



# Amphi<sup>®</sup> Sophorolipids

High-activity, multifunctional biosurfactants for use in Coatings, Adhesives, Sealants and Elastomers (CASE) applications.

Class Sophorolipids

TSCA Certified\*



## NATURAL

USDA certified as 100% biobased



## SUSTAINABLE

Readily biodegradable with industry-low toxicity



## GENTLE

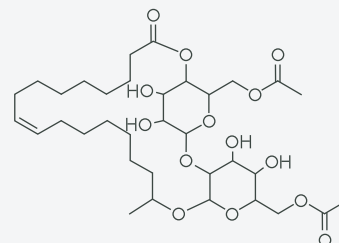
Safe and mild at use level without sacrificing performance



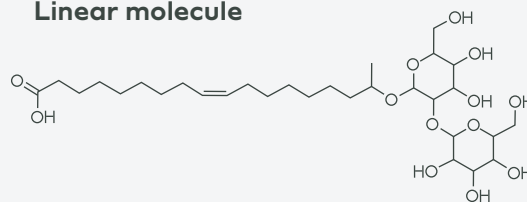
## MULTIFUNCTIONAL

Non-ionic and anionic uses, can act as primary or secondary surfactants

### Lactonic molecule



### Linear molecule



## UNMATCHED

### in Performance and Sustainability

- ✓ High activity levels
- ✓ Lower usage rates
- ✓ Replace petrochemical surfactants
- ✓ Less water used in manufacturing
- ✓ Higher efficacy
- ✓ Low carbon footprint

## FREE from

- ✗ Palm oil
- ✗ 1, 4-dioxane
- ✗ Ethylene oxide
- ✗ Formaldehyde
- ✗ Proposition 65 chemicals

**PLUS...** Enables low VOC formulations

\*Amphi<sup>®</sup> CL & CH TSCA pending

## Applications

Amphi® biosurfactants are versatile solutions with unique properties:

- ✓ **Wide HLB 6–12**
- ✓ **Surface tension reduction**
- ✓ **Low CMC**
- ✓ **Small micelle size**
- ✓ **Non-ionic and anionic character**

In formulations, Amphi® enhances performance by acting as a:



### DISPERSANT

Performed well against Industry standards with TiO<sub>2</sub>, with more pigments being tested



### WETTING AGENT

Efficient wetting times, with new blended versions in development to enhance solubility needs



### EMULSIFIER

Natural ingredient for emulsion polymerization and potential for alkyd resin emulsions



### COALESCING AGENT

Can be used in low concentrations with no negative impact on coating properties

## Formulating the Future:

**Effective date:** January 9, 2023

Parameter	Test	Amphi® M	Amphi® CL	Amphi® CH
Appearance	QC 017	Translucent to clear, amber liquid	Translucent to clear, amber liquid	Translucent to clear, amber liquid
Odor	QC 016	Odorless to slight acidic or sweet smell	Odorless to slight acidic or sweet smell	Odorless to slight acidic or sweet smell
Total sophorolipid content (wt%)	QC 023	≥50	≥50	≥50
Residual oleochemicals (wt%)	AC 002	≤5	≤5	≤5
pH at 0.1% in DI water	QC 005	4.0-5.5	4.0-5.0	4.5-5.5