



# WARRIOR PTE LTD

Blk 17, Marsiling Industrial Estate Road 1 # 01-11  
Singapore 739279  
Tel 6364 5100, 6364 5060, 6367 3676  
Fax: (65) 6364 0629

UEN. No. 20-0401392-H  
CR No. 7139 204 00 00 M

[war99@singnet.com.sg](mailto:war99@singnet.com.sg)  
<http://www.warrior.com.sg>

## MATERIAL SAFETY DATA SHEET

01/01/2020

**Product:** C 100 CITRIC KLEEN

Consisting of:

Citric Solvent	30 %
Caustic Soda	1 %
Surfactant	10 %
Water Balance	

Flash Point: Nil  
Fire Hazard: Neither non Explosive nor spontaneously inflammable in air  
Safety Precaution: Avoid direct contact for Prolong period of time. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Health Hazard: Solutions of sodium hydroxide will cause [chemical burns](#), permanent injury or scarring, and [blindness](#) if it contacts unprotected human or animal tissue. [Protective equipment](#) such as [rubber gloves](#), [safety clothing](#) and [eye protection](#) should always be used when handling the material or its solutions.



## SECTION 1 - PRODUCT IDENTIFICATION



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Chemical Family: Acidic  
Formula: Mixture  
C.A.S. Registry No.: 1310-73-2  
TSCA Inventory Status: All ingredients are listed on the USEPA's TSCA inventory  
Canadian Domestic Substances List Status: All ingredients have been nominated or are eligible for inclusion

Workplace Hazardous Materials Information System (WHMIS) Classification: E  
Product Use: Cleaning agent  
SARA 313 Information: Not Applicable

## **SECTION 2 - HAZARDOUS INGREDIENTS**

Hazard Summary Statement: CAUTION! **CORROSIVE LIQUID**. Contact with skin results in severe burns with possible deep ulceration. Eye contact will produce severe and painful injury. Inhalation of mists causes irritation of the nose, throat, mucous membranes and lungs.  
**C.A.S.# 77-92-9 Citric Acid 99.5% EINECS/ELINCS 201-069-1**

Material Number in Product TLV-TWA PEL-TWA

### ***Legislative Footnotes***

1. Ingredient listed on SARA Section 313 List of Toxic Chemicals.
2. Ingredient listed on the *Pennsylvania Hazardous Substances List*.
3. Ingredient listed on the California listing of *Chemicals Known to the State to Cause Cancer or Reproductive Toxicity*.
4. *Reproductive Toxicity*.
5. Ingredient listed on the *Massachusetts Substance List*.
6. *Workplace Hazardous Materials Information System* ingredient found on the Ingredient Disclosure
7. List - Canada.
8. Ingredient listed on the *New Jersey Right to Know Hazardous Substance List*.

### **Notes**

*TLV-TWA* - Threshold Limit Value - Time Weighted Average guideline for concentration of the chemical substance in the ambient workplace air. American Conference of Governmental Industrial Hygienists (ACGIH).

*OSHA PEL* - OSHA Permissible Exposure Limit, 8-hour TWA. 29 CFR 1910.1000, Transitional Limits column, Table Z-1-A, Table Z-2 and Table Z-3.

## **SECTION 3 - PHYSICAL DATA**

Odor: Mild Citric , slightly pungent Boiling Point: 148°C (298°F)  
Percent Volatiles: 50% Vapor Pressure: 19 mm Hg @ 65.5°C (150°F)  
Solubility in Water: Soluble Vapor Density: N.A.  
Physical State: Liquid

## **SECTION 4 - FIRE & EXPLOSION HAZARD DATA**



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Flash Point: Not combustible.  
Lower Explosive Limit (LEL): Not Applicable  
Upper Explosive Limit (UEL): Not Applicable  
Self-Ignition Temperature: Not Applicable

## **SECTION 5 - REACTIVITY**

Stability: Stable  
Hazardous Polymerization: Will not occur.  
Hazardous Decomposition Products: Not combustible.

### Incompatibility (Materials to Avoid):

This product reacts with water generating heat. Do not add water to this product, always add caustic to water slowly and in small amounts to avoid boiling and spattering. This product reacts violently or explosively with chlorinated hydrocarbons. It attacks leather and wool resulting in destruction of those materials and possible chemical exposure to the individual. Caustic solutions can generate hydrogen gas on contact with aluminum, zinc or materials galvanized with zinc.

## **SECTION 6 - HEALTH HAZARD DATA**

Threshold Limit Value:  $2 \text{ mg/m}^3$  - Ceiling.  
Permissible Exposure Limit (PEL):  $2 \text{ mg/m}^3$   
Primary Routes of Exposure: Inhalation, skin and eye contact.

### Effects of Overexposure:

This material is extremely corrosive to all body tissue. Skin contact will result in severe burns and frequently with deep ulceration. Eye contact will produce severe and painful injury. Inhalation of mist will cause irritation and may even cause damage to the entire respiratory tract varying from mild irritation of mucous membranes to severe pneumonitis. Symptoms may not be immediately painful or visible. Swallowing usually results in severe injury.

### Emergency and First Aid Procedures:

Inhalation: Remove affected individual to fresh air. Obtain medical attention immediately.

Eye Contact: Immediately flush eyes with lukewarm water for at least 15 minutes while lifting upper and lower eyelids. Continue to flush the eyes if there is any indication of residual chemical. Seek medical attention immediately.

Skin Contact: Immediately remove contaminated clothing, and flush exposed area with lukewarm water for at least 15 minutes. Continue to flush skin if there is any indication of residual chemical. Seek medical attention immediately.

Ingestion: DO NOT INDUCE VOMITING! Immediately dilute by drinking water or milk, then neutralize with diluted vinegar or fruit juice.

## **SECTION 7 - SPILL & LEAK PROCEDURE**



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Steps to be taken in case material is released or spilled: Issue a warning: CORROSIVE MATERIAL. Keep non-essential personnel away from spill area. Wear rubber protective clothing, e.g., gloves, boots, aprons, and chemical splash goggles and face shield. Do not touch spilled material. Contain the spill and use absorbents and pumps to remove "ponded" liquid. Transfer the spilled material to caustic resistant containers labeled: CORROSIVE. Avoid flushing chemical into public sewers or water system. With careful handling, dilute acid, preferable acetic acid, may be used to neutralize final traces of caustic. Flush the cleaned area with water.

Waste Disposal Method: HAZARDOUS WASTE. EPA Hazardous Waste Number: D002 (if pH is greater than 12.5). Dispose of in a licensed hazardous waste disposal facility in accordance with all applicable Federal, State and Local health and pollution laws and regulations. (See 40 CFR 261).

## **SECTION 8 - SPECIAL PROTECTION INFORMATION**

Ventilation: Ventilation should always be provided to draw mists and vapors away from workers to prevent routine inhalation. Ventilation should be adequate to maintain the ambient workplace atmosphere below the limits listed in Section II.

Respiratory Protection: Wear a NIOSH/MSHA-approved, airline or self-contained respirator whenever exposures exceed the limits listed in Section II. Use in accordance with the manufacturers use limitations and OSHA Standard 1910.134 (29 CFR). (MSDS - SODIUM HYDROXIDE SOLUTION - 50%)

Eye/Face Protection: Chemical goggles with full face shield.

Protective Equipment: Wear impervious (e.g. rubber) gloves, boots or shoes, coveralls or other protective clothing as appropriate to prevent contact with liquid. Check with glove/clothing manufacturers to determine materials resistant to the chemicals shown in Section II.

Additional: *Do not smoke or consume food or beverage in the work areas. Wash thoroughly after handling the product.*

## **SECTION 9 - SPECIAL PRECAUTIONS**

### Material Handling:

Do not breathe mists or vapors. Avoid skin and eye contact. Use under well-ventilated conditions. Utilize good personal hygiene practices, e.g., thoroughly washing after handling the product. Remove contaminated clothing and shower at once. Wash contaminated clothing before reuse. (Discard leather shoes.) PROVIDE A SAFETY SHOWER AND EYEWASH STATION IN THE WORK AND HANDLING AREAS.

### Storage:

Store in water-tight containers in a cool, dry place separate from the normal work area and away from materials that react with sodium hydroxide. Use corrosion resistant structural materials and lighting and ventilation systems in the storage area. Store in suitable, labeled containers and maintain in a tightly closed condition when not in use. Protect containers from physical damage. Post appropriate warning signs.

## **SECTION 10 - HAZARD CODES**



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NFPA (2002) HMIS (National Fire Protection Association)  
(Hazardous Materials Identification System)

Health: 3  
Flammability: 0  
Reactivity: 1

Special: Corrosive Personal Protection: X\*

Key:

0 = Insignificant \* See MSDS for specified protection  
1 = Slight  
2 = Moderate  
3 = High  
4 = Extreme(MSDS - SODIUM HYDROXIDE SOLUTION - 50%)

## **SECTION 11 – Disposal considerations**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR parts 261.3. Additionally waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification

**RCRA P-Series: None Listed.**

**RCRA U-Series: None Listed**



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## USER'S RESPONSIBILITY

This bulletin cannot cover all possible situations, which the user may experience during processing. Each aspect of the user's operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained within this bulletin should be provided to the user's employees or customers. Westlake CA&O Corporation must rely upon the user to utilize this information to develop appropriate work practice guidelines and employee instructional programs for his or her operation.

## DISCLAIMER OF LIABILITY

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## SHIPPING INFORMATION

### IDENTIFICATION - DOMESTIC TRANSPORTATION

Proper Shipping Name (172.101(c)): SODIUM HYDROXIDE SOLUTION

(Technical Name(s)) 172.203(k): (Contains 50% Sodium Hydroxide)

Hazard Class 172.101(d): 8 UN/NA# 172.101(e): UN 1824

Haz. Substance 171.8: Sodium Hydroxide Reportable Quantity: 1,000 Lbs

Inhalation Hazard 172.2a(b): N/A

Package Code 172.101(f): PG II Placarded: CORROSIVE

### PACKAGING (Part 173)

◆ Packaging Section (172.101(i)) –(Col. 8(A): 173.154)(Col. 8(B): 173.202)(Col. 8(C): 173.242)

◆ General Packaging Section - General 173.24 Hazard Class: CORROSIVE

## MARKING

A. Proper Shipping Name (172.301(a)) (Technical Name) (172.301(b))

B. UN/NA Number (172.301(a))

C. Name & Address (172.301(d))

D. THIS END UP (172.312(a))

E. Hazardous Substance RQ (Name) (172.324)

ORM Designation (172.316(a))

Inhalation Hazard (172.313(a))

### DOMESTIC LABELING

1. HMT LABELS (172.400)

2. Additional Subsidiary Hazard (172.402(a))

## IATA 2005 Edition

Proper Shipping Name (Col. B):

Class/Division (Col. C): 8 Subsidiary Risk (Col. D): N/A

UN/ID# (Col. A): UN 1824

Carrier Special Provisions (Col. M): A3

### PACKAGING

◆ Max. Qty. Per Pkg. (Cols. H/J) - Passenger: 1 Liter Cargo: 30 Liters

◆ Packaging Instructions (Cols. G/I) - Passenger: 809 Cargo: 813



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Toxicological Information: Nil

Storage and Transport: Store in cold covered area, away from direct heat.

Shelf Life: 3 years in unopened containers.

Package: 5 kg plastic carboy,  
20 kg-plastic-pail,  
200 kg-plastic drum.