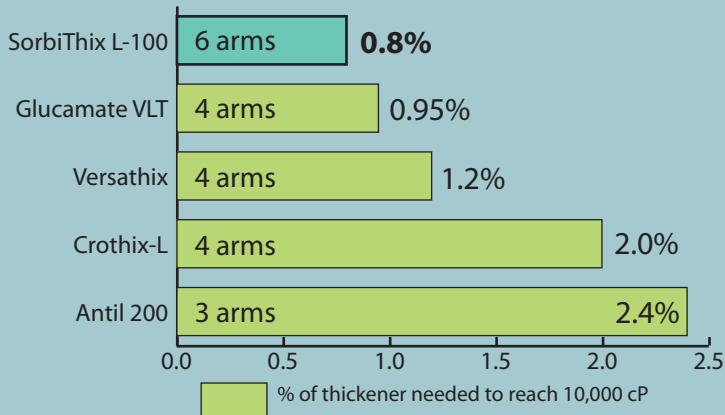
## Glutamate Surfactant Dosage Comparison



## Glutamate Model Formulation

INCI Name	%
Sodium Cocoyl Glutamate (100%)	8.67
Cocamidopropyl Betaine (35%)	8.0
Cocamidopropyl Hydroxysultaine (50%)	4.0
Glyceryl Mono Laurate (GML)	1.0
Sodium Chloride	1.0
Tetra Sodium EDTA	0.1
<b>NON-IONIC THICKENERS</b>	<b>X%</b>
Citric Acid added to create pH 6	
Water	To 100%

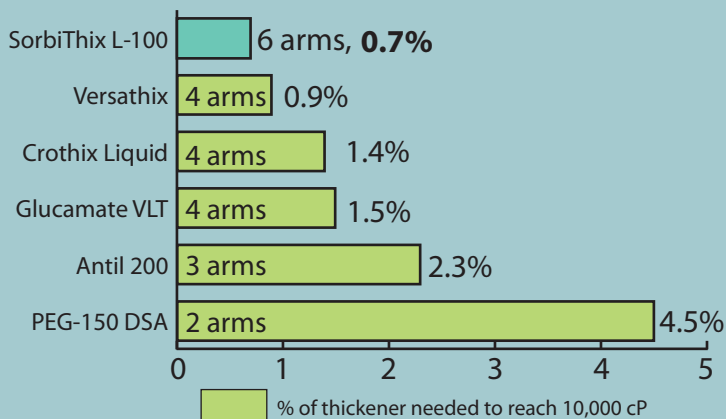
## Sulfate-Free SLI Dosage Comparison



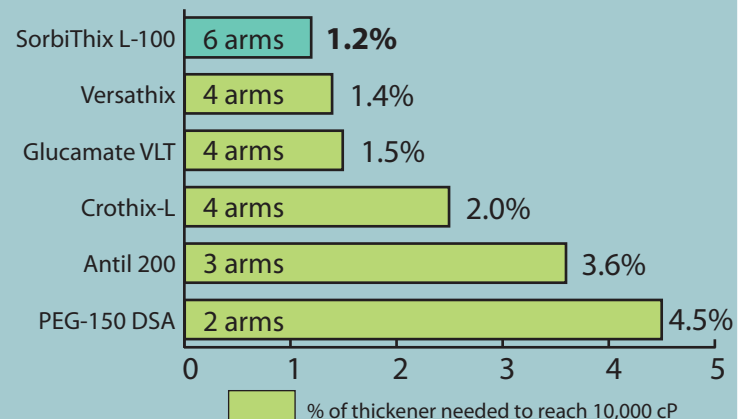
## SLI Model Formulation

INCI Name	%
Decyl Glucoside (50%)	12.2
Sodium Lauroyl Methyl Isethionate	5.0
Cocamidopropyl Betaine (35%)	10.0
Glyceryl Monolaurate	1.0
<b>NON-IONIC THICKENERS</b>	<b>X%</b>
Citric Acid added to create pH 6.5	Q.S.
Water	To 100%

## SLS/SLES Dosage Comparison



## Sulfate-Free AOS Dosage Comparison



Model Formula: Sulfate Freedom! Clear Shampoo, SH-001

Model Formula: Sulfate Freedom! Clear Shampoo, SH-001

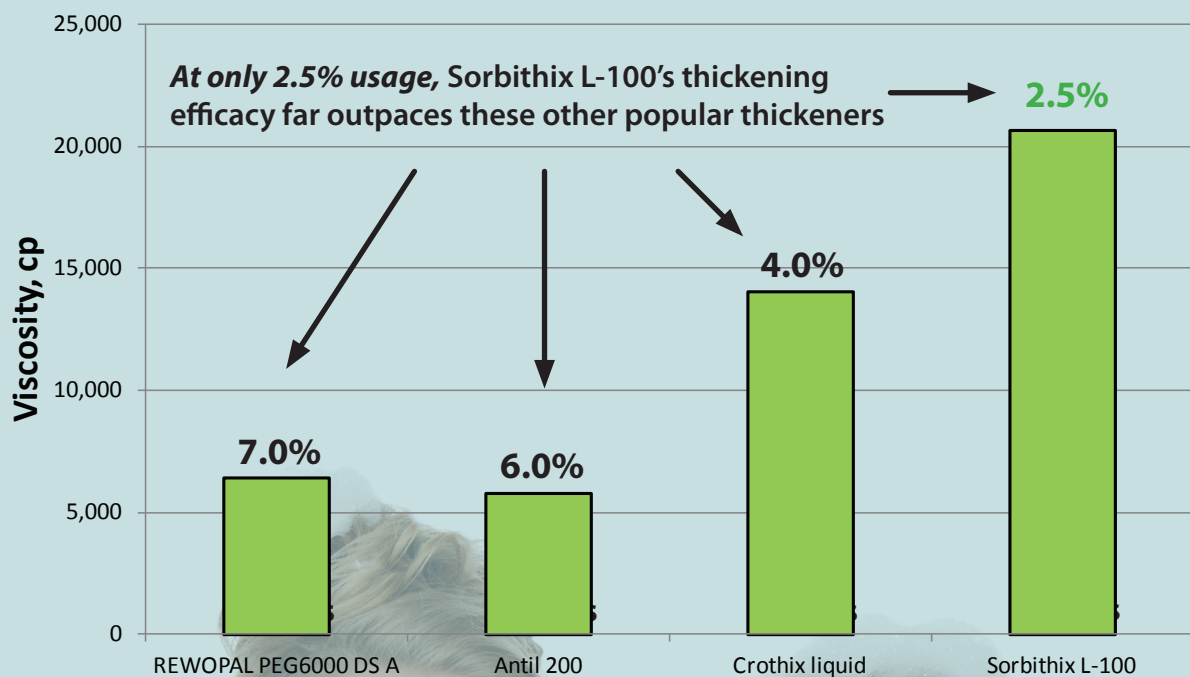
## UNPARALLELED TOLERANCE FOR FRAGRANCES AND GLYCOLS

Increasing fragrance usage in shampoos has always been very difficult to maintain sufficient viscosity and clarity, and attempts to combat this with traditional tools like salt and solubilizers only serve to upset the delicate balance between sensory, viscosity, and transparency.

All of these factors contribute to decreasing the size of the surfactant aggregates, making it harder for traditional thickeners to thicken effectively.

Sorbithix L-100 is an exciting new development, as its unique molecular structure allows shampoos to retain thickening efficacy, strong clarity, and foaming intensity at up to **3% fragrance usage!**

### Viscosity Comparison in SLES Shampoo Containing 3% Fragrance



Formulation Base: Water, SLES (70%) 20%; Cocamidopropyl Betaine 10%, 3% Fragrance  
Total active: 17.5%, pH 5.5



# USES AND BENEFITS

## Manufacturing Friendly

- Extremely high actives (**73%**)
- Low viscosity liquid for ease of use
- **Excellent Flexibility** - consistent, superior performance when added during any production step

## Applications

- Shampoos
- Facial Cleansers
- Hand Cleansers
- Shower Gels
- Foaming Bath Products
- Conditioners
- Styling Products

## Derived from natural sorbitol

## Formulation Guidelines

- Standard use level: 0.4% to 5% (dependent on fragrance, solubilizer usage)
- Can be used in cold process manufacturing, add at 35°C or greater for faster processing
- Compatible with anionic, cationic, amphoteric surfactants, and polymers
- Suitable for pH ranges from 4.5 to 7.5, works between pH 5-7

## Mild and Non-Irritating

### Hen's Egg Test Chorioallantoic Membrane Test (Alternative to the animal Draize test):

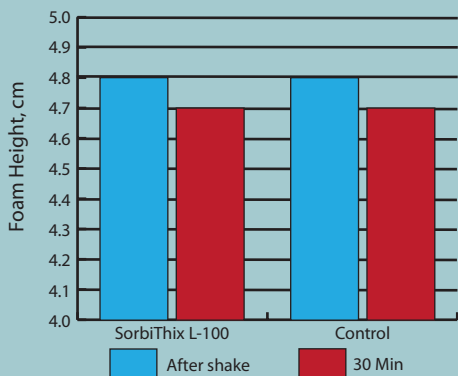
- Zero "irritation score" for 5% SorbiThix L-100

### Repeated Insult Patch Test on 52 subjects:

- Dermatologist-Tested, No skin irritation or allergic contact dermatitis in both of induction phase and challenge phase

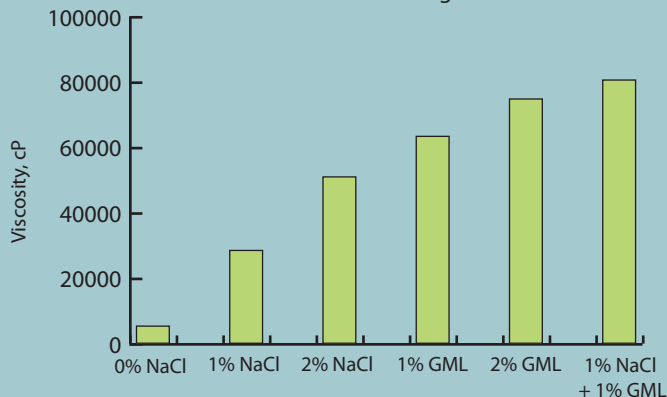
## Neutral Effect on Foaming

Cylinder Shake Foam Test Method using 1% GML, 1% NaCl, 2.5% SorbiThix L-100



## Synergy with Salt and Hydrophobic Thickeners

SorbiThix L-100 Dosage: 1.5%



# Sulfate Freedom! Clear Shampoos (SH-001)

Sulfate Freedom! Clear Shampoos are a brand new line of clear, richly textured shampoos showcasing Sorbithix L-100's powerful multi-surfactant thickening ability.

Whether you're using sulfates or moving on to sulfate-free formulations, Sorbithix L-100 gives you the freedom to change up your shampoos without losing clarity, foaming, or viscosity.

Our Sulfate Freedom! Clear Shampoos comes in three different variations: sodium lauryl sulfate, sodium olefin sulfonate, and sodium cocoyl glutamate.

Part	Chemical Name	SLES	AOS	SCG
1	Water	To 100%	To 100%	To 100%
2	Disodium EDTA	0.1	0.1	0.1
3	Guar Hydroxypropyltrimonium Chloride	0.1	0.1	0.1
4	Glycerin	1.0	1.0	1.0
5	Cocamidopropyl Betaine (35% active)	10.0	10.0	8.0
6	Cocamidopropyl Hydroxysultaine (ColaTeric CBS-HP, 50% active)	-	-	4.0
7	Decyl Glucoside	-	6.0	-
8	SLES Solution (70%)	14.0	-	-
9	Sodium C <sub>14-16</sub> Olefin Sulfonate (Bioterge AS-90 Bead)	1.0	8.0	-
10	Sodium Cocoyl Glutamate (SCG) (Amisoft CS-11)	-	-	9.0
11	Sodium Chloride	0.5	-	-
12	Cocamide MEA	0.5	1.0	-
13	Amodimethicone (and) C <sub>11-15</sub> Pareth-7 (and) Laureth-9 (and) Glycerin (and) Trideceth	-	1.0	-
14	Aqua (and) Silicone Quaternium-18 (and) Trideceth-6 (and) Trideceth-12 (Silsoft Q PMF)	-	-	1.0
15	<b>SORBITHIX L-100</b>	<b>0.7</b>	<b>1.2</b>	<b>3.7</b>
16	Fragrance	0.5	0.5	0.5
17	Citric Acid to pH 5.5	q.s.	q.s.	q.s.
18	Symsave H + Euxyl PE9010 (1:1 blend)	1.0	1.0	1.0

## PROCESSING INSTRUCTIONS

**Viscosity: 10,000 cP, pH 5.5**

1. Mix Part 1 and 2 and heat to 60°C
2. Pre-mix Parts 3 and 4, and then add to vessel while continuing to mix.
3. Add Parts 5 through 15 while continuing to mix at 60°C.
4. Lower temperature down to 40°C before adding Part 16-18 under agitation.



# Clear n' Effervescent Shampoos (SH-002)

A classic formulation challenge with a modern solution!

Salt, perfume, hydrophobic thickeners, fragrance solubilizers can cause unexpected negative effects on clarity and viscosity when reaching certain concentration thresholds, but Sorbithix L-100's thickening power can overcome these traditional formulation issues.

Our Clear n' Effervescent Shampoos use a 3% fragrance concentration while still retaining high clarity, strong viscosity, and good foaming.

Part	Chemical Name	SLES	AOS	SCG
1	Water	68.4	68.4	70.1
2	Disodium EDTA	0.1	0.10	0.1
3	Guar Hydroxypropyltrimonium Chloride	0.1	0.10	0.1
4	Glycerin	1.0	1.0	1.0
5	Cocamidopropyl Betaine (35% active)	10.0	10.0	8.0
6	Cocamidopropyl Hydroxysultaine (ColaTeric CBS-HP, 50% active)	-	-	4.0
7	Decyl Glucoside	-	6.0	-
8	Sodium Cocoyl Glutamate (SCG) (Amisoft CS-11)	-	-	9.0
9	Sodium Lauryl Ether Sulfonate (70%)	14.0	-	-
10	Sodium C <sub>14-16</sub> Olefin Sulfonate (Bioterge AS-90 Bead)	-	8.0	-
11	Amodimethicone (and) C <sub>11-15</sub> Pareth-7 (and) Laureth-9 (and) Glycerin (and) Trideceth	1.0	1.0	-
12	Aqua (and) Silicone Quaternium-18 (and) Trideceth-6 (and) Trideceth-12 (Silsoft Q PMF)	-	-	1.0
13	<b>SORBITHIX L-100</b>	<b>2.45</b>	<b>2.45</b>	<b>3.75</b>
14	Wild Currant & Orange Flower Fragrance (Creative Concepts 8661)	3.00	3.00	3.00
15	Citric Acid to pH 5.5	q.s.	q.s.	q.s.
16	Symsave H + Euxyl PE9010 (1:1 blend)	1.0	1.0	1.0

## PROCESSING INSTRUCTIONS

**Viscosity: 10,000 cP, pH 5.5**

1. Mix Part 1 and 2 and heat to 60°C
2. Pre-mix Parts 3 and 4, and then add to vessel while continuing to mix.
3. Add Parts 5 through 13 while continuing to mix at 60°C.
4. Lower temperature down to 40°C before adding Part 14-16 under agitation.

## Distributors

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