

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product Identifier**

Product Form : Mixture  
Product Name : Citrus Clean  
Product Code : 5003

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Use of the substance/mixture : Cleaner/degreaser

**1.3 Details of the supplier of the safety data sheet**

Twi-Laq Industries, Inc.  
1345 Seneca Avenue  
Bronx, NY 10474  
T (718) 638-5860

**1.4 Emergency telephone number**

Emergency number : CHEM-TREC 1-800-424-9300

**SECTION 2: Hazards Identification**

**2.1 Classification of the substance or mixture**

**Classification (GHS-US)**

Skin Corr. 1A H314

**2.2 Label Elements**

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS07

Signal Word (GHS-US) :

**WARNING**

Hazard Statements (GHS-US) :

- H315 - Causes skin irritation
  - H317 - May cause an allergic skin reaction
  - H319 - Causes serious eye irritation
- Precautionary statements (GHS-US) :
- P261 - Avoid breathing dust/mist/spray
  - P264 - Wash hands and forearms thoroughly after handling
  - P272 - Contaminated work clothing must not be allowed out of the workplace
  - P280 - Wear Protective gloves/eye protection/face protection
  - P302+P352 - If on skin: Wash with plenty of soap and water
  - P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
  - P321 - Specific treatment (see first aid measures on this label)
  - P332+P313 - If skin irritation occurs: Get medical advice/attention
  - P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
  - P337+P313 - If eye irritation persists: Get medical advice/attention
  - P362 - Take off contaminated clothing and wash before reuse
  - P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**2.3 Other Hazards**

No additional information available

**2.4 Unknown Acute Toxicity**

No Data Available

**SECTION 3: Composition / Information on Ingredients**

**3.1 Substance**

Not Applicable

**3.2 Mixture**

| Name            | Product Identifier  | %     | Classification (GHS-US)                                                                                                                                             |
|-----------------|---------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (+)-limonene    | (CAS No.) 5989-27-5 | 1 - 5 | Flam. Liq. 3, H226<br>Skin Irrit. 2, H315<br>Skin Sens. 1, H317                                                                                                     |
| 2-butoxyethanol | (CAS No.) 111-76-2  | 1 - 5 | Flam. Liq. 4, H227<br>Acute Tox. 4 (Oral), H302<br>Acute Tox. 3 (Dermal), H311<br>Acute Tox. 2 (Inhalation:gas), H330<br>Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319 |

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|                |                    |       |                                                                                                       |
|----------------|--------------------|-------|-------------------------------------------------------------------------------------------------------|
| 2-aminoethanol | (Cas No.) 141-43-5 | 1 - 5 | Flam. Liq. 4, H227<br>Acute Tox. 4 (Oral), H302<br>Acute Tox. 3 (Dermal), H312<br>Skin Corr. 1B, H314 |
|----------------|--------------------|-------|-------------------------------------------------------------------------------------------------------|

### SECTION 4: First Aid Measures

#### 4.1 Description of First Aid measures

|                                       |                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First Aid measures general            | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show label where possible)                                                     |
| First Aid measures after inhalation   | : Remove to fresh air and keep at rest in a position comfortable for breathing.                                                                                                  |
| First Aid measures after skin contact | : Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.                    |
| First Aid measures after eye contact  | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| First Aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention                                                                                                        |

#### 4.2 Most important symptoms and effects, both acute and delayed

|                                        |                                       |
|----------------------------------------|---------------------------------------|
| Symptoms / injuries after inhalation   | : May cause an allergic skin reaction |
| Symptoms / injuries after skin contact | : Causes skin irritation              |
| Symptoms / injuries after eye contact  | : Causes serious eye irritation       |

#### 4.3 Indication of any immediate medical attention and special treatment needed

No additional information available

### SECTION 5: Firefighting Measures

#### 5.1 Extinguishing Media

|                                |                                                        |
|--------------------------------|--------------------------------------------------------|
| Suitable extinguishing media   | : Foam. Dry powder. Carbon Dioxide. Water spray. Sand. |
| Unsuitable extinguishing media | : Do not use a heavy water stream                      |

#### 5.2 Special hazards arising from the substance or mixture

No additional information available

#### 5.3 Advice for firefighters

|                                |                                                                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firefighting Instructions      | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection                                                                    |

### SECTION 6: Accidental Release Measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

##### 6.1.1 For non-emergency personnel

Emergency Procedures : Evacuate unnecessary personnel

##### 6.1.2 For emergency responders

Protective Equipment : Equip cleanup crew with proper protection  
Emergency Procedures : Ventilate area

#### 6.2 Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up. : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

#### 6.4 Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and Storage

#### 7.1 Precautions for safe handling

|                               |                                                                                                                                                                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for safe handling | : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing dust/mist/spray. |
| Hygiene measures              | : Wash hands and forearms thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse                                                              |

#### 7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place. Keep container closed when not in use  
Incompatible products : Strong bases. Strong acids.  
Incompatible Materials : Sources of ignition. Direct sunlight.

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### 7.3 Specific end use(s)

No additional information available

## SECTION 8: Exposure controls / personal protection

### 8.1 Control parameters

| 2-butoxyethanol (111-76-2) |                        |                |
|----------------------------|------------------------|----------------|
| USA ACGIH                  | ACGIH TWA (ppm)        | 20 ppm         |
| USA ACGIH                  | ACGIH STEL (ppm)       | 20 ppm         |
| USA ACGIH                  | Remark (ACGIH)         | Eye & URT irr  |
| USA OSHA                   | OSHA PEL (TWA) (mg/m3) | 240 mg/m3      |
| USA OSHA                   | OSHA PEL (TWA) (ppm)   | 50ppm          |
| 2-aminoethanol (141-43-5)  |                        |                |
| USA ACGIH                  | ACGIH TWA (ppm)        | 3 ppm          |
| USA ACGIH                  | ACGIH STEL (ppm)       | 3 ppm          |
| USA ACGIH                  | Remark (ACGIH)         | Eye & Skin irr |
| USA OSHA                   | OSHA PEL (TWA) (mg/m3) | 6mg/m3         |
| USA OSHA                   | OSHA PEL (TWA) (ppm)   | 3ppm           |

### 8.2 Exposure controls

|                               |                                          |
|-------------------------------|------------------------------------------|
| Personal Protective Equipment | : Avoid all unnecessary exposure.        |
| Hand Protection               | : Wear protective gloves.                |
| Eye Protection                | : Chemical goggles or safety glasses.    |
| Skin and body protection      | : Wear suitable protective clothing.     |
| Respiratory Protection        | : Wear appropriate mask.                 |
| Other Information             | : Do not eat, drink or smoke during use. |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                            |                       |
|--------------------------------------------|-----------------------|
| Physical state                             | : Liquid              |
| Color                                      | : Orange              |
| Odor                                       | : Citrus              |
| Odor threshold                             | : No data available   |
| pH                                         | : 9.5 - 10.5          |
| Relative evaporation rate (butyl acetate=) | : No data available   |
| Melting Point                              | : No data available   |
| Freezing Point                             | : No data available   |
| Boiling Point                              | : 212°F - 220°F       |
| Flash Point                                | : ≥ 145°F             |
| Auto-ignition temperature                  | : No data available   |
| Decomposition temperature                  | : No data available   |
| Flammability (solid, gas)                  | : No data available   |
| Vapor Pressure                             | : No data available   |
| Relative vapor density @ 20°C              | : Equivalent to water |
| Relative density                           | : 0.95                |
| Solubility                                 | : Soluble in Water    |
| Log Pow                                    | : No data available   |
| Log Kow                                    | : No data available   |
| Viscosity, kinematic                       | : No data available   |
| Viscosity, dynamic                         | : No data available   |
| Explosive Properties                       | : No data available   |
| Oxidizing Properties                       | : No data available   |
| Explosive Limits                           | : No data available   |

### 9.2 Other Information

No additional information available.

## SECTION 10: Stability and Reactivity

### 10.1 Reactivity

Thermal decomposition generates: Corrosive vapors.

### 10.2 Chemical Stability

Stable under normal Conditions

### 10.3 Possibility of hazardous reactions

Not established

### 10.4 Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

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### 10.5 Incompatible materials

Strong Acids. Strong bases.

### 10.6 Hazardous decomposition products

Fume. Carbon Monoxide. Carbon Dioxide.

## SECTION 11: Toxicological Information

### 11.1 Information on toxicological effects

Acute Toxicity : Not classified

| <b>(+)-limonene (5989-27-5)</b> |                           |
|---------------------------------|---------------------------|
| LD50 oral rat                   | 1720 mg/kg (Rat)          |
| LD50 dermal rabbit              | 1018 mg/kg (Rabbit)       |
| ATE US (oral)                   | 1720.00 mg/kg body weight |

| <b>2-butoxyethanol (111-76-2)</b> |                                                                                                                                                                     |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LD50 oral rat                     | 530 mg/kg (Rat; equivalent or similar to OECD 401; Literature study; 1746 mg/kg bodyweight; Rat; Experimental value)                                                |
| LD50 dermal rat                   | >2000 mg/kg body weight (Rat experimental val; OECD 402: Acute Dermal Toxicity)                                                                                     |
| LD50 dermal rabbit                | 435 mg/kg body weight (Rabbit; Experimental val; OECD 402: Acute Dermal Toxicity; 435 mg/kg bodyweight; Rabbit; Wgt of evidence; Equivalent or similar to OECD 402) |
| LC50 inhalation rat (mg/l)        | 2.17 mg/l/4h (Rat; Experimental value; 2.35 mg/l/4h; Rat; Experimental value)                                                                                       |
| LC50 inhalation rat (ppm)         | 450 - 486 ppm/4h 450 - 486, Rat                                                                                                                                     |
| ATE US (oral)                     | 530.00 mg/kg body weight                                                                                                                                            |
| ATE US (dermal)                   | 435.00 mg/kg body weight                                                                                                                                            |
| ATE US (gases)                    | 450.00 ppmV/4h                                                                                                                                                      |
| ATE US (vapors)                   | 2.17 mg/l/4h                                                                                                                                                        |
| ATE US (dust, mist)               | 2.17 mg/l/4h                                                                                                                                                        |

| <b>2-aminoethanol (141-43-5)</b> |                           |
|----------------------------------|---------------------------|
| LD50 oral rat                    | 1720 mg/kg (Rat)          |
| LD50 dermal rabbit               | 1018 mg/kg (Rabbit)       |
| ATE US (oral)                    | 1720.00 mg/kg body weight |
| ATE US (dermal)                  | 1018.00 mg/kg body weight |

Skin corrosion / irritation : Causes skin irritation - pH 9.5 - 10.5  
Serious eye damage / irritation : Causes serious eye irritation - pH 9.5 - 10.5  
Respiratory or skin sensitization : May cause an allergic skin reaction  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

| <b>(+)-limonene (5989-27-5)</b> |                      |
|---------------------------------|----------------------|
| IARC group                      | 3 - Not classifiable |

| <b>2-butoxyethanol (111-76-2)</b> |                      |
|-----------------------------------|----------------------|
| IARC group                        | 3 - Not classifiable |

Reproductive Toxicity : Not classified  
Specific target organ toxicity (single exposure) : Not classified  
Specific target organ toxicity (repeated exposure) : Not classified  
Aspiration hazard : Not classified  
Potential Adverse human health effects and symptoms : Based on available date, the classification criteria are not met.

## SECTION 12: Ecological Information

### 12.1 Toxicity

| <b>d'limonene (5989-27-5)</b> |                                               |
|-------------------------------|-----------------------------------------------|
| LC50 fish 1                   | 720 mg/l (96 h; Pimephales promelas; Lethal)  |
| EC50 Daphnia 1                | 0.36 mg/l (48 h; Daphnia magna; GLP)          |
| LC50 fish 2                   | 702 µg/l (96 h; Pimephales promelas)          |
| Threshold limit algae 1       | 150 mg/l (72 h; Desmodesmus subspicatus; GLP) |
| Threshold limit algae 2       | 2.62 mg/l (72 h; Desmodesmus subspicatus)     |

| <b>2-butoxyethanol (111-76-2)</b> |                                                              |
|-----------------------------------|--------------------------------------------------------------|
| LC50 fish 1                       | 116 ppm (96 h; Cyprinodon variegatus; Nominal concentration) |
| EC50 Daphnia 1                    | 1700 mg/l (48 h; Daphnia sp.; Nominal concentration)         |
| LC50 fish 2                       | 1341 ppm (96 h; Lepomis macrochirus)                         |
| EC50 Daphnia 2                    | 1720 mg/l (24 h; Daphnia magna)                              |
| TLM fish 1                        | 100 - 1000, 96 h; Pisces                                     |
| TLM other aquatic organisms       | 100 - 1000, 96 h                                             |
| Threshold limit algae 1           | 900 mg/l (168 h; Scenedesmus quadricauda)                    |
| Threshold limit algae 2           | 35 mg/l (192 h; Microcystis aeruginosa)                      |

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| <b>2-aminoethanol (141-43-5)</b> |                                                                      |
|----------------------------------|----------------------------------------------------------------------|
| LC50 fish 1                      | 150 mg/l 96 h; <i>Salmo gairdneri</i> ( <i>Oncorhynchus mykiss</i> ) |
| EC50 Daphnia 1                   | 1700 mg/l (48 h; <i>Daphnia</i> sp.; Nominal concentration)          |
| LC50 fish 2                      | 1341 ppm (96 h; <i>Lepomis macrochirus</i> )                         |
| TLM fish 1                       | 100 - 1000, 96 h; Pisces                                             |
| TLM other aquatic organisms      | 100 - 1000, 96 h                                                     |
| Threshold limit algae 1          | 900 mg/l (168 h; <i>Scenedesmus quadricauda</i> )                    |
| Threshold limit algae 2          | 35 mg/l (192 h; <i>Microcystis aeruginosa</i> )                      |

### 12.2 Persistence and degradability

| <b>Citrus Clean</b>           |                 |
|-------------------------------|-----------------|
| Persistence and degradability | Not established |

| <b>(+)-limonene (5989-27-5)</b> |                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------|
| Persistence and degradability   | Readily biodegradable in water. Forming sediments in water. Adsorbs into the soil. |
| ThOD                            | 3.29 g O <sub>2</sub> /g substance                                                 |

| <b>2-butoxyethanol (111-76-2)</b> |                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------|
| Persistence and degradability     | Readily biodegradable in water. Biodegradable in soil. Photodegradation in the air. |
| Biochemical oxygen demand (BOD)   | 0.71g O <sub>2</sub> /g substance                                                   |
| Chemical oxygen demand (COD)      | 2.20g O <sub>2</sub> /g substance                                                   |
| ThOD                              | 2.305g O <sub>2</sub> /g substance                                                  |
| BOD (% of ThOD)                   | 0.31 % ThOD                                                                         |

| <b>2-aminoethanol (141-43-5)</b> |                                                        |
|----------------------------------|--------------------------------------------------------|
| Persistence and degradability    | Readily biodegradable in water. Biodegradable in soil. |
| Biochemical oxygen demand (BOD)  | 0.80g O <sub>2</sub> /g substance                      |
| Chemical oxygen demand (COD)     | 1.34g O <sub>2</sub> /g substance                      |
| ThOD                             | 2.49g O <sub>2</sub> /g substance                      |
| BOD (% of ThOD)                  | 0.32 % ThOD                                            |

### 12.3 Bioaccumulative potential

| <b>(+)-limonene (5989-27-5)</b> |                                                                                                 |
|---------------------------------|-------------------------------------------------------------------------------------------------|
| BCF Fish 1                      | 864.8 -1022 (Pisces; Fresh weight)                                                              |
| Log Pow                         | 4.38 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 37°C) |
| Bioaccumulative potential       | Potential for bioaccumulation (4 ≥ Log Kow ≤ 5).                                                |

| <b>2-aminoethanol (141-43-5)</b> |                                  |
|----------------------------------|----------------------------------|
| Log Pow                          | -1.91                            |
| Bioaccumulative potential        | Bioaccumulation: Not applicable. |

| <b>2-butoxyethanol (111-76-2)</b> |                                                 |
|-----------------------------------|-------------------------------------------------|
| Log Pow                           | 0.81 (Experimental value; BASF test; 25C)       |
| Bioaccumulative potential         | Low potential for bioaccumulation (Log Kow < 4) |

### 12.4 Mobility in Soil

| <b>2-butoxyethanol (111-76-2)</b> |                  |
|-----------------------------------|------------------|
| Surface Tension                   | 0.027 N/m (25°C) |

| <b>2-aminoethanol (141-43-5)</b> |           |
|----------------------------------|-----------|
| Surface Tension                  | 0.050 N/m |

### 12.5 Other adverse effects

Effect on ozone layer : No additional information available  
Effect on the global warming : No known ecological damage caused by this product  
Other information : Avoid release to the environment

## SECTION 13: Disposal Considerations

### 13.1 Waste Treatment Methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local, state, and federal regulations.  
Ecology - Waste materials : Avoid release to the environment

## SECTION 14: Transport Information

In accordance with DOT

### Additional Information

Other Information : No supplementary information available

#### ADR

Transport document description :

Transport by sea : No additional information available

Air transport : No additional information available

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### SECTION 15: Regulatory Information

#### 15.1 US Federal Regulations

No additional information available

#### 15.2 International Regulations

##### CANADA

No additional information available

##### EU Regulations

No additional information available

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

**Classification according to Directive 67/548/EEC [DSD] or 1999/44/EC [DPD]**

Not Classified

#### 15.2.2 National Regulations

No additional information available

### SECTION 16: Other Information

Revision Date : 5/18/2015

Other Information : None

#### HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

Personal Protection : B

SDS US (GHS Hazcom 2012)

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