

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Product form : Mixture  
 Trade name : Prolystica® Restore™ Descaler and Neutralizing Agent  
 Product code : 1C45

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

Industrial/Professional use spec : For hospital and professional use only. Not for home use.  
 Use of the substance/mixture : Descaler and Neutralizing Agent

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

STERIS Corporation  
 P. O. Box 147, St. Louis, MO 63166, US  
 Telephone Number for Information: 1-800-444-9009 (Customer Service-Scientific Products)

**1.4. Emergency telephone number**

Emergency number : US Emergency Telephone No.1-314-535-1395 (STERIS); 1-800-424-9300 (CHEMTREC)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GHS-US classification**

Met. Corr. 1 H290  
 Skin Corr. 1A H314  
 Eye Dam. 1 H318

**2.2. Label elements****GHS-US labelling**

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger  
 Hazard statements (GHS-US) : H290 - May be corrosive to metals  
 H314 - Causes severe skin burns and eye damage.  
 Precautionary statements (GHS-US) : P234 - Keep only in original container  
 P260 - Do not breathe mist, spray, vapours  
 P264 - Wash hands thoroughly after handling  
 P280 - Wear protective gloves/protective clothing and eye/face protection  
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P390 - Absorb spillage to prevent material damage  
 P405 - Store locked up.

**2.3. Other hazards**

No additional information available.

**SECTION 3: Composition/information on ingredients****3.1. Substance**

Not applicable.

**3.2. Mixture**

Name	Product identifier	%	GHS-US classification
Citric acid	(CAS No) 77-92-9	15 - 40	Eye Irrit. 2A, H319
Oxalic acid	(CAS No) 144-62-7	0.1 – 1.5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Eye Dam. 1, H318

**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 the label where possible).  
 First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Get medical attention.

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First-aid measures after skin contact	: Immediately flush skin with plenty of water for at least 15 minutes. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical advice/attention.
First-aid measures after eye contact	: In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately get medical attention.
First-aid measures after ingestion	: If victim completely conscious/alert. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. Give water or milk if the person is fully conscious.

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

Symptoms/injuries	: Symptoms may be delayed. Corrosive to eyes and skin. Causes severe skin burns and eye damage.
Symptoms/injuries after inhalation	: Toxic if inhaled.
Symptoms/injuries after skin contact	: Corrosive to eyes and skin.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Irritating to the respiratory system, may cause throat pain and cough.

### 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	: Use extinguishing media appropriate for surrounding fire. Foam. Dry powder. Carbon dioxide. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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

Hazardous decomposition products in case of fire	: Thermal decomposition generates: Fume. Carbon monoxide. Carbon dioxide. Phosphorous oxide.
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### 5.3. Advice for firefighters

Firefighting instructions	: Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protective equipment for firefighters	: Use self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	: Very flammable gas (hydrogen) may be formed on contact with metals.

## SECTION 6: Accidental release measures

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

General measures	: Do not breathe fumes, vapors. Avoid contact with skin, eyes and clothes.
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#### 6.1.1. For non-emergency personnel

Protective equipment	: Wear protective gloves and eye/face protection. For further information refer to Section 8: "Exposure controls/personal protection".
Emergency procedures	: Stop leak if safe to do so. 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	: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Leftovers: Neutralize with sodium bicarbonate. Neutralize with dry sodium carbonate. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Absorb spillage to prevent material damage. Collect spillage. Store away from other materials. Comply with applicable local, national and international regulation.
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### 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

Additional hazards when processed	: May be corrosive to metals.
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- Precautions for safe handling : Product for industrial use only. Read label before use. Provide good ventilation in process area to prevent formation of vapor. Avoid all eye and skin contact and do not breathe vapor and mist. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Hygiene measures : Take care for general good hygiene and housekeeping. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

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

- Technical measures : Provide adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.
- Storage conditions : Keep only in the original container in a cool, well ventilated place. Keep container closed when not in use.
- Incompatible materials : Strong oxidizing agents. Strong bases. Aluminium.
- Storage area : Store in dry, cool, well-ventilated area.
- Special rules on packaging : Correctly labelled.
- Packaging materials : Keep only in the original container. Store in corrosive resistant container with a resistant inner liner.

### 7.3. Specific end use(s)

No additional information available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Oxalic acid (144-62-7)		
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
USA ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>

### 8.2. Exposure controls

- Appropriate engineering controls : Ensure adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
- Personal protective equipment : Avoid all unnecessary exposure. Personal protective equipment should be selected based upon the conditions under which this product is handled or used. Protective clothing. Gloves. Protective goggles.



- Hand protection : Wear rubber gloves.
- Eye protection : Wear chemical splash goggle.
- Skin and body protection : Wear suitable protective clothing. Wear long sleeves. Boots.
- Respiratory protection : Work in well-ventilated zones or use proper 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
- Appearance : Clear
- Color : Light straw
- Odor : Slight chemical odor
- Odor threshold : No data available
- pH : 1.2 Approximately
- Relative evaporation rate (butylacetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : 99 °C (210.2 °F)
- Flash point : No data available
- Self ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available

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Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: ca. 1.18 g/ml Specific Gravity
Solubility	: Water: Completely soluble
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
Oxidising 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

No additional information available.

### 10.2. Chemical stability

Stable under normal conditions of use.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong oxidizers. Strong bases. Aluminium.

### 10.6. Hazardous decomposition products

Thermal decomposition generates: Corrosive vapours. Phosphorous oxide. Fume. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Prolystica <sup>®</sup> Restore <sup>™</sup> Descaler and Neutralizing Agent	
LD50 oral rat	> 2000 mg/kg

Sodium xylene sulfonate (1300-72-7)	
LD50 oral rat	7200 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
ATE (oral)	7200.000 mg/kg bodyweight

Oxalic acid (144-62-7)	
LD50 oral rat	7500 mg/kg
LD50 dermal rat	20000 mg/kg
ATE (oral)	500.000 mg/kg bodyweight
ATE (dermal)	1100.000 mg/kg bodyweight

Skin corrosion/irritation	: Causes severe skin burns and eye damage pH: 1.2 Approximately
Serious eye damage/irritation	: Causes serious eye damage pH: 1.2 Approximately
Respiratory or skin sensitisation	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified.

Sodium xylene sulfonate (1300-72-7)	
National Toxicity Program (NTP) Status	1

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Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Harmful if swallowed
Symptoms/injuries after inhalation	: Toxic if inhaled
Symptoms/injuries after skin contact	: Corrosive to eyes and skin
Symptoms/injuries after eye contact	: Causes serious eye damage
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Irritating to the respiratory system, may cause throat pain and cough.

## SECTION 12: Ecological information

### 12.1. Toxicity

Citric acid (77-92-9)	
LC50 fishes 1	1516 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [Static])
EC50 Daphnia 1	120 mg/l (Exposure time: 72 h - Species: Daphnia magna)
Sodium xylene sulfonate (1300-72-7)	
EC50 Daphnia 1	> 1020 mg/l 48 hours
NOEC (acute)	470 48 hours- daphnia
Oxalic acid (144-62-7)	
EC50 Daphnia 1	125 - 150 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

### 12.2. Persistence and degradability

Prolystica <sup>®</sup> Restore <sup>™</sup> Descaler and Neutralizing Agent	
Persistence and degradability	The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

### 12.3. Bioaccumulative potential

Prolystica <sup>®</sup> Restore <sup>™</sup> Descaler and Neutralizing Agent	
Bioaccumulative potential	Not established.
Citric acid (77-92-9)	
Log Pow	-1.72 (at 20 °C)
Oxalic acid (144-62-7)	
BCF fish 1	(no bioaccumulation)
Log Pow	-0.81 (at 30 °C)

### 12.4. Mobility in soil

No additional information available.

### 12.5. Other adverse effects

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/national regulations.
Additional information	: Unused product: Hazardous waste (corrosive) based on pH.
Ecology - waste materials	: Avoid release to the environment.

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### SECTION 14: Transport information

In accordance with DOT

#### 14.1. UN number

UN-No.(DOT) : 3265  
DOT NA no. UN3265

#### 14.2. UN proper shipping name

DOT Proper Shipping Name : UN3265, Corrosive Liquid, Acidic, Organic, N.O.S. (Citric Acid Solution), 8, PG III  
Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive material 49 CFR 173.136  
Hazard labels (DOT) : 8 - Corrosive substances.



DOT Symbols : G - Identifies PSN requiring a technical name  
Packing group (DOT) : III - Minor Danger  
DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).  
T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / (1 + a (tr - tf))$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.  
TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.  
DOT Packaging Exceptions (49 CFR 173.xxx) : 154  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203  
DOT Packaging Bulk (49 CFR 173.xxx) : 241

#### 14.3. Additional information

Other information : Corrosive.  
Special transport precautions : 4 x 1 gal package not approved for air shipment.

#### Overland transport

Packing group (ADR) : III  
Class (ADR) : 8 - Corrosive substances.  
Hazard identification number (Kemler No.) : 80  
Classification code (ADR) : C3  
Danger labels (ADR) : 8 - Corrosive substances.



Orange plates : 

Tunnel restriction code : E  
Excepted quantities (ADR) : E1

#### Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.  
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

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### Air transport

DOT Quantity Limitations Passenger aircraft/rail : 5 L  
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 4 x 1 gal package not approved for air shipment  
CFR 175.75)

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Citric acid (77-92-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Sodium xylene sulfonate (1300-72-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Oxalic acid (144-62-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

Not applicable.

### 15.3. US State regulations

This product contains a chemical known to the State of California to cause cancer.

## SECTION 16: Other information

Sources of Key data : None.

Other information : None.

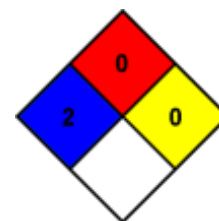
Full text of H-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Met. Corr. 1	Corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H302	May be harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H319	Causes serious eye irritation

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

*The information on this sheet is not a specification and does not guarantee specific properties. The information is intended to provide general knowledge as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instruction or recommendations are not followed.*