Section 1. Chemical Product and Company Identification

Product name: JACAAB-ETHOQUAD C/12

Material Uses: Surfactant.

Supplier/Repackager: Jacaab LLC
4155 Manchester Avenue
St. Louis, MO 63110

In Case of Emergency
CHEMTREC: 800-424-9300
Information: 314-533-4662

Section 2. Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides</td>
<td>70750-47-9</td>
<td>74-77</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>22-25</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>0.001-3</td>
</tr>
<tr>
<td>N-Cocoalkyl-2-2’-iminobisethanol-HCl</td>
<td>Not Assigned</td>
<td>0.001-2</td>
</tr>
<tr>
<td>Ethanol, 2,2’-iminobis-, n-coco alkyl derivs.</td>
<td>61791-31-9</td>
<td>0.001-2</td>
</tr>
</tbody>
</table>

Section 3. Hazards Identification

Physical State: Liquid.
Color: Yellow.
Odor: Alcohol like.

Emergency Overview

DANGER!
CAUSES EYE AND SKIN BURNS.
TOXIC TO AQUATIC ORGANISMS.
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED.
CONTAINS MATERIAL WHICH MAY CAUSE DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, EYES, CENTRAL NERVOUS SYSTEM.
MAY BE HARMFUL TO ENVIRONMENT IF RELEASED IN LARGE AMOUNTS.

Keep away from heat, sparks and flame. Do not get in eyes, on skin or on clothing. Avoid prolonged contact with eyes, skin, and clothing. Do not ingest. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact of spilled material and runoff with soil and surface waterways.

Possible Carcinogenic Effects

Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides: IARC, NTP, OSHA, ACGIH: Not listed.
Isopropyl alcohol: IARC 3; ACGIH NTP, OSHA: Not listed.
Water: IARC, NTP, OSHA, ACGIH: Not listed.
Ethanol, 2,2’-iminobis-, n-coco alkyl derivs.: IARC, NTP, OSHA, ACGIH: Not listed.

Routes of Entry

Absorbed through skin. Dermal contact. Eye contact.

See Toxicological Information (section 11)
Section 4. First Aid Measures

**Eye Contact**
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**Skin Contact**
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Inhalation**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

**Ingestion**
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Medical Conditions Aggravated by Overexposure**
Repeated or prolonged exposure is not known to aggravate medical condition.

Section 5. Fire Fighting Measures

**Flammability of the Product**
Flammable.

**Auto-ignition Temperature**
The lowest known value is 450°C (842°F) (Isopropyl alcohol).

**Flash Points**
Closed cup: 20°C (68°F).

**Flammable Limits**
The greatest known range is LOWER: 2%  UPPER: 12.7% (Isopropyl alcohol)

**Products of Combustion**
These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

**Fire Hazards in Presence of Various Substances**
Flammable in presence of open flames, sparks and static discharge.

**Fire Fighting Media and Instructions**
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

**Protective Clothing (Fire)**
Be sure to use an approved/certified respirator or equivalent.

**Special Remarks on Fire Hazards**
No sparking tools should be used. Take precautionary measures against static discharges.

Section 6. Accidental Release Measures

**Small Spill and Leak**
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill and Leak**
Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed.

Section 7. Handling and Storage

**Handling**
Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

**Storage**
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).
Section 8. Exposure Controls, Personal Protection

Engineering Controls
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection
Splash goggles.
Lab coat.
Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Gloves.
Not applicable.

Protective Clothing (Pictograms)

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Ingredient Name
Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides
Isopropanol

Exposure Limits United States
ACGIH (United States, 1994).
STEL: 1230 mg/m³ 15 minute(s). Form:
STEL: 500 ppm 15 minute(s). Form:
TWA: 983 mg/m³ 8 hour(s). Form:
TWA: 400 ppm 8 hour(s). Form:

NIOSH REL (United States, 1994).
STEL: 1225 mg/m³ 15 minute(s). Form:
STEL: 500 ppm 15 minute(s). Form:
TWA: 980 mg/m³ 10 hour(s). Form:
TWA: 400 ppm 10 hour(s). Form:

OSHA Final Rule (United States, 1989).
STEL: 1225 mg/m³ 15 minute(s). Form:
STEL: 500 ppm 15 minute(s). Form:
TWA: 980 mg/m³ 8 hour(s). Form:
TWA: 400 ppm 8 hour(s). Form:

Water
Not available.
N-Cocoalkyl-2-2'-iminobisethanol-HCl
Not available.
Ethanol, 2,2'-iminobis-, n-coco alkyl derivs.
Not available.

Section 9. Physical and Chemical Properties

Physical State
Liquid.

Color
Yellow.

Odor
Alcohol like.

Molecular Weight
Not applicable.

Molecular Formula
Not applicable.

pH
7 to 9 [Basic.]

Boiling/Condensation Point
80°C (176°F)

Melting/Freezing Point
10°C (50°F)

Continued on Next Page
The highest known value is 2.07 (Air = 1) (Isopropyl alcohol).

4.3 kPa (32 mmHg) (at 20°C)

Easily soluble in hot water, methanol, acetone.
Soluble in cold water.

Section 10. Stability and Reactivity

Stability and Reactivity: The product is stable.
Incompatibility with Various Substances: Reactive with OXIDIZING AGENTS.
Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information

Toxicity to Animals

<table>
<thead>
<tr>
<th>Ingredient Name or Product name</th>
<th>Test</th>
<th>Result</th>
<th>Route</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHOQUAD® C/12 Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides Isopropanol</td>
<td>LD50</td>
<td>&lt;1680 mg/kg</td>
<td>Dermal</td>
<td>Rabbit</td>
</tr>
<tr>
<td>LD50</td>
<td>400 mg/kg</td>
<td>Oral</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>5045 mg/kg</td>
<td>Oral</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>6410 mg/kg</td>
<td>Oral</td>
<td>Rabbit</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>3600 mg/kg</td>
<td>Oral</td>
<td>Mouse</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>12800 mg/kg</td>
<td>Dermal</td>
<td>Rabbit</td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>16000 ppm (8 hour(s))</td>
<td>Inhalation</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td>Ethanol, 2,2'-iminobis-, n-coco alkyl derivs.</td>
<td>LD50</td>
<td>6600 mg/kg</td>
<td>Oral</td>
<td>Rat based on data for: (similar material)</td>
</tr>
</tbody>
</table>

Special Remarks on Toxicity to Animals: Ethanol, 2,2'-iminobis-, n-coco alkyl derivs.: INHALATION LC50 = 88 ppm @ 1 hour(s) Rat

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified None. by NIOSH [Isopropyl alcohol]. Classified 3 (Not classifiable for human.) by IARC [Isopropyl alcohol].
MUTAGENIC EFFECTS: Non-mutagenic for bacteria and/or yeast. [Isopropyl alcohol].
Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes, central nervous system (CNS).

Acute Effects Skin: Corrosive to the skin. Harmful in contact with skin.
Acute Effects Eyes: Corrosive to the eyes.
Special Remarks on Other Toxic Effects on Humans: 

Continued on Next Page
Section 12. Ecological Information

Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient Name or Product name</th>
<th>Species</th>
<th>Period</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides</td>
<td>Zebrafish (LC50)</td>
<td>96 hour(s)</td>
<td>2.4 mg/l</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>Fish (LC50)</td>
<td>96 hour(s)</td>
<td>&gt;100 mg/l</td>
</tr>
<tr>
<td>Ethanol, 2,2'-iminobis-, n-coco alkyl derivs.</td>
<td>Fish (LC50)</td>
<td>96 hour(s)</td>
<td>0.28 mg/l</td>
</tr>
</tbody>
</table>

Biodegradability and Ecotoxicity Remarks

Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides: 20% @ 42 day(s) CBT
Ethanol, 2,2'-iminobis-, n-coco alkyl derivs.: 60% @ 28 day(s) CBT based on data for: (similar material)

Biodegradable/OECD

Inherently biodegradable.

Products of Degradation

These products are carbon oxides (CO, CO₂) and water, nitrogen oxides (NO, NO₂...).

Section 13. Disposal Considerations

Waste Information

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

RCRA Classification

Code: D001 Ignitable Waste

Section 14. Transport Information

<table>
<thead>
<tr>
<th>Regulatory Information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Class</th>
<th>Packing Group</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>UN3286</td>
<td>Flammable liquid, toxic, corrosive, n.o.s. (Isopropyl alcohol, Quaternary ammonium salts)</td>
<td>3</td>
<td>II</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.1, 8</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TDG Classification</td>
<td>UN3286</td>
<td>FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (Isopropyl alcohol, Quaternary ammonium salts)</td>
<td>3</td>
<td>II</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td>IMDG Class</td>
<td>UN3286</td>
<td>FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (Isopropyl alcohol, Quaternary ammonium salts)</td>
<td>3</td>
<td>II</td>
<td>-</td>
<td></td>
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<td></td>
<td></td>
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<td>6.1, 8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued on Next Page
### Section 15. Regulatory Information

| HCS Classification | Highly toxic  
| | Flammable liquid  
| | Target organ effects  
| | Corrosive Material  

**U.S. Federal Regulations**
- TSCA: All intentionally present components are listed on the TSCA inventory.
- DSL: All intentionally present components are listed on the DSL.
- CERCLA: Hazardous substances.: No products were found.
- SARA 302/304/311/312 extremely hazardous substances: No products were found.
- SARA 302/304 emergency planning and notification: No products were found.
- SARA 302/304/311/312 hazardous chemicals: ETHOQUAD® C/12  
- SARA 311/312 MSDS distribution - chemical inventory - hazard identification: ETHOQUAD® C/12: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard  
- SARA 313 Form R Reporting Requirements  
- No products were found.
- SARA 313 Supplier Notification  
- No products were found.

**State Regulations**
- Pennsylvania RTK: Isopropyl alcohol: (environmental hazard, generic environmental hazard)
- Massachusetts RTK: Isopropyl alcohol
- New Jersey: Isopropyl alcohol
- California prop. 65: No products were found.

**WHMIS (Canada)**
- Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
- Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
- Class E: Corrosive liquid.
- CEPA DSL: Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides; Isopropyl alcohol; Water; Ethanol, 2,2'-iminobis-, n-coco alkyl derivs.

**European Union**

<table>
<thead>
<tr>
<th>Component</th>
<th>EC Number</th>
<th>EC Status</th>
<th>EC Annex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides</td>
<td>274-846-6</td>
<td>Not available.</td>
<td>Not available.</td>
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<tr>
<td>Isopropanol</td>
<td>200-661-7</td>
<td>Not available.</td>
<td>603-117-00-0</td>
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<tr>
<td>Water</td>
<td>231-791-2</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>N-Cocoalkyl-2-2'-iminobisethanol-HCl</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Ethanol, 2,2'-iminobis-, n-coco alkyl derivs.</td>
<td>263-163-9</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Continued on Next Page
Section 16. Other Information

Hazardous Material Information System (U.S.A.)

- Health 3
- Fire Hazard 3
- Reactivity 0
- Personal Protection

National Fire Protection Association (U.S.A.)

- Health 3
- Fire Hazard 3
- Reactivity 0
- Specific Hazard

Validation Date: 6/20/2005
Phone Number: 314-533-4662

Notice to Reader

The information in the material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. However, no warranty is made as to the accuracy of and/or sufficiency of such information and/or suggestions or as to the product’s merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. Buyer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current.