**STEPAN PERSONAL CARE SPECIALTY SURFACTANTS** can be used in a variety of Personal Care cleansing applications, such as shampoo, body wash, hand soap, bar soap, cleansing products for children, and facial cleanser. The featured products are manufactured to maximize foam quality, viscosity building characteristics and skin after-feel in formulated products.

**Highlighted Surfactants**

**LATANOL® LAL Products** - Mild, sulfate-free surfactants that effectively build viscosity and generate luxurious, creamy and long-lasting lather.

**STEPAN-MILD® LSB** - A mild, sulfate-free surfactant blend that easily builds viscosity and provides creamy stable foam.

**STEPAN-MILD® PCL** - A mild, high foaming, sulfate-free surfactant blend suitable for use in high viscosity cleansing products.

**AMPHOSOL® CDB Special** - An amphoteric surfactant designed to improve the viscosity response of traditional anionic and sulfate-free surfactant systems.

**ALPHA-STEP® PC-48** - A mild, sulfate-free anionic surfactant which is suitable for formulating a high-foaming, high active product in a wide variety of Personal Care applications.
**INCI NAME**
Sodium lauryl sulfoacetate

**TYPICAL PROPERTIES**

- Appearance at 25°C
  - LATHANOL® LAL Powder: Powder
  - LATHANOL® LAL Flake: Flake
  - LATHANOL® LAL Coarse: Powder
- pH (1% in H₂O): 6.3
- Actives, %: 65 min.
- Color, Klett: 40 max.

**FUNCTIONAL PROPERTIES**
- Provides rich, creamy foam
- Excellent foam stability
- Great viscosity building response
- Milder to skin than ethoxylated Alcohol sulfates
- Replaces soap whenever soap sensitization is found
- Provides luxurious, silky skin feel

**APPLICATIONS**
- Shampoo
- Body wash
- Facial cleanser
- Hand soap
- Liquid soap
- Soap (syndet) bar
- Bubble bath
- Baby liquid cleansing product
- Cleansing cream
- Oral care

**PERFORMANCE ADVANTAGES**
Performance advantages are illustrated in an ALPHA-STEP® PC-48 and AMPHOSOL® HCG system (Control, 12:3 actives ratio) with partial replacement of ALPHA-STEP® PC-48 with LATHANOL® LAL Powder on an actives basis.

**Foaming Properties**

<table>
<thead>
<tr>
<th>Foam Height, ml</th>
<th>Control</th>
<th>2% LAL</th>
<th>4% LAL</th>
<th>6% LAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>170</td>
<td>180</td>
<td>195</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>115</td>
<td>130</td>
<td>130</td>
<td>135</td>
</tr>
</tbody>
</table>

LATHANOL® LAL Powder shows increased flash foam and maintains foam stability compared to the control.

**Viscosity Building Properties**

LATHANOL® LAL Powder shows improved viscosity response compared to the control.
**LATHANOL® LAL Products**

**PERFORMANCE ADVANTAGES**

**Sensory Properties**

*In-vivo Hand Wash Test (12 panelists)*

Foam Feel

Foam Density

Skin Softness

Skin Dryness

Skin Tightness

The numbers reflect the average score given to a sample (0=worst, 5=best). LATHANOL® LAL Powder shows improved sensory properties compared to the control on a percent actives basis.

**Foam Volume**

*In-vivo Hand Wash Test (12 panelists)*

The numbers reflect the average score given to a sample. LATHANOL® LAL Powder shows improved foam volume compared to the control on a percent actives basis.

**Foam Appearance**

(Lacy → Dense)

Control 2% LAL 4% LAL 6% LAL

**NATURALLY-DERIVED, COLOR CARE, SULFATE-FREE SHAMPOO (No. 1189)**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>AMPHOSOL® HCG</td>
<td>12.9</td>
</tr>
<tr>
<td>AMPHOSOL® 2CSF</td>
<td>7.0</td>
</tr>
<tr>
<td>ALPHA-STEP® PC-48</td>
<td>7.8</td>
</tr>
<tr>
<td>LATHANOL® LAL Powder</td>
<td>7.0</td>
</tr>
<tr>
<td>STEPAN-MILD® GCC</td>
<td>0.3</td>
</tr>
<tr>
<td>Citric acid, 50% solution</td>
<td>q.s.</td>
</tr>
<tr>
<td>Fragrance, dye &amp; preservative</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

**“LOTION-LIKE” BODY WASH (No. 847)**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>STEOL® CA-230</td>
<td>80.0</td>
</tr>
<tr>
<td>PEG-150/Decyl Alcohol/SMDI</td>
<td>2.6</td>
</tr>
<tr>
<td>Copolymer</td>
<td></td>
</tr>
<tr>
<td>LATHANOL® LAL Flake</td>
<td>5.0</td>
</tr>
<tr>
<td>NINOL® LMP</td>
<td>2.0</td>
</tr>
<tr>
<td>Glycol stearate</td>
<td>1.5</td>
</tr>
<tr>
<td>Citric acid, 50% solution or</td>
<td>q.s.</td>
</tr>
<tr>
<td>Sodium hydroxide, 50% solution</td>
<td></td>
</tr>
<tr>
<td>Preservative</td>
<td></td>
</tr>
</tbody>
</table>

The formulations noted in this brochure may require mixing and heating capabilities. For formulation procedures, please contact Stepan's U.S. Technical Service Department or visit Stepan's website at www.stepan.com.
INCI NAME
Sodium lauryl sulfoacetate (and)
Disodium laureth sulfosuccinate

TYPICAL PROPERTIES
Appearance at 25°C  Clear liquid
pH (10% in H₂O)      6.0
Actives, %           25
Solids, %            33
Color, Gardner       1
Viscosity at 25°C, cps 3,000

FUNCTIONAL PROPERTIES
- Provides rich, creamy foam
- Excellent foam stability
- Exceptional foaming in hard water
- Great viscosity building response
- Less irritating than Lauryl sulfates and Lauryl ether sulfates

APPLICATIONS
- Shampoo
- Body wash
- Facial cleanser
- Hand soap
- Liquid soap
- Baby liquid cleansing product
- Bubble bath

BENEFITS
- Contains no Alkyl sulfates or Alkyl ether sulfates
- Sulfate-free
- Easily formulated without heating
- Readily biodegradable

Foaming Properties
Shake Foam Test (0.2% active solution at 25°C)
Formulation: 10% active STEPAN-MILD® LSB and 3% active Cocamidopropyl betaine

Viscosity Building Properties
Formulation: 12% active STEPAN-MILD® LSB and 3% active Cocamidopropyl betaine

NATURALLY-DERIVED, SULFATE-FREE, MOISTURIZING SHAMPOO & BODY WASH (No. 1119)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>STEPAN-MILD® LSB</td>
<td>40.0</td>
</tr>
<tr>
<td>AMPHOSOL® CS-50</td>
<td>6.0</td>
</tr>
<tr>
<td>STEPAN-MILD® GCC</td>
<td>0.5</td>
</tr>
<tr>
<td>STEPAN-MILD® L3</td>
<td>0.5</td>
</tr>
<tr>
<td>Panthenol</td>
<td>0.5</td>
</tr>
<tr>
<td>Citric acid, 50% solution or Sodium hydroxide, 50% solution</td>
<td>q.s.</td>
</tr>
<tr>
<td>Fragrance, dye &amp; preservative</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

SHOWER GEL (No. 697)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>Glycerin</td>
<td>0.5</td>
</tr>
<tr>
<td>STEPAN-MILD® LSB</td>
<td>24.0</td>
</tr>
<tr>
<td>LITHANOL® LAL Powder</td>
<td>4.6</td>
</tr>
<tr>
<td>AMPHOSOL® LB</td>
<td>12.7</td>
</tr>
<tr>
<td>Fragrance, dye &amp; preservative</td>
<td>q.s.</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>q.s.</td>
</tr>
<tr>
<td>Citric acid or Sodium hydroxide</td>
<td>q.s.</td>
</tr>
</tbody>
</table>
**INCI NAME**
Sodium methyl 2-sulfolaurate (and) Disodium 2-sulfolaurate (and) Sodium lauryl sulfoacetate

**TYPICAL PROPERTIES**
- Appearance at 25°C: Clear liquid
- pH (10% in H2O): 6.0
- Actives, %: 23
- Solids, %: 30
- Color, % Transmittance at 425 nm: 80
- Viscosity at 25°C, cps: 1,400

**BENEFITS**
- Naturally-derived
- EO/PO free
- Contains no Alkyl sulfates or Alkyl ether sulfates
- Sulfate-free
- Easy mixing, handling
- Great choice for pump and foam applications

**FUNCTIONAL PROPERTIES**
- Provides rich, creamy foam
- Excellent foam stability
- Fast viscosity response with low level of added salt
- Less irritating than Lauryl sulfates and Lauryl ether sulfates
- Excellent skin after-feel
- Non-stringing

**APPLICATIONS**
- Shampoo
- Body wash
- Facial cleanser
- Hand soap
- Liquid soap
- Bubble bath
- Baby liquid cleansing product

---

**Foaming Properties**
*Shake Foam Test (0.2% active solution at 25°C)*
Formulation: 10% active STEPAN-MILD® PCL and 5% active Cocamidopropyl betaine

<table>
<thead>
<tr>
<th>Foam Height, ml</th>
<th>Initial</th>
<th>5 Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>With oil</td>
<td>500</td>
<td>450</td>
</tr>
<tr>
<td>No oil</td>
<td>400</td>
<td>350</td>
</tr>
</tbody>
</table>

---

**Clear Foaming Cleanser**
(No. 1053)

**Ingredients**
- Deionized water: q.s. to 100.0
- STEPAN-MILD® PCL: 27.5
- AMPHOSOL® HCG: 3.3
- Glycerin: 0.5
- Citric acid or Sodium hydroxide: q.s.
- Preservative, dye & fragrance: q.s.

---

**Viscosity Building Properties**
Formulation: 10% active STEPAN-MILD® PCL and 5% active Cocamidopropyl betaine

---

**Pearlescent, Naturally-Derived, Sulfate-Free Conditioning Shampoo**
(No. 1094)

**Ingredients**
- Deionized water: q.s. to 100.0
- Glycerin: 0.5
- Tetrasodium EDTA: 0.1
- STEPAN-MILD® PCL: 38.0
- AMPHOSOL® HCG: 10.0
- STEPAN-MILD® GCC: 0.3
- Glycol distearate: 0.5
- Panthenol: 0.2
- Citric acid, 50% solution or: q.s.
- Sodium hydroxide, 50% solution: q.s.
- Sodium chloride: q.s.
- Preservative, dye & fragrance: q.s.
AMPHOSOL® CDB Special

INCI NAME
Cetyl betaine

TYPICAL PROPERTIES
- Appearance at 25°C: Clear liquid
- pH (10% in H₂O): 6.0
- Actives, %: 30
- Solids, %: 37
- Color, Gardner: 1
- Viscosity at 25°C, cps: 50-300

FUNCTIONAL PROPERTIES
- Foaming agent
- Viscosity builder
- Milder to the skin than ethoxylated Alcohol sulfates
- Antistatic control agent
- Compatible with anionics, nonionics and cationics

APPLICATIONS
- Shampoo
- Shower gel
- Facial cleanser
- Hand soap
- Bubble bath
- Baby liquid cleansing product
- Pet shampoo

BENEFITS
- Naturally-derived
- PEG and EO/PO free
- Sulfate-free
- Cold mixable
- Easy handling
- No preservative

PERFORMANCE ADVANTAGES
Performance testing ratios are based on percent actives.

### Viscosity Building Properties with Primary Surfactants
![Graph showing viscosity building properties with primary surfactants]

### Viscosity Building Properties with ALpha-STEP® PC-48
![Graph showing viscosity building properties with ALpha-STEP® PC-48]

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Stepan Trade Name</th>
<th>INCI Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDB</td>
<td>AMPHOSOL® CDB Special</td>
<td>Cetyl betaine</td>
</tr>
<tr>
<td>PC-48</td>
<td>ALpha-STEP® PC-48</td>
<td>Sodium methyl 2-sulfonate (and) Disodium 2-sulfonate</td>
</tr>
<tr>
<td>PCL</td>
<td>STEPAN-MILD® PCL</td>
<td>Sodium methyl 2-sulfonate (and) Disodium 2-sulfonate (and) Sodium lauryl sulfoacetate</td>
</tr>
<tr>
<td>AOS</td>
<td>BIO-TERGE® AS-40</td>
<td>Sodium C14-16 olefin sulfonate</td>
</tr>
<tr>
<td>LSB</td>
<td>STEPAN-MILD® LSB</td>
<td>Sodium lauryl sulfoacetate (and) Disodium lauryl sulfosuccinate</td>
</tr>
<tr>
<td>SLES-2</td>
<td>STEOL® CS-230</td>
<td>Sodium laureth sulfate</td>
</tr>
<tr>
<td>CAPB</td>
<td>AMPHOSOL® CA</td>
<td>Cocamidopropyl betaine</td>
</tr>
<tr>
<td>SLS</td>
<td>STEPANOL® WA-EXTRA</td>
<td>Sodium lauryl sulfate</td>
</tr>
</tbody>
</table>
AMPHOSOL® CDB Special

PERFORMANCE ADVANTAGES

Relative Mildness
A measurement of the amount of Zein protein solubilized in 1% active surfactant solution as compared to SLS.

Foam Volume
Shake Foam Test (0.2% active solution at 25 ºC)

The less protein solubilized, the milder the surfactant or surfactant system.

PREMIUM, SULFATE-FREE CONDITIONING SHAMPOO (No. 1111)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>ALPHA-STEP® PC-48</td>
<td>27.0</td>
</tr>
<tr>
<td>AMPHOSOL® CDB Special</td>
<td>15.0</td>
</tr>
<tr>
<td>STEPAN-MILD® L3</td>
<td>0.5</td>
</tr>
<tr>
<td>STEPAN® SLL-FB</td>
<td>0.5</td>
</tr>
<tr>
<td>Hydrolyzed collagen</td>
<td>0.3</td>
</tr>
<tr>
<td>Linium usitatissimum extract</td>
<td>0.3</td>
</tr>
<tr>
<td>Polyquaternium-7</td>
<td>2.8</td>
</tr>
<tr>
<td>Panthenol</td>
<td>0.3</td>
</tr>
<tr>
<td>Glycol monostearate</td>
<td>0.3</td>
</tr>
<tr>
<td>Methylchloroisothiazolinone and Methylisothiazolinone</td>
<td>0.1</td>
</tr>
<tr>
<td>Citric acid, 25% solution or Sodium hydioxide</td>
<td>q.s.</td>
</tr>
<tr>
<td>Fragrance</td>
<td>0.1</td>
</tr>
<tr>
<td>Dye</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

NATURALLY-DERIVED, MOISTURIZING BODYWASH (No. 1113)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>ALPHA-STEP® PC-48</td>
<td>16.2</td>
</tr>
<tr>
<td>AMPHOSOL® CDB Special</td>
<td>13.3</td>
</tr>
<tr>
<td>Polyquaternium-7</td>
<td>2.8</td>
</tr>
<tr>
<td>STEPAN-MILD® L3</td>
<td>1.0</td>
</tr>
<tr>
<td>Methylchloroisothiazolinone and Methylisothiazolinone</td>
<td>0.1</td>
</tr>
<tr>
<td>Fragrance &amp; dye</td>
<td>q.s.</td>
</tr>
<tr>
<td>Citric acid or Sodium hydioxide</td>
<td>q.s.</td>
</tr>
</tbody>
</table>
### INCI NAME
Sodium methyl 2-sulfonolaurate (and) Disodium 2-sulfonolaurate

### TYPICAL PROPERTIES
- **Appearance at 25°C**: Clear liquid
- **pH (10% in H₂O)**: 6.0
- **Actives, %**: 39
- **Solids, %**: 43
- **Color, Gardner**: 3 max.
- **Viscosity at 25°C, cps**: 300

### FUNCTIONAL PROPERTIES
- Excellent foaming agent
- Provides excellent viscosity building when paired with AMPHOSOL® CDB Special
- Clarifies formulations with high electrolyte levels
- Provides excellent skin after-feel
- Easily formulated between pH 4-9

### BENEFITS
- Naturally-derived
- EO/PO free
- Sulfate-free
- Hard water tolerant
- Readily soluble
- No preservative
- Readily biodegradable

### APPLICATIONS
- Shampoo
- Body Wash
- Facial cleanser
- Hand soap
- Liquid soap
- Bubble bath
- Baby liquid cleansing product

### Foaming Properties
*Shake Foam Test (0.2% active solution at 25°C)*
*Formulation: 10% active ALPHA-STEP® PC-48 and 5% active AMPHOSOL® CDB Special*

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>5 Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foam Height, ml</strong></td>
<td><img src="chart.png" alt="Foam Height Chart" /></td>
<td><img src="chart.png" alt="Foam Height Chart" /></td>
</tr>
</tbody>
</table>

- **No oil**
- **With oil**

### Viscosity Building Properties
*Formulation: 10% active ALPHA-STEP® PC-48 and 5% active AMPHOSOL® CDB Special*

<table>
<thead>
<tr>
<th>% NaCl</th>
<th>Viscosity, cps</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td></td>
</tr>
</tbody>
</table>

### FACIAL CLEANSER
(No. 1059)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>BIO-TERGE® AS-40 CC-K</td>
<td>25.0</td>
</tr>
<tr>
<td>ALPHA-STEP® PC-48</td>
<td>8.5</td>
</tr>
<tr>
<td>STEPAN® 745 GC</td>
<td>6.0</td>
</tr>
<tr>
<td>Glycerin</td>
<td>0.8</td>
</tr>
<tr>
<td>AMPHOSOL® HCA</td>
<td>11.6</td>
</tr>
<tr>
<td>NINOL® COMF-N</td>
<td>2.0</td>
</tr>
<tr>
<td>DMDM hydantoin</td>
<td>0.3</td>
</tr>
<tr>
<td>Collagen amino acids</td>
<td>0.2</td>
</tr>
<tr>
<td>Fragrance &amp; dye</td>
<td>q.s.</td>
</tr>
<tr>
<td>Citric acid, 50% solution</td>
<td>q.s.</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>q.s.</td>
</tr>
</tbody>
</table>

### ECONOMY SULFATE-FREE SHAMPOO
(No. 1112)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>q.s. to 100.0</td>
</tr>
<tr>
<td>ALPHA-STEP® PC-48</td>
<td>13.5</td>
</tr>
<tr>
<td>AMPHOSOL® CDB Special</td>
<td>10.0</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>1.5</td>
</tr>
<tr>
<td>Methylchloroisothiazolinone and</td>
<td>0.1</td>
</tr>
<tr>
<td>Methylisothiazolinone</td>
<td></td>
</tr>
<tr>
<td>Citric acid, 25% solution or</td>
<td>q.s.</td>
</tr>
<tr>
<td>Sodium hydroxide, 25% solution</td>
<td></td>
</tr>
<tr>
<td>Fragrance &amp; dye</td>
<td>q.s.</td>
</tr>
</tbody>
</table>
### Personal Care Specialty Products Available from Stepan

<table>
<thead>
<tr>
<th><strong>STEPAN TRADE NAME</strong></th>
<th><strong>INCI NAME</strong></th>
<th><strong>BCI</strong></th>
<th><strong>FEEDSTOCK</strong></th>
<th><strong>PRESERVATIVE ACTIVES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anionic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALPHA-STEP® PC-48</strong></td>
<td>Sodium methyl 2-sulfonlaurate (and) Disodium 2-sulfonlaurate</td>
<td>94</td>
<td>Fatty methyl ester</td>
<td>None</td>
</tr>
<tr>
<td><strong>LATHANOL® LAL Products</strong></td>
<td>Sodium lauryl sulfoacetate</td>
<td>86</td>
<td>Fatty alcohol</td>
<td>None</td>
</tr>
<tr>
<td><strong>STEPAN® SLL-FB</strong></td>
<td>Sodium lauroyl lactylate</td>
<td>100</td>
<td>Fatty alcohol, Lactic acid</td>
<td>None</td>
</tr>
<tr>
<td><strong>STEPAN-MILD® LSB</strong></td>
<td>Sodium lauryl sulfoacetate (and) Disodium lauroth sulfoaceturate</td>
<td>64</td>
<td>Fatty alcohol</td>
<td>Benzoic acid</td>
</tr>
<tr>
<td><strong>STEPAN-MILD® PCL</strong></td>
<td>Sodium methyl 2-sulfonlaurate (and) Disodium 2-sulfonlaurate (and) Sodium lauryl sulfoacetate</td>
<td>90</td>
<td>Fatty alcohol, Fatty methyl ester</td>
<td>CIT/MIT</td>
</tr>
<tr>
<td><strong>STEPAN-MILD® SL3-BA</strong></td>
<td>Disodium lauroth sulfoaceturate</td>
<td>55</td>
<td>Fatty alcohol</td>
<td>Benzoic acid</td>
</tr>
<tr>
<td><strong>Amphoteric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMPHOSOL® 1C</strong></td>
<td>Sodium cocoamphoacetate</td>
<td>68</td>
<td>Fatty acid</td>
<td>DMDM hydantoin</td>
</tr>
<tr>
<td><strong>AMPHOSOL® 2C</strong></td>
<td>Disodium cocoamphodiacetate</td>
<td>62</td>
<td>Fatty acid</td>
<td>DMDM hydantoin</td>
</tr>
<tr>
<td><strong>AMPHOSOL® 2CSF</strong></td>
<td>Disodium cocoamphodiacetate</td>
<td>57</td>
<td>Fatty acid</td>
<td>None</td>
</tr>
<tr>
<td><strong>AMPHOSOL® CS-50</strong></td>
<td>Cocamidopropyl hydroxysultaine</td>
<td>59</td>
<td>Fatty triglyceride</td>
<td>None</td>
</tr>
<tr>
<td><strong>AMPHOSOL® CDB Special</strong></td>
<td>Cetyl betaine</td>
<td>78</td>
<td>Fatty amine</td>
<td>None</td>
</tr>
<tr>
<td><strong>Nonionic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STEPAN® 745 GC</strong></td>
<td>PEG/PPG-6/2 glyceryl cocoate</td>
<td>67</td>
<td>Fatty triglyceride, Glycerin</td>
<td>None</td>
</tr>
<tr>
<td><strong>STEPAN-MILD® GCC</strong></td>
<td>Glyceryl caprylate/caprate</td>
<td>100</td>
<td>Fatty acid, Glycerin</td>
<td>None</td>
</tr>
<tr>
<td><strong>STEPAN-MILD® L3</strong></td>
<td>Lauryl lactyl lactate</td>
<td>100</td>
<td>Fatty alcohol, Lactic acid</td>
<td>None</td>
</tr>
<tr>
<td><strong>Blend</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ALPHA-STEP® HWC</strong></td>
<td>Sodium methyl 2-sulfonlaurate (and) Disodium 2-sulfonlaurate (and) Cocamidopropyl betaine (and) Lauramide MEA (and) Citromonium chloride (and) PEG-150 distearate</td>
<td>78</td>
<td>Blend</td>
<td>CIT/MIT</td>
</tr>
</tbody>
</table>

**AMPHOSOL® HWC**  
- Contains no Alkyl sulfates or Alkyl ether sulfates  
- Mild  
- Provides creamy, stable foam  
- Provides excellent skin after-feel  
- Appropriate for self-foaming pump applications  
- Non-stringing

**AMPHOSOL® 1C**  
- EO/PO free  
- Mild  
- Provides foaming and viscosity building

**AMPHOSOL® 2C**  
- EO/PO free  
- Mild  
- Increases foaming capacity  
- Stabilizes foam

**AMPHOSOL® 2CSF**  
- EO/PO free  
- Mild  
- Foam booster  
- Viscosity building  
- Salt free

**AMPHOSOL® CS-50**  
- EO/PO free  
- Disperses or emulsifies oils  
- Foam and viscosity booster in the presence of oils

**STEPAN® 745 GC**  
- Water compatible emollient  
- May help solubilize fragrance  
- Clear up to 10% in water/surfactant mixtures  
- Does not impact foam

**STEPAN® SLL-FB**  
- EO/PO free  
- Nitrogen free  
- Foam booster  
- Viscosity enhancer  
- Improved hydrolytic stability

**STEPAN MILD® SL3-BA**  
- Provides foaming  
- Mild  
- Provides skin softness

**AMPHOSOL® CS-50**  
- EO/PO free  
- Nitrogen free  
- Salt free  
- Viscosity modifier  
- PEG-150 distearate or PEG-120 methyl glucose dioleate alternative  
- Provides skin conditioning softness  
- Solubilizing agent  
- Thickener  
- Co-emulsifier  
- Cold mixable  
- Assists foam  
- Refatting agent

**STEPAN-MILD® GCC**  
- EO/PO free  
- Nitrogen free  
- Salt free  
- Viscosity modifier  
- PEG-150 distearate or PEG-120 methyl glucose dioleate alternative  
- Provides skin conditioning softness  
- Solubilizing agent  
- Thickener  
- Cold mixable  
- Assists foam  
- Refatting agent

**STEPAN-MILD® L3**  
- EO/PO free  
- Nitrogen free  
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- Provides skin conditioning softness  
- Solubilizing agent  
- Thickener  
- Cold mixable  
- Assists foam  
- Refatting agent

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*All Stepan products noted above are considered sulfate-free, which is defined by Stepan as not containing Alcohol sulfate or Alkyl ether sulfate per INCI nomenclature. This definition does not include the inorganic sulfates, e.g. Sodium sulfate, used as process aids or formed as a residual impurity or by-product.*

*Stepan defines naturally-derived as derived from biorenewable resources originating from animal, plant or marine feedstocks. All Stepan surfactants noted in this brochure and in formulations labeled as naturally-derived have a minimum of 50% biorenewable carbon content based on Stepan’s Biorenewable Carbon Index (BCI) calculation. Other ingredients were not evaluated. Stepan’s BCI catalog can be found at www.stepan.com.*

*Relative mildness data via Zein Score is located on the back cover.*
The “Zein Score” is the amount of Zein protein solubilized by a given surfactant compared to the amount solubilized by Sodium laurel sulfate (SLS), a surfactant used in Personal Care products (the Zein Score for SLS is 100%). The less protein solubilized, the milder the surfactant.

Relative Mildness

Please contact Stepan Company at the appropriate number or email address listed below. Regional contact information can be found on Stepan’s website at www.stean.com.

For formulation assistance and sampling contact:

U.S. Technical Service
Phone: 1-800-745-7837(STEP)
Email: techserv@stepan.com

For pricing and product availability contact:

U.S. Customer Service
Phone: 1-800-457-7673
Email: order.placement@stepan.com

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