



## CIVIL ENGINEERING ASSOCIATES, INC.

10 Mansfield View Lane  
South Burlington, VT 05403

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May 7, 2015  
Jeannine McCrumb  
Town of Charlotte  
P.O. Box 119  
Charlotte, Vermont 05445

**Re: 823 Ferry Road –Coffee Wholesale Wastewater Review  
Certificate of Compliance 4C0335-1**

Dear Jeannine,

From correspondence with Chris Galipeau of our office we have been requested to evaluate and review the quality of wastewater produced by a cold brewed coffee wholesale business, and its effect on the existing wastewater disposal system located at the 823 Ferry Road property in Charlotte, Vermont. Our review of the wastewater is limited to the cleaner and sanitizer products utilized by the owner in the daily operations.

Wastewater effluent quality is evaluated by multiple parameters such as biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), fats, oil and grease (FOG), and pH. This analysis uses pH as the primary indicator of quality as this data is readily available for both cleaner and sanitizer. The primary cleaner to be used for cleansing of the brew vessels is PBR or One Step and the primary sanitizers to be used are Star San or Sani Clean. The material data safety sheets for each of these products is attached along with the proposed usage procedures as summarized by the owner.

With the dosage and frequency information provided, a pH analysis was performed. pH is a measure of the hydrogen concentration in water. Low pH indicates increasing acidity, whereas a high pH indicates increasing alkalinity. The acidity or alkalinity of wastewater affects both treatment and the environment. (Eliasson 2004) The pH of wastewater typically falls between 6.5 and 8 (Canter and Knox 2004) As a result it is critical that the pH of effluent entering the septic tank does not fall outside the normal range in order to maintain proper operation.

To evaluate the pH, an analysis by Five Star Chemicals Supply, Inc. was utilized. This analysis was prepared for a separate project but utilizes the same volume and type of cleaner and sanitizer. Due to the fact that the cleaners and sanitizers discussed are used within a short duration of each other, the attached analysis effectively combines the two products. The resulting pH ranged from 11.6 to 12.0 in the resulting solution depending on the amount of cleaner used in each batch. These values fall outside the acceptable pH range for septic tank effluent.

As a result, mitigation is recommended to preserve the function of the septic tank and leach field. In order to lower the pH to an acceptable range, we recommend adding sodium bisulfate to the wastewater stream. Sodium bisulfate is commonly referred to as a dry acid and is a dry granular product that can be safely shipped and stored. The procedure to reduce pH is as follows:

1. Combine and mix 5 gallons of waste cleaner solution and 5 gallons of waste sanitizer solution.
2. Add 1.6 oz of Sodium bisulfate(dry acid) and mix thoroughly.
3. Test combined and mixed wastewater sample using pH testing strips according to the manufacturers instructions. If pH is above 8.0 go to Step 4, if pH is below 6.5 see Step 5. If pH falls within the acceptable range of 6.5-8.0 proceed to Step 6.
4. Add 0.5 oz of additional dry acid and repeat Step 3 as necessary until pH is in the acceptable range of 6.5-8.0.
5. Add 0.5 oz of baking soda and repeat Step 3 as necessary until pH is in the acceptable range of 6.5-8.0.
6. Dispose of wastewater with pH ranging from 6.5-8.0 into septic system.

By adjusting the pH of the wastewater before entering the septic tank the waste strength will be similar to a typical wastewater disposal system. By not altering or performing these steps the waste stream entering the tank is potentially disruptive of the microorganism activey and will reduce effluent quality in the disposal field.

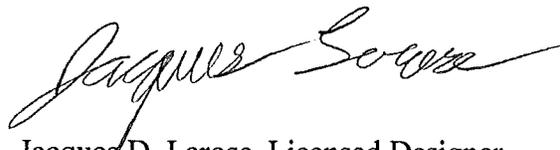
The procedures and findings desribed in this letter represent effluent quality and mitigation based upon the best available information and the identified operations.

This completes our review of the proposed coffee wholesale wastewater effluent as requested. If you should have any questions or need any additional information please feel free to contact me at [dmarshall@cea-vt.com](mailto:dmarshall@cea-vt.com) or 864-2323 x310.

Respectfully,



David S. Marshall, P.E.  
Principal Engineer



Jacques D. Larose, Licensed Designer  
Staff Engineer

Enclosures

Process and cleaner use in Ferry Rd commercial kitchen Space from Benjamin Lee  
Correspondence from 5 Star Chemicals  
MSDS Sheets for Cleaners and Sanitizers

cc: Catamount/Shelburne LLC. c/o Redstone  
file, 15139

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References:

1. Eliasson, J. (2004). Septic Tank Effluent Values, Washington State Department of Health, Washington.
2. Canter, L.W. and R.C. Knox. 1985. Septic Tank Systems: Effect on Ground Water Quality. Lewis Publishers, Chelsea, MI. pp. 336.

## Processes and cleaner use in Ferry Rd commercial kitchen space

From Benjamin Lee

My company will use this space for a variety of coffee processing with an end result of wholesaling.

I bring in coffee beans, green and roasted, to age in a variety of ways. Some of these beans I grind and others I leave whole. These beans are then repackaged for coffee roasting companies or wholesale. This use doesn't require cleaners or water.

I cold press coffee for use in bottles and direct dispensing into cups. This is a coffee brewing technique that doesn't require heat. This use does require some cleaners, sanitizing, and water. The water that makes up the end product is purchased and brought in to the space from an outside source. The only water from Charlotte will be used to mix cleaners, sanitizers, and for the rinsing of vessels. I use pumps and spray equipment to reduce the required volume of cleaners and sanitizers, as opposed to fully submerging or filling my equipment with the cleaners and sanitizers. The cleaners that I use are PBW and One Step. For these cleaners I use between 2.5 and 5 gallons, properly diluted according to manufacturers' instructions, per week. For sanitizers I use both Star San and Sani Clean by Five Star Chemicals. I use 2.5 to 5 gallons of either cleaner, not both, per week—again, these are diluted strictly to the manufacturer's instructions. Rinse water is used after using a cleaner on the vessels.

All coffee grounds are removed through a series of 3 filtering stages and are composted.

Rinse water with household soap is also used for hand cleaning throughout the process when necessary.

Sanitizer is stored in buckets and reused until PH level rises too high to be effective.



## Five Star Chemicals & Supply, Inc.

4915 E 52<sup>nd</sup> Ave • Commerce City, CO 80022 • (303) 287-0186 • (800) 782-7019 • Fax (303) 287-0391

September 6<sup>th</sup>, 2012

Kevin Harper  
Aqua Vitea

Kevin:

I was contacted by a Deborah Gaynor to help determine the pH of some cleaning solutions. Five Star does manufacture the Saniclean and PBW that you plan on using in the cleaning of your equipment. Ms. Gaynor's attempts to calculate the resulting pH is difficult to find because the formulas are proprietary. Yes, the base ingredients in Saniclean are Phosphoric Acid and Sulfonated Oleic Acid. PBW is based on Sodium Percarbonate, Sodium Metasilicate and Sodium Carbonate. However, there are other ingredients that play a role in the pH.

The pH of the Saniclean solution (1oz/3gallons of water) is 2.9-3.0.

The pH of the PBW solution at 1oz/gal of water is 12.3.  
The pH of a PBW solution at 2oz/gal of water is 12.5.

If you mix 5 gallons of the saniclean solution with 5 gallons of PBW at 1oz/gal the resulting pH would be 11.6.  
If you mix 5 gallons of the saniclean solution with 5 gallons of PBW at 2 oz/gal the resulting pH would be 12.0.

The PBW would be equivalent to using a powder laundry detergent. It is a noncorrosive cleaning compound. The presence of the Percarbonate adds Oxygen to the waste solution, thus reducing the BOD of this product.

The Saniclean solution has less acid in it than a can of Coke would. If there is residual tea in the waste water, it will add to the acidity of the waste solution. Depending on how much residual tea was in the solution it would lower the combined pH below 10.

Both Products that you plan on using are septic tank safe and will biodegrade.

If there is anything else that I can help with please let me know.

Sincerely,

Jon Herskovits  
Chemist  
Five Star Chemicals & Supply Inc.

## MATERIAL SAFETY DATA SHEET

FIVE STAR AFFILIATES, INC.  
6731 E. 50TH AVENUE  
COMMERCE CITY, CO. 80022

PHONE: 303-287-0186  
MSDS DATE: 01/14/04  
REPLACES: 01/11/99

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### IDENTIFICATION

**PRODUCT NAME:** PBW  
**COMPOSITION:** SILICATES, PHOSPHATES, AND SURFACTANTS

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This product may require submission of an annual report on the release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). Components present in this product at a level which reporting under the statute are:

<b>HAZARDOUS INGREDIENTS:</b>	<b>%</b>	<b>TLV LIMIT IN AIR</b>
Sodium Metasilicate (CAS# 006834-92-0)	30%	2 mg/m <sup>3</sup> (PEL) 2 mg/m <sup>3</sup> (OSHA)

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### PHYSICAL DATA

<b>APPEARANCE:</b> White Powder	<b>SOLUBILITY IN WATER:</b> < 10%
<b>ODOR:</b> Odorless	<b>pH of 1% SOLUTION:</b> 11-12
<b>MELTING POINT:</b> N/A	<b>BULK DENSITY:</b> 64 lbs/cu ft

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### FIRE AND EXPLOSION DATA

<b>FLAMMABILITY:</b>	Not flammable
<b>EXTINGUISHING MEDIA:</b>	Water, carbon dioxide, foam
<b>UNUSUAL FIRE &amp; EXPLOSION HAZARDS:</b>	None known

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### HEALTH HAZARD DATA

<b>EYE CONTACT:</b>	Irritant, prolonged contact may damage eye.
<b>SKIN CONTACT:</b>	Irritant, prolonged contact will cause redness and blistering.
<b>INGESTION:</b>	May cause nausea, vomiting, abdominal pain.
<b>INHALATION:</b>	May irritate the nose and throat and cause coughing and chest discomfort.

### EMERGENCY & FIRST AID PROCEDURES

- EYE CONTACT:** Immediately flush with cool running water for at least 15 minutes  
Get medical attention.
- SKIN CONTACT:** Immediately flush with large amounts of cool water. If irritation  
develops see a physician.
- INHALATION:** Get person to fresh air. If burning and irritation persist get  
medical attention.
- INGESTION:** If conscious, give several glasses of milk or water. Do not induce  
vomiting. Call a physician immediately.
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### SPECIAL PROTECTION INFORMATION

- PROTECTIVE GLOVES:** Recommended (rubber, PVC)
- EYE PROTECTION:** Recommended (goggles, safety glasses)
- VENTILATION:** Adequate to remove any dust produced
- RESPIRATORY:** Recommended (dust mask)
- OTHER EQUIPMENT:** None needed
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### REACTIVITY DATA

- INCOMPATIBLE MATERIALS:** Acids
- STABILITY:** Stable under dry conditions, will pick up water.
- POLYMERIZATION:** Keep container closed.
- DECOMPOSITION PRODUCT:** None known
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### SPILL OR LEAK PROCEDURES

- SPILL:** Wear dust mask and safety equipment. Sweep up material and put into  
drums. Flush residue to sewer with large amount of water.
- DISPOSAL:** Dispose of waste materials used in cleaning up spills in a manner  
approved for this material. Consult appropriate federal, state, and local  
regulatory agencies to ascertain proper disposal procedures.
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Prepared by: \_\_\_\_\_

**Charles B. Talley**

**EMERGENCY TELEPHONE: INFOTRAC 1 800-535-5053**

## **P.B.W.**

Patent Nos. 5,663,132 & 5,789,361

***Environmentally friendly, caustic replacement with multiple uses.***

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### **❖ BENEFITS**

- ❖ Replaces Caustic Soda cleaners
- ❖ Effective at All Temperatures
- ❖ Free Rinsing
- ❖ Safe on Polycarbonate surfaces
- ❖ Safe to handle
- ❖ Generates 4 - 5% Oxygen
- ❖ Non-hazardous & Non-corrosive
- ❖ Excellent hard water tolerance
- ❖ Removes protein soil and staining, baked on carbon, and fatty acids

### **❖ DESCRIPTION**

P.B.W. is a buffered alkaline detergent that has been proven to be more than an effective substitute for caustic soda cleaners. Because of its unique formulation of buffers and mild alkalis, it is safe on skin as well as soft metals such as stainless steel, aluminum, and on plastics. P.B.W. uses active oxygen to penetrate carbon or protein soils and is not effected by hard water. The oxygen also helps in reducing B.O.D. and C.O.D. in wastewater, which is an added environmental benefit.

P.B.W. has been formulated as a C.I.P. cleaner and is very effective in removing protein soils found on brew kettles, fermenters, conditioning tanks, filters and all packaging areas. The concentrations to remove these soils are typically in the 1% range. However, due to soil and water conditions this concentration will vary. To help in hard water areas P.B.W. has been formulated with enough chelators to tolerate hard water over 17 grains.

P.B.W. is an excellent choice as a soak cleaner because it does not require excessive heat as do most caustic based cleaners. This product has cleaned brass and copper filters, and industrial aluminum surfaces successfully.

❖ **PROPERTIES**

APPEARANCE.....WHITE POWDER  
RINSING ABILITY.....EXCELLENT  
FOAM.....NONE ABOVE 100 ° F  
pH OF 1% SOLUTION.....12.0%

❖ **GENERAL USE DIRECTIONS**

**CIRCULATION CLEANING:** Use 1 to 3 ounces per gallon depending on soil load. Heat to 130° to 180° F for 30 minutes.

Comment:

**CARBON REMOVAL:** Use 6 to 8 ounces per gallon of water. Heat to 140 ° F for 4 hours or allow to soak cold overnight.

When using P.B.W. in food processing areas the equipment that has been cleaned must be rinsed with potable water. Just prior to use, sanitize the equipment in accordance with public health standards.

❖ **SAFETY**

**DANGER:** Can be harmful if swallowed. Can cause eye irritation. Contains sodium metasilicate and sodium carbonate.

**FIRST AID:** For contact with skin and eyes, flush thoroughly with cool running water. For eyes, flush for at least 15 minutes and get medical attention. If swallowed, do not induce vomiting. Drink large amounts of milk or water. Call a physician.



# Material Safety Data Sheet

Version 1.0  
Revision Date 09/30/2010

MSDS Number 002  
Print Date 09/30/2010

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **One Step No-Rinse Cleanser**

Product Use Description : Detergent/Cleaner

Manufacturer/Distributor : LOGIC, Inc.  
P.O. Box 603  
Trexlerstown, PA 18087

Telephone : 608-658-2866

Emergency telephone number : 608-658-2866  
(24h)

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration
Sodium Carbonate Peroxyhydrate	15630-89-4	> 40 %
Sodium Carbonate	497-19-8	> 20 %
Sodium Citrate	77-92-9	> 10 %
Sodium Chloride	7647-14-5	> 20 %

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

Hazards principally related to irritating properties.  
Does not present any significant hazard to the environment.

### Potential Health Effects

Inhalation : Inhalation of dust may cause irritation to mucosal membranes, nose, and throat.

Eye contact : Severe eye irritation.

Skin contact : Mild irritation.

Ingestion : Irritation to the gastrointestinal tract. May cause bloating of the stomach, belching. Large oral doses may cause gastrointestinal disturbances.

Chronic Health Hazard : This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater.

### Exposure Guidelines

Target Organs : Eyes.

## MATERIAL SAFETY DATA SHEET

FIVE STAR CHEMICAL CO  
6731 E. 50TH AVENUE  
COMMERCE CITY CO 80022

PHONE: 303-287-0186  
MSDS DATE: 12-15-10  
REPLACES: 01-02-09

### IDENTIFICATION

**PRODUCT NAME:** SANICLEAN  
**COMPOSITION:** Solution of Phosphoric acid and Sulfonated Oleic Acid

This product requires submission of an annual report on the release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). Components present in this product are at a level which requires reporting under the statute are:

HAZARDOUS INGREDIENTS:	%	ACGIH TLV
Phosphoric acid	29	1 mg/m
Sulfonate Oleic Acid	10	N/A

(Other compositional information is considered a trade secret.)

### PHYSICAL DATA

**APPEARANCE:** Brown Liquid  
**SOLUBILITY IN WATER:** Complete  
**pH CONCENTRATE:** 1

**ODOR:** Slight Alcohol  
**SPECIFIC GRAVITY:** 1.27

### FIRE AND EXPLOSION DATA

**FLAMMABILITY:** Non - combustible, substance itself does not burn but may decompose to produce corrosive and/or toxic fumes.

**EXTINGUISHING MEDIA:** Water, Carbon Dioxide, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Contact with chlorine will evolve chlorine gas.

**NFPA HAZARD RATING:** Health 3; Flammability 0; Reactivity 1

### HEALTH HAZARD DATA

- CAUSES EYE DAMAGE AND SKIN IRRITATION. HARMFUL IF SWALLOWED.
- TOXIC; inhalation, ingestion, or skin contact with material may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive, and/or toxic gas.
- Runoff from fire control or dilution water may be corrosive.
- Do not mix with chlorine sanitizers or chlorinated cleaners, or a harmful gas will form.

### EMERGENCY & FIRST AID PROCEDURES

**EYE CONTACT:** Flush with cool running water for at least 15 minutes. For eye exposure, irrigate with saline solution. Get medical attention as soon as possible.

**SKIN CONTACT:** Flush with cool running water. If irritation develops, get medical attention. If on clothes wash before reusing.

**INGESTION:** If conscious, give several glasses of milk, water, egg whites or gelatin solution. Get medical attention immediately. DO NOT induce vomiting.

**INHALATION:** Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

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**SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure limits listed in Hazardous Ingredients by using engineering controls. If not feasible, use approved full-face piece air-purifying respirator.

**VENTILATION SYSTEM:** Provide general and/or local exhaust ventilation to maintain airborne levels below the exposure limits in Hazardous Ingredients. Refer to "Industrial Ventilation" by ACGIH for a manual of recommended practices.

**SKIN PROTECTION:** If skin or contamination of clothing is likely, protective clothing should be worn.

**EYE PROTECTION:** Chemical goggles are required.

**PROTECTIVE GLOVES:** Wear chemical resistant gloves.

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**REACTIVITY DATA**

**INCOMPATIBLE MATERIALS:** Alkalis, chlorinated products, and soft metals

**STABILITY:** Product is stable.

**POLYMERIZATION:** Will not occur.

**DECOMPOSITION PRODUCTS:** May give off phosphorous and nitrous oxide at high heat (fire conditions).

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**SPILL OR LEAK PROCEDURES**

**SPILL:** See Emergency/ First Aid Procedures and Special Protection Information for hazards and exposure controls. Dike with sand or earth to contain spill. Avoid ignition sources. Absorb with sand to other non-flammable material and transfer to approved DOT drum for recovery or disposal.

**DISPOSAL:** Dispose of in accordance with local, state and federal regulations.

**GENERAL:** CERCLA/SARA requires notification to the appropriate Federal state and local authorities of releases of hazardous or extremely hazardous quantities equal to or greater than the Reportable Quantities (RQs) in 50 CFR 302.4 and 40 CFR 355. SARA Title 313 requires submissions of annual reports of releases of toxic chemicals that appear in 40 CFR 372. Components present in this product at a level which could require reporting under statute are listed under identification.

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**TRANSPORTATION**

**DOT HAZARD CLASSIFICATION:** Corrosive Liquids, N.O.S.  
8, UN1760, PG III

**PLACARD REQUIRED:** Corrosive, UN1760, Class 8

**LABEL REQUIRED:** Corrosive, Class 8, Label required by OSHA Hazard Communication Standard, and any applicable state and local regulations.

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**EMERGENCY TELEPHONE: INFOTRAC 800-535-5053**

# SANICLEAN

***A low foam, final acid anionic rinse for use in the meat, beverage and food industries.***

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## ❖ **BENEFITS**

- ❖ Leaves Tanks and Equipment Spotless.
- ❖ Not Affected by Organic Materials
- ❖ Accepted by USDA

## ❖ **DESCRIPTION**

SANICLEAN is a blend of phosphoric acid and Sulfonate Oleic Acid. This synergistic blend provides a unique synergistic system that is unaffected by excessive organic soils. SANICLEAN is low foaming. Unlike other acid anionic detergents, SANICLEAN will not produce excessive foam when recirculating through CIP systems. Cleaning with SANICLEAN on a daily basis will leave equipment in an acid condition that will eliminate water spotting, mineral build-up, and corrosion. SANICLEAN is also excellent for part soaking. If kept at a pH of 3 or below SANICLEAN will remain effective for a week at a time and not require sweetening to eliminate spotting and remove odors. It is not recommended to use SANICLEAN on soft metals because of the acid nature of this product.

## ❖ **PROPERTIES**

APPEARANCE ..... DARK BROWN  
 ODOR ..... SLIGHTLY ALCOHOLIC  
 PHOSPHATE CONTENT AS % Phosphorus ..... 9.3%  
 SPECIFIC GRAVITY.....1.170

## ❖ **GENERAL USE DIRECTIONS**

**Brewing Tanks** - Once the equipment has been properly cleaned make up a final acid anionic rinse using SANICLEAN as follows: In every barrel of water add 11 fluid ounces, circulate for a minimum of 3 minutes at ambient temperatures. Just prior to start-up rinse with potable water and follow state and local Health Department regulations covering start up sanitation.

# SANICLEAN

**Bulk Milk Tanks and General CIP** - Once the systems have been properly cleaned follow with a SANICLEAN final rinse. Using an automatic injector or CIP tank set at 1 ounce per 3 gallons of water, run at 100-130°F for 2-3 minutes. Allow all tanks to drain, rinse with potable water. Just prior to start-up follow state and local Health Department regulations covering start up sanitation.

**Part Soaking**- In a 5 gallon bucket add 4 gallons of water and 2 ounces of SANICLEAN. Once all parts have been removed from equipment and hand washed allow them to soak in the SANICLEAN solution for a minimum of 5 minutes. Remove parts from solution. Reassemble wet parts on equipment to reduce the possibility of water spotting or any other undesirable conditions to occur, rinse equipment with potable water. Follow State and Local Health Department Regulations covering start up sanitation.

## ❖ COMPLIANCE

SANICLEAN is authorized by the U.S. Department of Agriculture for use as a general cleaning agent in official, meat, poultry, rabbit, and egg processing establishments. If used at a rate of more than 200 ppm, a potable rinse is required. Always sanitize equipment just prior to start up with a suitable sanitizer as required by local public health regulations.

## ❖ SAFETY

**DANGER:** Corrosive to skin and eye, contains Phosphoric Acid. Harmful if swallowed. Do not get in eyes, on skin or on clothing. Wear protective goggles and clothing when using. Avoid contamination of food. DO NOT MIX SANICLEAN with chlorinated cleaners as chlorine gas will result. See Label for more precautionary information. Contains Phosphoric Acid. A known corrosive.

### FIRST AID:

**For Eyes:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes. Then continue rinsing. Call Poison Control Center or doctor for treatment advice.

**If Swallowed:** Call Poison Control Center or doctor immediately for treatment advice. Have person sip on a glass of water if able to swallow. Do not induce vomiting unless told to do so by the Poison Control doctor. Do not give anything to an unconscious person.

**If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Poison Control Center for treatment advice.

**If Inhaled:** Move person to fresh air. If person is not breathing call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a Poison Control Center or doctor for treatment.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage. Measure against circulatory shock, respiratory depression and convulsion may be needed.

## MATERIAL SAFETY DATA SHEET

**Manufactured By:**  
**Five Star Affiliates, Inc.**  
6731 E. 50<sup>th</sup> Ave.  
Commerce City, CO 80022

**Phone: 303-287-0186**  
**MSDS Date: 8-12-03**  
**Replaces: 5-19-98**

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### IDENTIFICATION

**PRODUCT NAME:** STAR SAN  
**COMPOSITION:** Solution of Phosphoric Acid and Dodecylbenzene sulfonic acid.

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<b>HAZARDOUS INGREDIENTS:</b>	<b>%</b>	<b>ACGIH TLV</b>	<b>OSHA/PEL</b>
Phosphoric Acid (75%) (CAS# 7664-38-2)	50.0	1 mg/ m	1 mg/M3(TWA)
Dodecylbenzene Sulfonic Acid (CAS# 27176-87-0)	15.0	N/A	
Isopropyl Alcohol	10.0	983 mg/M3	1230 mg/M3

(Other compositional information is considered a trade secret).

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### PHYSICAL DATA

<b>APPEARANCE:</b> Dark, amber liquid	<b>SOLUBILITY IN WATER:</b> Complete
<b>ODOR:</b> Slight	<b>SPECIFIC GRAVITY:</b> 1.326
<b>pH OF CONCENTRATE:</b> 1	<b>FLASH POINT:</b> NONE
<b>EVAPORATION RATE:</b> .9 (water=1)	

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### FIRE AND EXPLOSION DATA

<b>FLASH POINT:</b>	121 deg. F
<b>FLAMMABILITY:</b>	Non - combustible, substance itself does not burn but may decompose to produce corrosive and/or toxic fumes.
<b>EXTINGUISHING MEDIA:</b>	Water, Carbon Dioxide, Foam
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS:</b>	Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Contact with chlorine will evolve chlorine gas.
<b>NFPA HAZARD RATING:</b>	Health 3; Flammability 0; Reactivity 1

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### HEALTH HAZARD DATA

- **EYE CONTACT:** Corrosive to the eyes may cause severe damage.
  - **INHALATION:** Irritating to the nose, throat, and respiratory tract.
  - **INGESTION:** Harmful if swallowed. Swallowing product can cause severe burns to lining of throat and stomach
  - **SKIN CONTACT:** Substance is corrosive. Causes severe skin burns.
  - **SIGNS AND SYMPTOMS OF EXPOSURE:** Destruction to skin and eye tissue
  - **SUPPLEMENTAL HEALTH INFORMATION: NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, reparatory depression and convulsions may be needed.
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### EMERGENCY & FIRST AID PROCEDURES

<b>EYE CONTACT:</b>	Flush with cool running water for at least 15 minutes. For eye exposure irrigate with saline solution Get medical attention as soon as possible.
<b>SKIN CONTACT:</b>	Flush with cool running water. If irritation develops get medical attention.