Assessment of Alternatives to Cleaners and Sanitizers for the Brewing Industry

Supplement 2:
Safety Data Sheets

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

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Contents

SAFETY DATA SHEET

Issue Date 14-Nov-2014 **Revision Date** 14-Nov-2014 **Version** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Product Name POWDER KEG

Other means of identification
Product Code 1138
UN/ID No. UN1759

Recommended use of the chemical and restrictions on use
Recommended Use See label for recommended uses.
Uses advised against Use only as stated on label.

Details of the supplier of the safety data sheet
Supplier Alpha Chemical Services, Inc.
46 Morton Street
Stoughton, MA 02072
Phone: (800) 464-9872

Emergency telephone number
Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Not classified
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label elements

Emergency Overview

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation

Appearance White powder	**Physical state** Granules	**Odor** Bland

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
Specific Treatment (See Section 4 on the SDS)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Immediately call a POISON CENTER or doctor/physician
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Immediately call a POISON CENTER or doctor/physician

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Other Information

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Sodium Tripolyphosphate	7758-29-4	15-40	*
Sodium Metasilicate	6834-92-0	15-40	*
Sodium Percarbonate	15630-89-4	10-30	*
Poly(itaconic acid, sodium salt)	26099-89-8	7-13	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice Immediate medical attention is required.

Skin Contact Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Immediate medical attention is required Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes Keep eye wide open while rinsing Do not rub affected area

Inhalation Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms No Information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls Showers, Eyewash stations & Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear chemical resistant gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Granules
Appearance White powder
Odor Bland

Odor threshold No Information available

Property	Values	Remarks • Method
pH	11.0 - 12.0	1% solution
Melting point/freezing point	No Information available	
Boiling point / boiling range	No Information available	
Flash point	None	
Evaporation rate	No Information available	
Flammability (solid, gas)	No Information available	
Flammability Limits in Air		
Upper flammability limit:	No Information available	
Lower flammability limit:	No Information available	
Vapor pressure	No Information available	
Vapor density	No Information available	
Specific Gravity	No Information available	
Water solubility	Complete	
Solubility in other solvents	No Information available	
Partition coefficient	No Information available	
Autoignition temperature	No Information available	
Decomposition temperature	No Information available	
Kinematic viscosity	No Information available	
Viscosity	No Information available	

Explosive properties No Information available
Oxidizing properties No Information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Exposure to air or moisture over prolonged periods.

Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information No data available

Inhalation Causes burns.

Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Skin Contact The product causes burns of eyes, skin and mucous membranes.

Ingestion Causes burns. Harmful if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Metasilicate 6834-92-0	= 1153 mg/kg (Rat)	-	-
Sodium Tripolyphosphate 7758-29-4	= 3120 mg/kg (Rat)	> 7940 mg/kg (Rabbit)	-
Sodium Percarbonate 15630-89-4	= 1034 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-
Poly(itaconic acid, sodium salt) 26099-89-8	> 2000 mg/kg (Rat)	> 0.056 mg/cm3 (Rat)	-
Alcohols, C6-10, ethoxylated propoxylated 68987-81-5	= 2745 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 50 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No Information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Corrosivity Causes burns. Extremely corrosive and destructive to tissue. Risk of serious damage to eyes.
Sensitization No Information available.
Germ cell mutagenicity No Information available.
Carcinogenicity No Information available.

Reproductive toxicity No Information available.

STOT - single exposure No Information available.
STOT - repeated exposure No Information available.
Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Aspiration hazard No Information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

40.5% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sodium Metasilicate 6834-92-0	-	210: 96 h Brachydanio rerio mg/L LC50 semi-static 210: 96 h Brachydanio rerio mg/L LC50	216: 96 h Daphnia magna mg/L EC50
Sodium Tripolyphosphate 7758-29-4	-	1650: 48 h Leuciscus idus mg/L LC50	-
Sodium Percarbonate 15630-89-4	70: 240 h Chlorella emersonii mg/L EC50	70.7: 96 h Pimephales promelas mg/L LC50 static	4.9: 48 h Daphnia pulex mg/L EC50

Persistence and degradability
No Information available.

Bioaccumulation
No Information available.

Other adverse effects No Information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT
UN/ID No. UN1759
Proper shipping name Corrosive solids, n.o.s.
Hazard Class 8
Packing Group II
Special Provisions 128, IB8, IP2, IP4, T3, TP33
Description UN1759, Corrosive solids, n.o.s. (Sodium Metasilicate), 8, II,
Emergency Response Guide Number 154

15. REGULATORY INFORMATION

International Inventories
TSCA Does not comply

DSL/NDSL	Complies
EINECS/ELINCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium Tripolyphosphate 7758-29-4	-	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** D

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Revision Note
No Information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Issue Date 27-Apr-2017 **Revision Date** 01-Apr-2019 **Version** 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Product Name VERACITY CAUSTIC CLEANER

Other means of identification
Product Code 5439

Recommended use of the chemical and restrictions on use
Recommended Use Consult your technical service representative for specific use procedures and instructions.
Uses advised against Use only as stated on label.

Details of the supplier of the safety data sheet
Supplier Alpha Chemical Services, Inc.
46 Morton Street
Stoughton, MA 02072
Phone: (800) 464-9872

Emergency telephone number
Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Not classified
Acute toxicity - Dermal	Not classified
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements
Causes severe skin burns and eye damage

Appearance Blue **Physical state** Liquid **Odor** Odorless

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Specific Treatment (See Section 4 on the SDS)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Immediately call a POISON CENTER or doctor/physician
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Immediately call a POISON CENTER or doctor/physician

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Other Information

Unknown Acute Toxicity 1% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Sodium Hydroxide	1310-73-2	10-30	*
Propylene Glycol	57-55-6	3-7	*
Trade Secret	Proprietary	1-5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice Immediate medical attention is required.

Skin Contact Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. For minor skin contact, avoid spreading material on unaffected skin. For severe burns, immediate medical attention is required.

Eye contact Immediate medical attention is required Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes Keep eye wide open while rinsing Do not rub affected area Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes

Inhalation Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms No Information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in

properly labeled containers.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents. Strong acids. Aluminum.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium Hydroxide 1310-73-2	Ceiling: 2 mg/m³	TWA: 2 mg/m³ (vacated) Ceiling: 2 mg/m³	IDLH: 10 mg/m³ Ceiling: 2 mg/m³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers, Eyewash stations & Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Blue
Odor Odorless
Odor threshold No Information available

Property	Values	Remarks • Method
pH	13.0 +	
Melting point/freezing point	No Information available	
Boiling point / boiling range	No Information available	
Flash point	None	
Evaporation rate	No Information available	
Flammability (solid, gas)	No Information available	
Flammability Limits in Air		
Upper flammability limit:	No Information available	
Lower flammability limit:	No Information available	
Vapor pressure	No Information available	
Vapor density	No Information available	
Specific Gravity	No Information available	
Water solubility	Soluble	
Solubility in other solvents	No Information available	

Partition coefficient	No Information available
Autoignition temperature	No Information available
Decomposition temperature	No Information available
Kinematic viscosity	No Information available
Viscosity	No Information available
Explosive properties	No Information available
Oxidizing properties	No Information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Exposure to air or moisture over prolonged periods.

Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents. Strong acids. Aluminum.

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The primary effects and toxicity of this material are due to it corrosive nature.

Inhalation Causes burns.

Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Skin Contact The product causes burns of eyes, skin and mucous membranes.

Ingestion Causes burns.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Sodium Hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-
Propylene Glycol 57-55-6	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	-
Sodium Gluconate 527-07-1	> 2000 mg/kg (Rat)	-	-
Nitric Tris(Methylene Phosphonic Acid), Pentasodium Salt 20592-85-2	= 17800 mg/kg (Rat)	= 15800 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms No Information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Corrosivity Causes burns. Extremely corrosive and destructive to tissue. Risk of serious damage to eyes.

Sensitization No Information available.

Germ cell mutagenicity No Information available.
Carcinogenicity No Information available.

Reproductive toxicity No Information available.
STOT - single exposure No Information available.
STOT - repeated exposure No Information available.
Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target organ effects EYES, Respiratory system, Skin.
Aspiration hazard No Information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 1% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

2.05% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sodium Hydroxide 1310-73-2	-	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	-
Propylene Glycol 57-55-6	19000: 96 h Pseudokirchneriella subcapitata mg/L EC50	41 - 47: 96 h Oncorhynchus mykiss mL/L LC50 static 51600: 96 h Oncorhynchus mykiss mg/L LC50 static 51400: 96 h Pimephales promelas mg/L LC50 static 710: 96 h Pimephales promelas mg/L LC50	1000: 48 h Daphnia magna mg/L EC50 Static 10000: 24 h Daphnia magna mg/L EC50

Persistence and degradability
No Information available.

Bioaccumulation
No Information available.

Other adverse effects No Information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

US EPA Waste Number D002

14. TRANSPORT INFORMATION

DOT
Description UN1760, Corrosive liquids, n.o.s. (contains Sodium Hydroxide), 8, II
Emergency Response Guide Number 154

15. REGULATORY INFORMATION

International Inventories

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Hydroxide 1310-73-2	1000 lb	-	-	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium Hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium Hydroxide 1310-73-2	X	X	X
Propylene Glycol 57-55-6	X	-	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** D

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Revision Note
No Information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Issue Date 10-Apr-2015 **Revision Date** 26-Mar-2018 **Version** 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Product Name LIQUID METAL SAFE

Other means of identification
Product Code A 5535
UN/ID No. UN1760

Recommended use of the chemical and restrictions on use
Recommended Use Detergent.
Uses advised against Use only as stated on label.

Details of the supplier of the safety data sheet
Supplier Alpha Chemical Services, Inc.
46 Morton Street
Stoughton, MA 02072
Phone: (800) 464-9872

Emergency telephone number
Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Not classified
Acute toxicity - Dermal	Not classified
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements
Causes severe skin burns and eye damage

Appearance Colorless **Physical state** Liquid **Odor** Odorless

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Specific Treatment (See Section 4 on the SDS)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Immediately call a POISON CENTER or doctor/physician
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Immediately call a POISON CENTER or doctor/physician

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Sodium Silicate	1344-09-8	10-30	*
Sodium Hydroxide	1310-73-2	3-7	*
Tetrasodium EDTA	64-02-8	1-5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice Immediate medical attention is required.

Skin Contact Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. For minor skin contact, avoid spreading material on unaffected skin. For severe burns, immediate medical attention is required.

Eye contact Immediate medical attention is required Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes Keep eye wide open while rinsing Do not rub affected area Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes

Inhalation Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms No Information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents. Strong acids. Aluminum.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium Hydroxide 1310-73-2	Ceiling: 2 mg/m³	TWA: 2 mg/m³ (vacated) Ceiling: 2 mg/m³	IDLH: 10 mg/m³ Ceiling: 2 mg/m³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers, Eyewash stations & Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Colorless
Odor Odorless
Odor threshold No Information available

Property	Values	Remarks • Method
pH	13.0 +	
Melting point/freezing point	No Information available	
Boiling point / boiling range	No Information available	
Flash point	None	
Evaporation rate	No Information available	
Flammability (solid, gas)	No Information available	
Flammability Limits in Air		
Upper flammability limit:	No Information available	
Lower flammability limit:	No Information available	
Vapor pressure	No Information available	
Vapor density	No Information available	
Specific Gravity	1.2	
Water solubility	Complete	
Solubility in other solvents	No Information available	
Partition coefficient	No Information available	
Autoignition temperature	No Information available	

Decomposition temperature	No Information available
Kinematic viscosity	No Information available
Viscosity	No Information available
Explosive properties	No Information available
Oxidizing properties	No Information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Exposure to air or moisture over prolonged periods.

Incompatible materials
Incompatible with strong acids and bases. Incompatible with oxidizing agents. Strong acids. Aluminum.

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information The primary effects and toxicity of this material are due to it corrosive nature.

Inhalation Causes burns.

Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Skin Contact The product causes burns of eyes, skin and mucous membranes.

Ingestion Causes burns.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Sodium Silicate 1344-09-8	= 1960 mg/kg (Rat)	> 4640 mg/kg (Rabbit)	-
Sodium Hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-
Tetrasodium EDTA 64-02-8	= 1658 mg/kg (Rat) = 10 g/kg (Rat)	-	-

Information on toxicological effects

Symptoms No Information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Corrosivity	Causes burns. Extremely corrosive and destructive to tissue. Risk of serious damage to eyes.
Sensitization	No Information available.
Germ cell mutagenicity	No Information available.
Carcinogenicity	No Information available.

Reproductive toxicity No Information available.
STOT - single exposure No Information available.
STOT - repeated exposure No Information available.
Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target organ effects EYES, Respiratory system, Skin.
Aspiration hazard No Information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sodium Silicate 1344-09-8	-	301 - 478: 96 h Lepomis macrochirus mg/L LC50 3185: 96 h Brachydanio rerio mg/L LC50 semi-static	216: 96 h Daphnia magna mg/L EC50
Sodium Hydroxide 1310-73-2	-	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	-
Tetrasodium EDTA 64-02-8	1.01: 72 h Desmodesmus subspicatus mg/L EC50	59.8: 96 h Pimephales promelas mg/L LC50 static 41: 96 h Lepomis macrochirus mg/L LC50 static	610: 24 h Daphnia magna mg/L EC50

Persistence and degradability
No Information available.

Bioaccumulation
No Information available.

Other adverse effects No Information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

US EPA Waste Number D002

14. TRANSPORT INFORMATION

DOT

UN/ID No. UN1760
Proper shipping name Corrosive liquids, n.o.s.
Hazard Class 8
Packing Group II
Special Provisions B2, IB2, TII, TP2, TP27
Description UN1760, Corrosive liquids, n.o.s. (Sodium Hydroxide), 8, II
Emergency Response Guide Number 154

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Hydroxide 1310-73-2	1000 lb	-	-	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium Hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium Hydroxide 1310-73-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 0	**Personal protection** D

Issue Date 10-Apr-2015

Revision Date 26-Mar-2018

Revision Note

No Information available

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End of Safety Data Sheet

SAFETY DATA SHEET

Issue Date 17-Oct-2016 **Revision Date** 17-Oct-2016 **Version** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Product Name LFE

Other means of identification
Product Code 5009

Recommended use of the chemical and restrictions on use
Recommended Use CIP Cleaner.
Uses advised against Use only as stated on label.

Details of the supplier of the safety data sheet
Emergency telephone number
Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Not classified
Acute toxicity - Dermal	Not classified

Label elements

Emergency Overview

Warning

Hazard statements
Causes eye irritation

Appearance Clear **Physical state** Liquid **Odor** None

Precautionary Statements - Prevention
Wash hands and any exposed skin thoroughly after handling.

Precautionary Statements - Response
Specific Treatment (See Section 4 on the SDS)
IF IN EYES: 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

Hazards not otherwise classified (HNOC)
Other Information
Unknown Acute Toxicity 0.15% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Propylene Glycol	57-55-6	10-30	*
Alcohols, C6-10, ethoxylated propoxylated	68987-81-5	10-30	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

Skin Contact Wash skin with soap and water.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician

Inhalation Remove to fresh air.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No Information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
No Information available.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls Showers, Eyewash stations & Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear chemical resistant gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance Clear
Odor None
Odor threshold No Information available

Property	Values	Remarks • Method
pH	9.0-10.0	
Melting point/freezing point	No Information available	
Boiling point / boiling range	No Information available	
Flash point	None	
Evaporation rate	No Information available	
Flammability (solid, gas)	No Information available	
Flammability Limits in Air		
Upper flammability limit:	No Information available	
Lower flammability limit:	No Information available	
Vapor pressure	No Information available	
Vapor density	No Information available	
Specific Gravity	1.04	
Water solubility	Complete	
Solubility in other solvents	No Information available	
Partition coefficient	No Information available	
Autoignition temperature	No Information available	
Decomposition temperature	No Information available	
Kinematic viscosity	No Information available	
Viscosity	No Information available	
Explosive properties	No Information available	
Oxidizing properties	No Information available	

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Extremes of temperature and direct sunlight.

Incompatible materials
None known based on information supplied.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information No data available

Inhalation No data available.

Eye contact No data available.

Skin Contact No data available.

Ingestion No data available.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Propylene Glycol 57-55-6	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms No Information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No Information available.
Germ cell mutagenicity No Information available.
Carcinogenicity No Information available.
Reproductive toxicity No Information available.
STOT - single exposure No Information available.
STOT - repeated exposure No Information available.
Aspiration hazard No Information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0.15% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

20.15% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Propylene Glycol 57-55-6	19000: 96 h Pseudokirchneriella subcapitata mg/L EC50	41 - 47: 96 h Oncorhynchus mykiss mL/L LC50 static 51600: 96 h Oncorhynchus mykiss mg/L LC50 static 710: 96 h Pimephales promelas mg/L LC50 51400: 96 h Pimephales promelas mg/L LC50 static	10000: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability
No Information available.

Bioaccumulation
No Information available.

Other adverse effects No Information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Does not comply
AICS	Does not comply

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Propylene Glycol 57-55-6	X	-	X

U.S. EPA Label Information
EPA Pesticide Registration Number Not Applicable

16. OTHER INFORMATION

NFPA	**Health hazards** 1	**Flammability** 0	**Instability** 0	**Physical and Chemical Properties** Yes
HMIS	**Health hazards** 1	**Flammability** 0	**Physical hazards** 0	**Personal protection** N/A

Issue Date 17-Oct-2016
Revision Date 17-Oct-2016
Revision Note
No Information available
Disclaimer
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End of Safety Data Sheet

Free Shipping on Starter Kits. 100% Happiness Guarantee.

FORCE of NATURE™

SDS & TEST RESULTS:
Force of Nature Safety Data Sheet

Healthier Cleaning Innovations LLC
7 Grassy Lane
Westford, Massachusetts 01886
David Owens 443-880-0885

1. Chemical Product and Company Identification

a. Common Name/Trade Name: Electrolyzed Water
b. Manufacturer/Supplier: Healthier Cleaning Innovations (See above)
c. Commercial Names: Hypochlorous Acid and Sodium Hydroxide mixture
d. Synonym: None
e. Chemical Name: Hypochlorous Acid, Sodium Hydroxide
f. Formula: H20; NaCl; HOCl; NaOH
g. Chemical Family: Inorganic salt solution in water – weak acid
h. CAS #: Mixture
i. RTECS: Not applicable
j. TSCA: Not applicable
k. CI#: Not applicable

2. Composition and Information on Ingredients

		Exposure Limits			
Name	CAS#	TWA (mg/m3)	STEL(mg/m3)	CEIL (mg/m3)	% by
Water (H20)					>98
Sodium Chloride	7647-14-5				<0.5

(NaCl)					
Hypochlorous Acid (HOCl)	7790-92-3				<0.05
Sodium Hydroxide (NaOH)	1310-73-2				<0.00

Toxicological Data on Ingredients: ORAL (LD50): >2000mg/kg

Note: Product Composition ranges shown are typical for health, safety, and environmental use and not intended as specifications.

3. Hazards Identification

POTENTIAL ACUTE HEALTH EFFECTS

a. Skin Contact: Those individually allergic to Chlorine should avoid direct contact as it may cause irritation with symptoms of redness, itching, and swelling.
b. Ingestion: Ingestion of large quantities (>greater than one liter or one quart) may produce gastric discomfort, nausea, vomiting, and diarrhea
c. Carcinogenicity: Active ingredients are not listed by OSHA, EPA, or any other authority as carcinogen or tumor promoter

POTENTIAL CHRONIC HEALTH EFFECTS:

a. Skin Effects: Negative
b. Eye Effects: Negative
c. Carcinogenic Effects: Negative
d. Mutagenic Effects: Negative
e. Teratogenic Effects: No known significant effects or critical hazards
f. Developmental Toxicity: No known significant effects or critical hazards

4. First Aid Measures

a. Inhalation: If dizziness occurs, immediately get into an open space – no other action is required.
b. Ingestion: Drink large quantities of water and consult with a physician.

5. Fire Fighting Measures

a. Flammability of Product: Non-flammable
b. Auto-ignition Temperature: Not applicable
c. Flash Point: Not applicable
d. Flammable Limits: Not applicable
e. Products of Combustion: Not applicable
f. Fire Hazards in Presence of Various Substances: None
g. Explosion Hazards in Presence of Various Substances: None
h. Fire Fighting Media and Instructions:
i. Choose extinguishing media suitable for surrounding materials, chemical type foam, sand, and water spray
ii. Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (bunker gear) and self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may be easily extinguished with a portable fire extinguisher, use of a SCBA may not be required. Do not allow chlorine gas to accumulate within a confined space. Insure proper ventilation to the outside.
i. Special Remarks on Fire Hazards: This product is a non-flammable substance
j. Special Remarks on Explosion Hazards: Not available

6. Accidental Release Measures

a. Small Spill: No special requirement. Wash to waste.
b. Large Spill: No special requirement. Wash to waste.

7. Handling and Storage

a. Precautions: No special handling required.
b. Storage: If containers are used, insure containers are located in a well-ventilated area.

8. Exposure Controls and Personal Protection

a. Respiratory Protection: Not necessary as long as there is adequate ventilation
b. Protective Clothing: Not required
c. Ventilation: Good room ventilation is normally adequate for a safe use of this product.

9. Physical and Chemical Properties

a. Physical State and Appearance: Liquid
b. Molecular Weight: Mixture
c. pH (1% soln/water): 5 to 7
d. Boiling Point: >100 degrees Celsius
e. Melting Point: <0 degrees Celsius
f. Critical Temperature: Not available
g. Specific Gravity: 1.0g/ml
h. Vapor Pressure: Not available
i. Vapor Density: Not available
j. Volatility: Not availability
k. Odor Threshold: Not available
l. Water/Oil Dist. Coeff.: Not available
m. Iconicity (in water); Not available
n. Dispersion Properties: See solubility of water
o. Solubility in Water: Easily soluble in cold water
p. Odor Characteristic: Slight chlorine-like
q. Taste: Not available
r. Color: Colorless

10. Stability and Reactivity

a. Stability: The product is stable under normal conditions of temperature and pressure
b. Instability Temperature: Not available
c. Conditions of Instability: Not available
d. Incompatibilities: Ammonia, Acids
e. Corrosiveness: Oxidizer
f. Special remarks on corrosiveness: None
g. Hazardous Decomposition Products: Hypochlorous acid decomposes into chlorine
h. Polymerization: Will not occur

11. Toxicological Information

a. Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.
b. Toxicity to Animals: None
c. Chronic Effects on Humans: None
i. Carcinogenic Effects: Negative
ii. Mutagenic Effects: Negative
d. Other Toxic Effects on Humans: Negative
e. Special remarks on Toxicity to Animals: None

12. Ecological Information

a. Exotoxicity: Not available
b. BOD5 and COD: Not available
c. Products of Biodegrading: Negative
d. Toxicity of the Products of Biodegrading: The products itself and its products of degradation are not toxic
e. Special Remarks on the Products of Biodegrading: Not available

13. Disposal Considerations

a. Waste Disposal: No special precautions are required for this product

14. Transport information

a. DOT Classification: No special precautions for this product
b. Identification: Not applicable
c. Special Provisions for Transport: Not applicable
d. DOT (Pictograms): Not applicable

15. Other Regulatory Information and Pictograms

a. Federal and State Regulations:
i. United States: Health and Safety Reporting List: None of the chemicals are on the Health and Safety Reporting List
ii. Section 12b: None of the chemicals are listed under TSCA Section 12b
iii. TSCA Significant New Use Rule: None of the chemicals in this material have an SNUR under TSCA
iv. Clean Air Act: This material does not contain any hazardous air pollutants
v. OSHA: None of the chemicals in this product are considered highly hazardous by OSHA
vi. Canada: This product does not contain any known ingredient(s) on the “Ingredient Disclosure List”
vii. European Community Regulatory: All intentional ingredients are listed on the European’s EINECS Inventory
viii. State Regulations: Not available
ix. Local Regulations: Not available

b. California Proposition 65 Warnings: This product does not contain any chemicals known to the state of California that cause cancer, birth defects, or any reproductive harm.
c. Other Regulations: OSHA – Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). To the best of our knowledge, this Safety Data Sheet conforms to the requirements of US OSHA 29 CFR 1910.1200.91/155/EEC and Canadian Hazardous Products Act.
d. Other Classifications:
i. WHMIS (Canada) – Not available
ii. DSCL (EEC) – Not available
e. HMIS (U.S.A.) –
f. WHMIS (Canada): This product does not contain any known ingredient(s) on the "Ingredient Disclosure List".
g. DSCL (Europe) – Pictograms: Not available
h. TDG (Canada) – Pictograms: Not available
i. ADR (Europe) – Pictograms: Not available
j. Protective Equipment: None

16. Other Information

a. MSDS Code: Not available
b. References: Not available
c. Other special considerations: Not available
d. Preparation Date: 7-28-16
Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to reliable, HCI, LLC assumes no responsibility for the completeness or accuracy of the information contained herein.

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Frequently Asked Questions

How is this different than cleaning with vinegar?

Can this be used on stone?

Can I recycle the capsules?

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SURFACE-CLEANSE/930®

Concentrated Neutral Cleaner

Date of issue: April 1, 2020 Replaces version of October 1, 2019

SECTION 1: Identification

1.1 Product identifier

Trade name **SURFACE-CLEANSE/930®**

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

Relevant identified uses Industrial use
Do not use for private purposes (household)

1.3 Details of the supplier of the safety data sheet

International Products Corporation
201 Connecticut Drive
Burlington, NJ
08016
United States
Https://www.ipcol.com/
+1 6093868770

1.3.1 Additional information

Supplier (distributor)

Country	Name	Postal code/city	Telephone	e-Mail	Website
United Kingdom	IPCW	SE9 3TL London	+44 (0) 208-857-5678	saleseurope@ipcol.com	www.ipcol.com

e-mail (competent person) tmcguckin@ipcol.com (Thomas P. McGuckin)

1.4 Emergency telephone number

1.4.1 Emergency information service 1-609-386-8770
This number is only available during the following office hours: Mon-Fri 08:00 AM - 04:30 PM, Eastern Time

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

This mixture does not meet the criteria for classification.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word not required
- Pictograms not required

2.3 Other hazards

There is no additional information.

Hazards not otherwise classified

Contains . May produce an allergic reaction.
May be harmful if swallowed (GHS category 5: acutely toxic - oral).
Very toxic to aquatic life with long lasting effects (GHS category 1: aquatic toxicity - acute and/or chronic).
Toxic to aquatic life with long lasting effects (GHS category 2: aquatic toxicity - acute and/or chronic).

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Undecanol, ethyoxylated	CAS No 34398-01-1	10 – < 25	Acute Tox. 5 / H303 Acute Tox. 5 / H313	
EO PO Isodecyl Alcohol	CAS No 37251-67-5	10 – < 25	Skin Irrit. 2 / H315 Eye Dam. 1 / H318 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410	
2-methylisothiazol-3(2H)-one	CAS No 2682-20-4	0 – < 0.1	Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 2 / H330 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Skin Sens. 1A / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410	

SECTION 4: First-aid measures

4.1 Description of first- aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: Sawdust, Kieselgur (diatomite), Sand, Universal binder

Appropriate containment techniques

Use of adsorbent materials.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

- Specific designs for storage rooms or vessels

- Storage temperature Recommended storage temperature: 2 – 43 °C

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

This information is not available.

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Color	colorless-clear
Odor	characteristic

Other safety parameters

pH (value)	5.5 – 7.5 (25 °C)
Melting point/freezing point	not determined
Initial boiling point and boiling range	100 °C
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Explosive limits	not determined
Vapor pressure	0.05 mmHg
Density	0.995 – 0.999 $^{g}/_{ml}$ at 25 °C
Vapor density	this information is not available
Solubility(ies)	not determined

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	not determined
Viscosity	not determined
Explosive properties	none
Oxidizing properties	none

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Shelf-life: Five years from the date of manufacture.

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Do not mix with other chemicals.

10.5 Incompatible materials

Avoid extended contact with uncured paint, zinc, aluminum, cold rolled steel, or copper and its alloys. Avoid contact with polycarbonate, polymethyl methacrylate, and polyphenylene oxide as these plastics may craze over time. Refer to product's compatibility sheets for further details.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Basis of test data.

Classification procedure

The classification is based on tested mixture.

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

This mixture does not meet the criteria for classification.

Acute toxicity

Shall not be classified as acutely toxic.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization

Contains . May produce an allergic reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Endocrine disrupting potential

None of the ingredients are listed.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

May be disposed according to local, state and federal regulations.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number not subject to transport regulations

14.2 UN proper shipping name not assigned

14.3 Transport hazard class(es) not assigned

14.4 Packing group not assigned

14.5 Environmental hazards non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA) all ingredients are listed

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

None of the ingredients are listed.

- Specific Toxic Chemical Listings (EPCRA Section 313)

None of the ingredients are listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

None of the ingredients are listed.

Clean Air Act

None of the ingredients are listed.

Right to Know Hazardous Substance List

- Hazardous Substance List (NJ-RTK)

none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	1	material that must be preheated before ignition can occur

Category	Rating	Description
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	National inventories	Status
EU	REACH Reg.	not all ingredients are listed
US	TSCA	all ingredients are listed

Legend
REACH Reg. REACH registered substances
TSCA Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association

Abbr.	Descriptions of used abbreviations
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
IMDG	International Maritime Dangerous Goods Code
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitization
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

The classification is based on tested mixture.

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H301	Toxic if swallowed.
H303	May be harmful if swallowed.
H311	Toxic in contact with skin.
H313	May be harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Safety Data Sheet
acc. to 29 CFR 1910.1200 App D

MICRO® AO7
Citric Acid Cleaner

Date of issue: April 1, 2020 Replaces version of October 1, 2019

SECTION 1: Identification

1.1 Product identifier

Trade name **MICRO® AO7**

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

Relevant identified uses Industrial use
Do not use for private purposes (household)

1.3 Details of the supplier of the safety data sheet

International Products Corporation
201 Connecticut Drive
Burlington, NJ
08016
United States
Https://www.ipcol.com/
+1 6093868770

1.3.1 Additional information

Supplier (distributor)

Country	Name	Postal code/city	Telephone	e-Mail	Website
United Kingdom	IPCW	SE9 3TL London	+44 (0) 208-857-5678	saleseurope@ipcol.com	www.ipcol.com

e-mail (competent person) tmcguckin@ipcol.com (Thomas P. McGuckin)

1.4 Emergency telephone number

1.4.1 Emergency information service 1-609-386-8770
This number is only available during the following office hours: Mon-Fri 08:00 AM - 04:30 PM, Eastern Time

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	2A	Eye Irrit. 2A	H319

For full text of abbreviations: see SECTION 16.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word warning

- Pictograms

GHS07

Hazard statements.

H319	Causes serious eye irritation.

- Precautionary statements

P280	Wear eye protection/face protection.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Citric Acid	CAS No 77-92-9	25 – < 50	Acute Tox. 5 / H313	
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	CAS No 68584-25-8	1 – < 5	Acute Tox. 5 / H303 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Aquatic Chronic 3 / H412	
Ammonium Hydroxide	CAS No 1336-21-6	1 – < 5	Skin Corr. 1B / H314 Eye Dam. 1 / H318 STOT SE 3 / H335 Aquatic Acute 1 / H400	

SECTION 4: First-aid measures

4.1 Description of first- aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: Sawdust, Kieselgur (diatomite), Sand, Universal binder

Appropriate containment techniques

Use of adsorbent materials.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

  Use local and general ventilation. Use only in well-ventilated areas.

- Handling of incompatible substances or mixtures

- Keep away from

  Caustic solutions

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

- Specific designs for storage rooms or vessels

- Storage temperature Recommended storage temperature: 2 – 43 °C

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

This information is not available.

Relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	DNEL	4.1 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	DNEL	5.29 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	PNEC	0.268 mg/l	aquatic organisms	freshwater	short-term (single instance)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	PNEC	0.027 mg/l	aquatic organisms	marine water	short-term (single instance)

Relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	PNEC	7 $^{mg}/_{l}$	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	PNEC	8.1 $^{mg}/_{kg}$	aquatic organisms	freshwater sediment	short-term (single instance)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	PNEC	8.1 $^{mg}/_{kg}$	aquatic organisms	marine sediment	short-term (single instance)
Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs., compds. with triethanolamine	68584-25-8	PNEC	35 $^{mg}/_{kg}$	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Color	clear-colorless-light yellow
Odor	mild

Other safety parameters

pH (value)	2 – 4 (25 °C)
Melting point/freezing point	-8 °C
Initial boiling point and boiling range	100 °C
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Explosive limits	not determined
Vapor pressure	<5 Pa at 20 °C
Density	1.12 – 1.16 $^{g}/_{ml}$ at 25 °C
Vapor density	this information is not available
Solubility(ies)	not determined

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	440 °C (auto-ignition temperature (liquids and gases))

Viscosity

- Kinematic viscosity	8.621 $^{mm^2}/_{s}$
- Dynamic viscosity	10 cP

Explosive properties	none
Oxidizing properties	none

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

Shelf-life: Five years from the date of manufacture.

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Do not mix with other chemicals.

10.5 Incompatible materials

Avoid extended contact with uncured paint, zinc, aluminum, cold rolled steel, or copper and its alloys. Avoid contact with polycarbonate, polymethyl methacrylate, and polyphenylene oxide as these plastics may craze over time. Refer to product's compatibility sheets for further details.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Basis of test data.

Classification procedure

The classification is based on tested mixture.

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Shall not be classified as acutely toxic.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Endocrine disrupting potential

None of the ingredients are listed.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

May be disposed according to local, state and federal regulations.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number not assigned

14.2 UN proper shipping name not assigned

14.3 Transport hazard class(es) not assigned

14.4 Packing group not assigned

14.5 Environmental hazards non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA) all ingredients are listed

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

None of the ingredients are listed.

- Specific Toxic Chemical Listings (EPCRA Section 313)

None of the ingredients are listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
Ammonium Hydroxide	1336-21-6		1	1000 (454)

Legend
1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

Clean Air Act

None of the ingredients are listed.

Right to Know Hazardous Substance List

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
Ammonium Hydroxide	1336-21-6		CO

Legend
CO Corrosive

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	2	temporary or minor injury may occur
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	National inventories	Status
EU	REACH Reg.	all ingredients are listed
US	TSCA	all ingredients are listed

Legend
REACH Reg. REACH registered substances
TSCA Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
IMDG	International Maritime Dangerous Goods Code
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STOT SE	Specific target organ toxicity - single exposure
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

The classification is based on tested mixture.

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Star San

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/9/2015

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

1.1. Product identifier

Product form : Mixture

Product name : Star San

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

Use of the substance/mixture : Acid Anionic Sanitizer

1.3. Details of the supplier of the safety data sheet

Five Star Chemicals & Supply Inc
4915 E 52nd Ave
Commerce City, CO 80022

1.4. Emergency telephone number

Emergency number : 800-535-5053
INFOTRAC

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Corr. 1A H314
Aquatic Acute 3 H402

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
H402 - Harmful to aquatic life

Precautionary statements (GHS-US) : P260 - Do not breathe vapors, mist, spray
P264 - Wash hands, forearms and face thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves, eye protection
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
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
P310 - Immediately call a POISON CENTER
P321 - Specific treatment (see first aid on this label)
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
phosphoric acid, conc=75%, aqueous solution	(CAS No) 7664-38-2	50	Skin Corr. 1B, H314
dodecylbenzenesulphonic acid	(CAS No) 27176-87-0	15	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314 Aquatic Acute 2, H401

Full text of H-phrases: see section 16

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 person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting.

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

Symptoms/injuries : Causes severe skin burns and eye damage.

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

Reactivity : Corrosive vapors.

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. Avoid release to the environment.

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. Do not breathe vapors, mist, spray. Avoid contact during pregnancy/while nursing.

Hygiene measures : Wash hands and forearms thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight. Keep container closed when not in use.

Incompatible products : Strong bases.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Star San	
ACGIH	Not applicable
OSHA	Not applicable

phosphoric acid, conc=75%, aqueous solution (7664-38-2)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³
ACGIH	ACGIH STEL (mg/m³)	3 mg/m³
ACGIH	Remark (ACGIH)	URT, eye, & skin irr
OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³

dodecylbenzenesulphonic acid (27176-87-0)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or face shield.

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 : amber

Odor : No data available

Odor threshold : No data available

pH : 1

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : > 142 °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 at 20 °C	:	No data available
Relative density	:	1.36
Solubility	:	Soluble in water. Water: 100
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

Corrosive vapors.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

phosphoric acid, conc=75%, aqueous solution (7664-38-2)	
LD50 oral rat	4400 mg/kg (Rat)
ATE US (oral)	4400.000 mg/kg body weight

dodecylbenzenesulphonic acid (27176-87-0)	
LD50 oral rat	650 mg/kg (Rat; Literature study)
ATE US (oral)	650.000 mg/kg body weight

Skin corrosion/irritation	:	Causes severe skin burns and eye damage. pH: 1
Serious eye damage/irritation	:	Not classified pH: 1
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
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 data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life.

phosphoric acid, conc=75%, aqueous solution (7664-38-2)	
LC50 fish 1	138 mg/l (96 h; Pisces; Pure substance)
LC50 other aquatic organisms 1	240 mg/l (96 h; Protozoa; Pure substance)
LC50 fish 2	100 - 1000 mg/l (Pisces; Pure substance)
LC50 other aquatic organisms 2	100 - 1000 mg/l (Pure substance)
TLM fish 1	138 ppm (24 h; Gambusia affinis; Pure substance)
Threshold limit other aquatic organisms 1	240 mg/l (96 h; Protozoa; Pure substance)
Threshold limit other aquatic organisms 2	100 - 1000,Pure substance

dodecylbenzenesulphonic acid (27176-87-0)	
LC50 fish 1	3.2 - 5.6 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	1 - 10 mg/l (48 h; Daphnia magna; GLP)
LC50 fish 2	3.5 - 10 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2	5.88 mg/l (48 h; Daphnia magna)
TLM fish 1	4.2 - 5.6,96 h; Lepomis macrochirus; Soft water
TLM fish 2	4.2 - 5.6,96 h; Pimephales promelas; Soft water
Threshold limit algae 1	29 mg/l (96 h; Selenastrum capricornutum)
Threshold limit algae 2	127.9 mg/l (72 h; Scenedesmus subspicatus; GLP)

12.2. Persistence and degradability

Star San	
Persistence and degradability	Not established.

phosphoric acid, conc=75%, aqueous solution (7664-38-2)	
Persistence and degradability	Biodegradability: not applicable. No (test)data on mobility of the components available. Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

dodecylbenzenesulphonic acid (27176-87-0)	
Persistence and degradability	Readily biodegradable in water. Low potential for adsorption in soil.
Chemical oxygen demand (COD)	2.41 g O_2/g substance

12.3. Bioaccumulative potential

Star San	
Bioaccumulative potential	Not established.

phosphoric acid, conc=75%, aqueous solution (7664-38-2)	
Log Pow	-0.77 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.

dodecylbenzenesulphonic acid (27176-87-0)	
BCF fish 1	108 - 551 (Pisces)
BCF fish 2	130 (72 h; Leuciscus idus)
BCF other aquatic organisms 1	140 (120 h; Bacteria)
BCF other aquatic organisms 2	60 (24 h; Chlorophyta)

dodecylbenzenesulphonic acid (27176-87-0)	
Log Pow	1.96
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

dodecylbenzenesulphonic acid (27176-87-0)	
Surface tension	35 N/m (25 °C; 800 mg/l)

12.5. Other adverse effects

Effect on ozone layer :

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/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1760 Corrosive liquids, n.o.s. (Contains Phosphoric Acid and Dodecylbenzensulfonci acid), 8, III

UN-No.(DOT) : UN1760

Proper Shipping Name (DOT) : Corrosive liquids, n.o.s.
(Contains Phosphoric Acid and Dodecylbenzensulfonci acid)

Hazard Classes (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive

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

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

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

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’’

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

UN-No. (IMDG) : 1760
Proper Shipping Name (IMDG) : CORROSIVE LIQUID, N.O.S.
Class (IMDG) : 8 - Corrosive substances
Packing group (IMDG) : III - substances presenting low danger

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Star San
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

dodecylbenzenesulphonic acid	CAS No 27176-87-0	15.00%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

phosphoric acid, conc=75%, aqueous solution (7664-38-2)	
Not listed on the United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb

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 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

phosphoric acid, conc=75%, aqueous solution (7664-38-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

15.4. FIFRA Information

Hazard Data:	FIFRA Classification/Typical Hazard Labeling, as outlined in EPA Label Review Manual:	OSHA HCS Requirement for Section 2 of SDS:
Signal Word	Danger	Danger
Acute Toxicity, oral LD50	(Category III) Harmful if swallowed	Not Classified
Acute Toxicity, Dermal LD50	(Category III) Harmful if absorbed through skin	Not Classified
Acute Toxicity, inhalation LC50	(Category III) Harmful if inhaled	Not Classified
Skin Irritation	(Category I) Corrosive. Causes skin burns.	(Category 1) Causes severe skin burns and eye damage.
Eye Irritation	Causes serious eye damage.	(Category 1) Causes serious eye damage.
Sensitization	This product is skin sensitizer	This product is skin sensitizer
Germ Cell Mutagenicity	Not Classified	Not Classified
Carcinogenicity	Not Classified	Not Classified
Reproductive/developmental Toxicity	Not Classified	Not Classified
Specific target organ toxicity, single exposure	Not Classified	Not Classified
Specific target organ exposure repeated exposure	Not Classified	Not Classified
Aspiration	Not Classified	Not Classified
Environmental (Aquatic Toxicity)	Not Classified	Harmful to aquatic life

FIFRA Classification: This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also included other important information, including direction for use. Following is the hazard information as required on the pesticide label:

DANGER
Corrosive
Causes eye damage or skin burns.
Do not get in eyes, on skin, or on clothes.
Avoid breathing spray mist.
Wear protective clothing and rubber gloves.
Wash thoroughly with soap and water after handling.
Remove contaminated clothing and wash before reuse.

SECTION 16: Other information

Other information : None.

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H401	Toxic to aquatic life
H402	Harmful to aquatic life

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Safety Data Sheet
Spartan Chemical Company, Inc.

Revision Date: 04-Apr-2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: **PAA SANITIZER**
Product Number: 3127
Recommended Use: No Rinse Sanitizer Disinfectant
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier:
Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification

Skin Corrosion/Irritation:	Category 1
Serious Eye Damage/Eye Irritation:	Category 1
Specific Target Organ Toxicity (Single Exposure):	Category 3 (Respiratory tract)
Oxidizing Liquids	Category 2
Corrosive to Metals:	Category 1

GHS Label Elements

Signal Word: **Danger**

Symbols:

Hazard Statements:
Causes severe skin burns and serious eye damage.
May cause respiratory irritation
May intensify fire; oxidizer
May be corrosive to metals.

Precautionary Statements:

Prevention:
Do not breathe mist, vapors or spray.
Wash hands and any exposed skin thoroughly after handling.
Wear protective gloves. Wear eye / face protection. Wear protective clothing.
Use only outdoors or in a well-ventilated area
Keep in original or other corrosion resistant container.

Response: **IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.**

-Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

-Skin IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.

-Inhalation:	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
-Ingestion:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
-Specific Treatment:	See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.
Fire:	In case of fire: Use water spray (fog), carbon dioxide, foam, dry chemical for extinction, Do not use organic compounds to extinguish fire
Spill:	Absorb spillage to prevent material damage.
Storage:	Store locked up. Store in corrosion resistant container. Store in a well-ventilated place. Keep container tightly closed.
Disposal:	Dispose of contents and container in accordance with local, state and federal regulations.
Hazards Not Otherwise Classified:	Not Applicable
Other Information:	• Corrosive. • Harmful if swallowed • Do not mix with hypochlorite-type bleach or other household chemicals as hazardous vapors or gases may be produced. • NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. • Contains hydrogen peroxide. Ingestion may result in distention of esophagus and stomach. • Keep out of reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	40-70
Hydrogen Peroxide	7722-84-1	10-30
Peroxyacetic Acid	79-21-0	3-7
Acetic Acid	64-19-7	3-7

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact:	Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.
-Skin Contact:	Take off immediately all contaminated clothing and shoes. Rinse with water or shower for at least 20 minutes. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Wash contaminated clothing before reuse.
-Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.
-Ingestion:	Rinse mouth. Do NOT induce vomiting. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Never give anything by mouth to an unconscious person.
Note to Physicians:	NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Contains hydrogen peroxide. Ingestion may result in distention of esophagus and stomach.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	Use, Water spray (fog), Carbon dioxide, Foam, Dry chemical, Do not use organic compounds to extinguish fire
Specific Hazards Arising from the Chemical:	Combustion products are toxic. Releases oxygen when heated to decomposition which may intensify fire. Risk of overpressure and bursting due to decomposition in containers, pipes and other confined spaces. May cause fire in contact with wood, cardboard or other flammable organic materials.
Hazardous Combustion Products:	May include Carbon monoxide and other toxic gases or vapors. On decomposition product releases oxygen which may intensify fire

Protective Equipment and Precautions for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Dilute with plenty of water.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Disposal container should not be made of metal. Disposal container must be vented due to possible decomposition and pressure build-up. Do not return spilled product into its original container for re-use due to possible decomposition and pressure build-up.

7. HANDLING AND STORAGE

Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Do not return product to original container. Do not confine product in unvented containers or between closed valves. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wash thoroughly after handling.

Storage Conditions: Store containers upright and tightly closed using vented closures to prevent pressure build-up. Store in a cool, well ventilated place. Elevated temperatures accelerate product decomposition. Do not confine product in unvented containers or between closed valves. Keep away from flammable substances. Keep out of the reach of children.

Incompatible Materials: Wood, cardboard or other flammable organic materials. Sodium hypochlorite (or other hypochlorites). Metals.

Suggested Shelf Life: 1 year from date of manufacture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits: .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
Hydrogen Peroxide 7722-84-1	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m³ (vacated) TWA: 1 ppm (vacated) TWA: 1.4 mg/m³	IDLH: 75 ppm TWA: 1 ppm TWA: 1.4 mg/m³
Peroxyacetic Acid 79-21-0	STEL: 0.4 ppm inhalable fraction and vapor	-	-
Acetic Acid 64-19-7	STEL: 15 ppm TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m³	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm STEL: 37 mg/m³

Engineering Controls: Provide good general ventilation.
If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered.
Eye wash stations and shower facilities should be readily accessible in areas where the product is handled.

Personal Protective Equipment

Eye/Face Protection: Wear splash goggles. For severe use-conditions, wear a face shield over the goggles.

Skin and Body Protection: Wear rubber or other chemical-resistant gloves. Use of impervious apron, boots and other protective equipment should be considered in order to prevent or minimize contact with this product.

Respiratory Protection: If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.
Respirator selection must be made by a technically qualified person who is familiar with the specific work conditions.

General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling.
See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	Colorless
Odor:	Vinegar odor
pH:	< 1.0
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	No information available
Flash Point:	> 93 °C / > 199 °F
Evaporation Rate:	< 1.0 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.12
Solubility(ies):	Soluble in water
Partition Coefficient:	No information available.
Autoignition Temperature:	> 270 °C / > 518 °F
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: Reactive with bases, metals, reducing agents and combustible materials.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Contact with sodium hypochlorite (or other hypochlorites) releases chlorine gas. Contact with metals and organic matter may result in fire and explosion.

Conditions to Avoid: High temperature accelerates decomposition of product. Use of product in unvented systems (sealed pipes, containers and other confined spaces) risks overpressure and bursting due to decomposition.

Incompatible Materials: Wood, cardboard or other flammable organic materials. Sodium hypochlorite (or other hypochlorites). Metals.

Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors. Releases oxygen when heated to decomposition which may intensify fire.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eyes, Skin, Ingestion, Inhalation.

Symptoms of Exposure:

-Eye Contact: Pain, redness, swelling of the conjunctiva and tissue damage. Eye contact may cause permanent damage.

-Skin Contact: Pain, redness, blistering and possible chemical burn.

-Inhalation: Irritation or damage to the mucus membranes of the respiratory tract. Nasal discomfort and coughing.

-Ingestion: Damage or chemical burns to mouth, throat and stomach. Pain, nausea, vomiting and diarrhea. Contains hydrogen peroxide. Ingestion may result in distention of esophagus and stomach.

Immediate, Delayed, Chronic Effects

Product Information: Data not available or insufficient for classification.

Target Organ Effects: -Eyes. Respiratory System. -Skin. Teeth.

Numerical Measures of Toxicity

The following acute toxicity estimates (ATE) are calculated based on the GHS document.

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ATEmix (oral): 4395 mg/kg
ATEmix (dermal): 10902 mg/kg
ATEmix (inhalation-dust/mist): 6 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available
Hydrogen Peroxide 7722-84-1	= 1518 mg/kg (Rat)	= 2000 mg/kg (Rabbit) = 4060 mg/kg (Rat)	= 2 g/m^3 (Rat) 4 h
Peroxyacetic Acid 79-21-0	= 1540 mg/kg (Rat)	= 1410 µL/kg (Rabbit)	Not Available
Acetic Acid 64-19-7	= 3310 mg/kg (Rat)	= 1060 mg/kg (Rabbit)	= 11.4 mg/L (Rat) 4 h

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
Hydrogen Peroxide 7722-84-1	Not Available	16.4: 96 h Pimephales promelas mg/L LC50 18 - 56: 96 h Lepomis macrochirus mg/L LC50 static 10.0 - 32.0: 96 h Oncorhynchus mykiss mg/L LC50 static	Not Available	18 - 32: 48 h Daphnia magna mg/L EC50 Static
Acetic Acid 64-19-7	Not Available	79: 96 h Pimephales promelas mg/L LC50 static 75: 96 h Lepomis macrochirus mg/L LC50 static	Not Available	65: 48 h Daphnia magna mg/L EC50 Static

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.
US EPA Waste Number: D002, D001

14. TRANSPORT INFORMATION

DOT:
UN/ID No: UN3098
Proper Shipping Name: Oxidizing liquid, corrosive, n.o.s., (contains hydrogen peroxide and peroxyacetic acid mixture, stabilized)
Hazard Class: 5.1
Subsidiary Class: 8

Packing Group: II
Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

IMDG:

UN/ID No:	UN3098
Proper Shipping Name:	Oxidizing liquid, corrosive, n.o.s., (contains hydrogen peroxide and peroxyacetic acid mixture, stabilized)
Hazard Class:	5.1
Subsidiary hazard class	8
Packing Group:	II

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)
All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
This product contains the following listed substances:
Peroxyacetic Acid
CAS No 79-21-0

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	Yes

California Proposition 65
This product is not subject to warning requirements under California Proposition 65.

EPA Pesticide Registration Number: 63838-1-5741
EPA Statement:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:
EPA Pesticide Label:
DANGER CORROSIVE: Do not enter an enclosed area without proper respiratory protection. Causes irreversible eye damage and skin burns. May be fatal if inhaled or absorbed through the skin. Harmful if swallowed. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Wear goggles and face shield and rubber gloves when handling. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco. Remove contaminated clothing and wash before reuse.

16. OTHER INFORMATION

NFPA	**Health Hazards:** 3	**Flammability:** 1	**Instability:** 1	**Special:** OX
HMIS	**Health Hazards:** 3	**Flammability:** 1	**Physical Hazards:** 1	

Revision Date: 04-Apr-2019
Reasons for Revision: Section, 13

Disclaimer:
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

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FORCE of NATURE™

SDS & TEST RESULTS:
Force of Nature Safety Data Sheet

Healthier Cleaning Innovations LLC
7 Grassy Lane
Westford, Massachusetts 01886
David Owens 443-880-0885

1. Chemical Product and Company Identification

a. Common Name/Trade Name: Electrolyzed Water
b. Manufacturer/Supplier: Healthier Cleaning Innovations (See above)
c. Commercial Names: Hypochlorous Acid and Sodium Hydroxide mixture
d. Synonym: None
e. Chemical Name: Hypochlorous Acid, Sodium Hydroxide
f. Formula: H20; NaCl; HOCl; NaOH
g. Chemical Family: Inorganic salt solution in water – weak acid
h. CAS #: Mixture
i. RTECS: Not applicable
j. TSCA: Not applicable
k. CI#: Not applicable

2. Composition and Information on Ingredients

		Exposure Limits			
Name	CAS#	TWA (mg/m3)	STEL(mg/m3)	CEIL (mg/m3)	% by
Water (H20)					>98
Sodium Chloride	7647-14-5				<0.5

(NaCl)					
Hypochlorous Acid (HOCl)	7790-92-3				<0.05
Sodium Hydroxide (NaOH)	1310-73-2				<0.00

Toxicological Data on Ingredients: ORAL (LD50): >2000mg/kg

Note: Product Composition ranges shown are typical for health, safety, and environmental use and not intended as specifications.

3. Hazards Identification

POTENTIAL ACUTE HEALTH EFFECTS

a. Skin Contact: Those individually allergic to Chlorine should avoid direct contact as it may cause irritation with symptoms of redness, itching, and swelling.
b. Ingestion: Ingestion of large quantities (>greater than one liter or one quart) may produce gastric discomfort, nausea, vomiting, and diarrhea
c. Carcinogenicity: Active ingredients are not listed by OSHA, EPA, or any other authority as carcinogen or tumor promoter

POTENTIAL CHRONIC HEALTH EFFECTS:

a. Skin Effects: Negative
b. Eye Effects: Negative
c. Carcinogenic Effects: Negative
d. Mutagenic Effects: Negative
e. Teratogenic Effects: No known significant effects or critical hazards
f. Developmental Toxicity: No known significant effects or critical hazards

4. First Aid Measures

a. Inhalation: If dizziness occurs, immediately get into an open space – no other action is required.
b. Ingestion: Drink large quantities of water and consult with a physician.

5. Fire Fighting Measures

a. Flammability of Product: Non-flammable
b. Auto-ignition Temperature: Not applicable
c. Flash Point: Not applicable
d. Flammable Limits: Not applicable
e. Products of Combustion: Not applicable
f. Fire Hazards in Presence of Various Substances: None
g. Explosion Hazards in Presence of Various Substances: None
h. Fire Fighting Media and Instructions:
i. Choose extinguishing media suitable for surrounding materials, chemical type foam, sand, and water spray
ii. Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (bunker gear) and self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may be easily extinguished with a portable fire extinguisher, use of a SCBA may not be required. Do not allow chlorine gas to accumulate within a confined space. Insure proper ventilation to the outside.
i. Special Remarks on Fire Hazards: This product is a non-flammable substance
j. Special Remarks on Explosion Hazards: Not available

6. Accidental Release Measures

a. Small Spill: No special requirement. Wash to waste.
b. Large Spill: No special requirement. Wash to waste.

7. Handling and Storage

a. Precautions: No special handling required.
b. Storage: If containers are used, insure containers are located in a well-ventilated area.

8. Exposure Controls and Personal Protection

a. Respiratory Protection: Not necessary as long as there is adequate ventilation
b. Protective Clothing: Not required
c. Ventilation: Good room ventilation is normally adequate for a safe use of this product.

9. Physical and Chemical Properties

a. Physical State and Appearance: Liquid
b. Molecular Weight: Mixture
c. pH (1% soln/water): 5 to 7
d. Boiling Point: >100 degrees Celsius
e. Melting Point: <0 degrees Celsius
f. Critical Temperature: Not available
g. Specific Gravity: 1.0g/ml
h. Vapor Pressure: Not available
i. Vapor Density: Not available
j. Volatility: Not availability
k. Odor Threshold: Not available
l. Water/Oil Dist. Coeff.: Not available
m. Iconicity (in water); Not available
n. Dispersion Properties: See solubility of water
o. Solubility in Water: Easily soluble in cold water
p. Odor Characteristic: Slight chlorine-like
q. Taste: Not available
r. Color: Colorless

10. Stability and Reactivity

a. Stability: The product is stable under normal conditions of temperature and pressure
b. Instability Temperature: Not available
c. Conditions of Instability: Not available
d. Incompatibilities: Ammonia, Acids
e. Corrosiveness: Oxidizer
f. Special remarks on corrosiveness: None
g. Hazardous Decomposition Products: Hypochlorous acid decomposes into chlorine
h. Polymerization: Will not occur

11. Toxicological Information

a. Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.
b. Toxicity to Animals: None
c. Chronic Effects on Humans: None
i. Carcinogenic Effects: Negative
ii. Mutagenic Effects: Negative
d. Other Toxic Effects on Humans: Negative
e. Special remarks on Toxicity to Animals: None

12. Ecological Information

a. Exotoxicity: Not available
b. BOD5 and COD: Not available
c. Products of Biodegrading: Negative
d. Toxicity of the Products of Biodegrading: The products itself and its products of degradation are not toxic
e. Special Remarks on the Products of Biodegrading: Not available

13. Disposal Considerations

a. Waste Disposal: No special precautions are required for this product

14. Transport information

a. DOT Classification: No special precautions for this product
b. Identification: Not applicable
c. Special Provisions for Transport: Not applicable
d. DOT (Pictograms): Not applicable

15. Other Regulatory Information and Pictograms

a. Federal and State Regulations:
i. United States: Health and Safety Reporting List: None of the chemicals are on the Health and Safety Reporting List
ii. Section 12b: None of the chemicals are listed under TSCA Section 12b
iii. TSCA Significant New Use Rule: None of the chemicals in this material have an SNUR under TSCA
iv. Clean Air Act: This material does not contain any hazardous air pollutants
v. OSHA: None of the chemicals in this product are considered highly hazardous by OSHA
vi. Canada: This product does not contain any known ingredient(s) on the “Ingredient Disclosure List”
vii. European Community Regulatory: All intentional ingredients are listed on the European’s EINECS Inventory
viii. State Regulations: Not available
ix. Local Regulations: Not available

b. California Proposition 65 Warnings: This product does not contain any chemicals known to the state of California that cause cancer, birth defects, or any reproductive harm.
c. Other Regulations: OSHA – Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). To the best of our knowledge, this Safety Data Sheet conforms to the requirements of US OSHA 29 CFR 1910.1200.91/155/EEC and Canadian Hazardous Products Act.
d. Other Classifications:
i. WHMIS (Canada) – Not available
ii. DSCL (EEC) – Not available
e. HMIS (U.S.A.) –
f. WHMIS (Canada): This product does not contain any known ingredient(s) on the "Ingredient Disclosure List".
g. DSCL (Europe) – Pictograms: Not available
h. TDG (Canada) – Pictograms: Not available
i. ADR (Europe) – Pictograms: Not available
j. Protective Equipment: None

16. Other Information

a. MSDS Code: Not available
b. References: Not available
c. Other special considerations: Not available
d. Preparation Date: 7-28-16
Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to reliable, HCI, LLC assumes no responsibility for the completeness or accuracy of the information contained herein.

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SAFETY DATA SHEET

Version 6.4
Revision Date 01/15/2020
Print Date 05/30/2020

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

1.1 Product identifiers

Product name : L(+)-lactic acid free acid

Product Number : L1750
Brand : Sigma
CAS-No. : 79-33-4

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin irritation (Category 2), H315
Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statement(s)
P264 Wash skin thoroughly after handling.

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P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : (S)-2-Hydroxypropionic acid
Sarcolactic acid

Formula : $C_3H_6O_3$
Molecular weight : 90.08 g/mol
CAS-No. : 79-33-4
EC-No. : 201-196-2

Component	Classification	Concentration
L-(+)-Lactic acid		
	Skin Irrit. 2; Eye Dam. 1; H315, H318	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

hygroscopic
Storage class (TRGS 510): 11: Combustible Solids

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7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection,

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use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	1.2
e)	Melting point/freezing point	Melting point/range: 53 °C (127 °F)
f)	Initial boiling point and boiling range	No data available
g)	Flash point	110.00 °C (230.00 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.200 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

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SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Avoid moisture.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - 3,543 mg/kg
LC50 Inhalation - Rat - male and female - 4 h - > 7.94 mg/l
(OECD Test Guideline 403)
LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg
No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h

Serious eye damage/eye irritation
Eyes - In vitro study
Result: Irreversible effects on the eye
Remarks: (ECHA)

Respiratory or skin sensitisation
Buehler Test - Guinea pig
Result: Does not cause skin sensitisation.

Germ cell mutagenicity
Hamster
ovary
Cytogenetic analysis

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is

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on OSHA's list of regulated carcinogens.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: OD2800000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity
No data available

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 20 d Result: 67 % - Readily biodegradable. Remarks: The 10 day time window criterion is not fulfilled.

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

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SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

SECTION 15: Regulatory information

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

L-(+)-Lactic acid	CAS-No. 79-33-4	Revision Date

L-(+)-Lactic acid	CAS-No. 79-33-4	Revision Date

New Jersey Right To Know Components

L-(+)-Lactic acid	CAS-No. 79-33-4	Revision Date

SECTION 16: Other information

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the

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Version: 6.4 Revision Date: 01/15/2020 Print Date: 05/30/2020

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SAFETY DATA SHEET

Version 6.1
Revision Date 01/13/2020
Print Date 06/02/2020

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

1.1 Product identifiers

Product name : Caprylic acid

Product Number : C0426000
Brand : Sigma-Aldrich
CAS-No. : 124-07-2

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin corrosion (Category 1C), H314
Serious eye damage (Category 1), H318
Short-term (acute) aquatic hazard (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H314 Causes severe skin burns and eye damage.
H402 Harmful to aquatic life.

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Precautionary statement(s)	
P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula : CH3(CH2)6COOH
Molecular weight : 144.21 g/mol
CAS-No. : 124-07-2

Component	Classification	Concentration
Octanoic acid		
	Skin Corr. 1C; Eye Dam. 1; Aquatic Acute 3; H314, H318, H402	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

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In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid inhalation of vapour or mist.
For precautions see section 2.2.

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7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.
Hazardous components without workplace control parameters

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: clear, viscous liquid

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		Colour: light yellow
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	3.5 at 0.5 g/l
e)	Melting point/freezing point	Melting point/range: 16.0 - 16.5 °C (60.8 - 61.7 °F)
f)	Initial boiling point and boiling range	237 °C 459 °F at 1,013 hPa
g)	Flash point	> 110 °C (> 230 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	13 hPa at 124 °C (255 °F) 1 hPa at 78 °C(172 °F)
l)	Vapour density	4.98 - (Air = 1.0)
m)	Relative density	0.91 g/cm3 at 20 °C (68 °F)
n)	Water solubility	0.68 g/l at 20 °C (68 °F)
o)	Partition coefficient: n-octanol/water	log Pow: 3.05
p)	Auto-ignition temperature	> 300 °C (> 572 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	28.6 - 28.7 mN/m at 20 °C (68 °F)
Relative vapour density	4.98 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

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10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Bases, Oxidizing agents, Reducing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 401)
Inhalation: No data available
LD50 Dermal - Rabbit - > 5,000 mg/kg
Remarks: (RTECS)
No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Corrosive after 1 to 4 hours of exposure - 4 h
(OECD Test Guideline 404)
(Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitisation

Germ cell mutagenicity
Chromosome aberration test in vitro
Human lymphocytes
Result: negative
Chromosome aberration test in vitro
Chinese hamster lung cells
Result: negative
Ames test
Escherichia coli/Salmonella typhimurium
Result: negative
Chromosome aberration test in vitro
Chinese hamster ovary cells
Result: Positive results were obtained in some in vitro tests.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 28 Days - No observed adverse effect level - 150 mg/kg
RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	static test LC50 - Lepomis macrochirus (Bluegill sunfish) - 22 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 21 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 43.73 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	static test EC10 - Pseudomonas putida - 912 mg/l - 18 h (ISO 10712)

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 30 d Result: > 72 % - Readily biodegradable. (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

Bioaccumulation	Danio rerio (zebra fish) - 28 d at 21.5 °C - 3.6 mg/l(Octanoic acid) Bioconcentration factor (BCF): 236 - 282

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12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

DOT (US)
UN number: 3265 Class: 8 Packing group: III
Proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Octanoic acid)
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 3265 Class: 8 Packing group: III EMS-No: F-A, S-B
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Octanoic acid)

IATA
UN number: 3265 Class: 8 Packing group: III
Proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Octanoic acid)

SECTION 15: Regulatory information

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Octanoic acid	CAS-No. 124-07-2	Revision Date

Octanoic acid	CAS-No. 124-07-2	Revision Date

New Jersey Right To Know Components

Octanoic acid	CAS-No. 124-07-2	Revision Date

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Further information
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Version: 6.1 Revision Date: 01/13/2020 Print Date: 06/02/2020

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SAFETY DATA SHEET

Version 6.2
Revision Date 04/28/2020
Print Date 05/29/2020

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

1.1 Product identifiers

Product name : Sodium dichloroisocyanurate

Product Number : 218928
Brand : Aldrich
Index-No. : 613-030-00-X
CAS-No. : 2893-78-9

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Oxidizing solids (Category 2), H272
Acute toxicity, Oral (Category 4), H302
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

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Hazard statement(s)

H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat.
P220	Keep/Store away from clothing/ combustible materials.
P221	Take any precaution to avoid mixing with combustibles.
P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Contact with acids liberates toxic gas.
Lachrymator., Sternutator.

SECTION 3: Composition/information on ingredients

3.1 Substances

Molecular weight	:	219.95 g/mol
CAS-No.	:	2893-78-9
EC-No.	:	220-767-7
Index-No.	:	613-030-00-X

Component	Classification	Concentration
Dichloroisocyanuric acid sodium salt		
	Ox. Sol. 2; Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H302, H314, H318, H400, H410	<= 100 %

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	M-Factor - Aquatic Acute: 1	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas, Sodium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.Keep away from heat and sources of ignition.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage. Do not store near acids.

Moisture sensitive. Keep in a dry place.
Storage class (TRGS 510): 4.1A: Other explosive hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact

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with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: white
b)	Odour	Chlorine
c)	Odour Threshold	No data available
d)	pH	6.2 - 6.8 at 10 g/l at 25 °C (77 °F)
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	()No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	The product is not flammable. - Flammability (solids)
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	< 0.000 hPa at 20 °C (68 °F)
l)	Vapour density	No data available
m)	Relative density	1.97 g/cm3 at 25 °C (77 °F)
n)	Water solubility	236.8 g/l at 25 °C (77 °F) - US-EPA - completely soluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition	240 °C (464 °F) -

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	temperature	
r)	Viscosity	No data available
s)	Explosive properties	May mass explode in fire.
t)	Oxidizing properties	The substance or mixture is classified as oxidizing with the category 2.

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong bases, Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas, Sodium oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 1,823 mg/kg
(US-EPA)
Remarks: (in analogy to similar products)
LC50 Inhalation - Rat - male and female - 4 h - 0.27 - 1.17 mg/l
(OECD Test Guideline 403)
LD50 Dermal - Rat - male and female - > 5,000 mg/kg
(US-EPA)
No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Causes burns. - 24 h
(US-EPA)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes serious eye damage.

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(US-EPA)

Respiratory or skin sensitisation
Maximisation Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Ames test
Escherichia coli/Salmonella typhimurium
Result: negative
sister chromatid exchange assay
Chinese hamster ovary cells
Result: negative
In vitro mammalian cell gene mutation test
mouse lymphoma cells
Result: negative
OECD Test Guideline 475
Rat - male - Bone marrow
Result: negative

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity - Mouse - female - Oral - 104 Weeks - No observed adverse effect level - 1,523 mg/kg

Repeated dose toxicity - Rat - male and female - inhalation (dust/mist/fume) - 4 Weeks (in analogy to similar products) (ECHA)
RTECS: XZ1900000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	static test LC50 - Menidia beryllina (Inland silverside) - 8,000 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 1,000 mg/l - 48 h Remarks: (ECHA)
Toxicity to algae	static test ErC50 - Skeletonema costatum - > 100 mg/l - 72 h (ISO 10253)
Toxicity to bacteria	EC50 - activated sludge - > 4,500 mg/l - 3 h (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability: aerobic - Exposure time 8 h
Result: 100 % - Readily biodegradable.
Remarks: (ECHA)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

UN number: 2465 Class: 5.1 Packing group: II
Proper shipping name: Dichloroisocyanuric acid salts

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Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 2465 Class: 5.1 Packing group: II EMS-No: F-A, S-Q
Proper shipping name: DICHLOROISOCYANURIC ACID, SALTS
Marine pollutant : yes

IATA
UN number: 2465 Class: 5.1 Packing group: II
Proper shipping name: Dichloroisocyanuric acid, salts

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dichloroisocyanuric acid sodium salt	2893-78-9	2010-08-02

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dichloroisocyanuric acid sodium salt	2893-78-9	2010-08-02

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dichloroisocyanuric acid sodium salt	2893-78-9	2010-08-02

SECTION 16: Other information

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See

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Version: 6.2 Revision Date: 04/28/2020 Print Date: 05/29/2020

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BRUTAB 6S

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 06/13/2019 Revision date: 06/13/2019 Version: 9.0

SECTION 1: Identification

Identification

Product form	:	Mixture
Product name	:	BRUTAB 6S
Product code	:	161037 / 161021 / 161034

Recommended use and restrictions on use

Recommended use	:	Disinfectant

Supplier

Brulin & Company, Inc.

P.O. Box 270

Indianapolis, IN 46206 - USA

T 1.317.923.3211 - F 1.317.925.4596

Emergency telephone number

Emergency number	:	CHEMTREC 1.800.424.9300 or CHEMTREC International: 1.703.527.3887

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) Category 4	Harmful if swallowed
Serious eye damage/eye irritation Category 2A	Causes serious eye irritation

GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)

Signal word (GHS US):	Warning
Hazard statements (GHS US):	Harmful if swallowed Causes serious eye irritation

Precautionary statements (GHS US)

Prevention:	Use only in a well-ventilated area. Avoid breathing dust. Wear eye protection, protective gloves. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Protect from moisture.
Response:	IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
Storage:	Store in a well-ventilated place. Keep container tightly closed.
Disposal:	Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

Other hazards which do not result in classification

Other hazards not contributing to the classification : Contact with acids liberates toxic gas.

Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

Name	Product identifier	Weight (%)
troclosene sodium	(CAS-No.) 2893-78-9	40 - 50
adipic acid	(CAS-No.) 124-04-9	30 - 40
sodium carbonate	(CAS-No.) 497-19-8	10 - 20

SECTION 4: First-aid measures

Description of first aid measures

First-aid measures general : Call a poison center/doctor/physician if you feel unwell. Get medical advice/attention if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse eyes with water as a precaution. Rinse cautiously with water for ɛral minutes. Remove contact lenses, if present and easy to do. Continue ng. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

Most important symptoms and effects (acute and delayed)

Symptoms/effects after eye contact : Eye irritation.

Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

Specific hazards arising from the chemical

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Environmental precautions

Avoid release to the environment.

Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product.

Other information : Dispose of materials or solid residues at an authorized site.

Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

Control parameters

BRUTAB 6S		
ACGIH	Local name	Adipic acid
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
ACGIH	Remark (ACGIH)	TLV® Basis: URT irr; ANS impair
ACGIH	Regulatory reference	ACGIH 2019

troclosene sodium (2893-78-9)
Not applicable

adipic acid (124-04-9)		
ACGIH	Local name	Adipic acid
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
ACGIH	Remark (ACGIH)	TLV® Basis: URT irr; ANS impair
ACGIH	Regulatory reference	ACGIH 2019

sodium carbonate (497-19-8)
Not applicable

Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Other information:

Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Tablets.
	:	white
	:	slight chlorine-like
Odor threshold	:	No data available
pH	:	No data available
pH solution	:	5.5 - 6.5 when diluted
Melting point	:	No data available
Freezing point	:	Not applicable
Boiling point	:	not applicable
Flash point	:	not applicable
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	Water: 100 %
Log Pow	:	No data available
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	Not applicable
Explosive properties	:	No data available
Oxidizing properties	:	No data available
VOC content	:	0 % Less Exempts and Water

SECTION 10: Stability and reactivity

Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

Conditions to avoid

None under recommended storage and handling conditions (see section 7).

Incompatible materials

No additional information available

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

ATE US (oral)	1823 mg/kg body weight
ATE US (dermal)	>2,000 mg/kg body weight
ATE US (gases)	>20,000 ppm/4h
ATE US (vapors)	>20 mg/l/4h
ATE US (dust, mist)	>5 mg/l/4h

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

BRUTAB 6S	
IARC group	Not listed
National Toxicity Program (NTP) Status	Not listed

Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : Not classified
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Viscosity, kinematic : No data available
Symptoms/effects after eye contact : Eye irritation.

SECTION 12: Ecological information

Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Persistence and degradability

troclosene sodium (2893-78-9)	
Persistence and degradability	Readily biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.

adipic acid (124-04-9)	
Persistence and degradability	Readily biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.598 g O_2/g substance
Chemical oxygen demand (COD)	1.38 g O_2/g substance
ThOD	1.423 g O_2/g substance

sodium carbonate (497-19-8)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable (inorganic)
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

Bioaccumulative potential

troclosene sodium (2893-78-9)	
Log Pow	-0.0556 (QSAR, KOWWIN)
Bioaccumulative potential	Not bioaccumulative.

adipic acid (124-04-9)	
Log Pow	0.093 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

sodium carbonate (497-19-8)	
Log Pow	-6.19 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

Mobility in soil

troclosene sodium (2893-78-9)	
Log Koc	1.7 (log Koc, Experimental value)
Ecology - soil	Highly mobile in soil.

adipic acid (124-04-9)	
Ecology - soil	No (test)data on mobility of the substance available.

sodium carbonate (497-19-8)	
Ecology - soil	Low potential for adsorption in soil.

Other adverse effects

No additional information available

SECTION 13: Disposal considerations

Disposal methods

Waste treatment methods : Dispose of in accordance with relevant local regulations.

SECTION 14: Transport information

US - DOT
Not regulated for transport

International shipping – IMDG
Not regulated for transport

International – IATA
Not regulated for transport

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

adipic acid (124-04-9)	
CERCLA RQ	5000 lb

15.2. International regulations

CANADA

troclosene sodium (2893-78-9)
Listed on the Canadian DSL (Domestic Substances List)

adipic acid (124-04-9)
Listed on the Canadian DSL (Domestic Substances List)

sodium carbonate (497-19-8)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
No additional information available

sodium carbonate (497-19-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

sodium carbonate (497-19-8)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on the Korean ECL (Existing Chemicals List) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
troclosene sodium(2893-78-9)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
adipic acid(124-04-9)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Version	: 9.0
Date of issue	: 06/13/2019
Revision date	: 06/13/2019

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET FOR OZONE

1: PRODUCT IDENTIFICATION

Product Name: Ozone

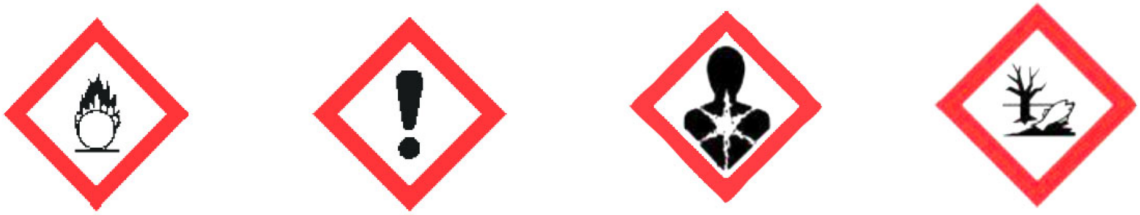
Common Names/Synonyms: Triatomic Oxygen, O_3

Ozone Generator Manufacturer/Supplier:

ClearWater Tech, LLC.
850 Capitolio Way
San Luis Obispo, CA 93401
EMERGENCY CONTACT: (805) 546-2333
Website: www.cwtozone.com
email: Sales@cwtozone.com

Product Use: Oxidation of organic compounds, odor abatement or sanitation of surfaces utilizing an on site ozone generator to produce gaseous ozone.

2. HAZARD IDENTIFICATION



GHS Classifications

Physical Hazards	Health Hazards	Environmental Hazards
Oxidizing Gas	Skin Irritation-Category 3	Acute Aquatic Toxicity-Category 1
	Eye Irritation-Category 2B	
	Respiratory Systemic Toxicity-Category 1 (Acute & Repeated Exposures)	

WHMIS Classifications:

D1A	Acute lethality-Very toxic, immediately	C	Oxidizing
D2A	Chronic Toxicity-Very Toxic	F	Dangerously Reactive
D2B	Mutagenicity-Toxic		

3. COMPOSITION

Chemical name:	Ozone
Common names:	Triatomic oxygen
Chemical formula:	O_3
CAS Registry Number:	10028-15-6

4. FIRST AID MEASURES

Route of Entry		Symptoms	First Aid
Skin Contact	Yes	Irritation	Rinse with water
Skin Absorption	No	NA	NA
Eye Contact	Yes	Irritation	Rinse with water
Ingestion	No	NA	NA
Inhalation	Yes	Headache, cough, dry throat, heavy chest, shortness of breath	Remove to fresh air, provide oxygen therapy as needed

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing agents suitable for surrounding fire

Special Fire Fighting Procedures: Wear self-contained breathing apparatus

6. ACCIDENTAL RELEASE MEASURES

Turn off ozone generator and ventilate area. Evacuate the area.

7. HANDLING AND STORAGE

Use ozone resistant tubing from ozone generator to point of use.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

OSHA PEL	ACGIH TLV	NIOSH
0.1 PPM	0.1 PPM	0.1 PPM

Respiratory Protection: Not required for normal use

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	-169 F	Specific Gravity:	NA
Vapor Pressure (mm Hg):	760	Freezing Point:	NA
Vapor Density (AIR = 1):	1.6	Evaporation Rate:	N/A
Solubility in Water:	570 mg/l @ 20 C		
Appearance and Odor: Clear at low concentrations, blue at higher concentrations. Aseptic odor.			

10. STABILITY AND REACTIVITY

Ozone is highly unstable and highly reactive. Avoid contact with oxidizable substances such as natural rubber. Ozone will will react and decompose under normal ambient temperatures.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: inhalation, eyes, skin exposure.	
Effects of Acute Exposure: Discomfort, including headache, coughing, dry throat, shortness of breath, pulmonary edema; higher levels of exposure	
Effects of Chronic Exposure: Similar to acute exposure effects, with possible development of chronic breathing disorders, including asthma.	
LC50: mice, 12.6 ppm for 3 hours; hamsters, 35.5 ppm for 3 hours	
Irritancy of Ozone	YES
Sensitization to Ozone	NO
Carcinogenicity (NTP, IARC, OSHA)	NO
Reproductive Toxicity, Teratogenicity, Mutagenicity	Not Proven
Toxicologically Synergistic Products	Increased susceptibility to allergens, pathogens, irritants

12. ECOLOGICAL INFORMATION

The immediate surrounding area may be adversely affected by an ozone release, particularly plant life. Discharge of ozone in water solution may be harmful to aquatic life. Due to natural decomposition, bioaccumulation will not occur, and the area affected will be limited.

13. DISPOSAL CONSIDERATIONS

Off gassing of ozone should be through an ozone destruct unit that breaks ozone down to oxygen before release into the atmosphere.

14. TRANSPORT INFORMATION

Not Applicable. Ozone is generated on site.

15. REGULATORY INFORMATION

SARA Title III Section 302 EHS TPQ: 100 lbs.
SARA Title III Section 304, EHS RQ: 100 lbs.
SARA Title III Section 313: > 10,000 lbs. used/year.
Source: EPA List of Lists

16. OTHER INFORMATION

Half-life of ozone in water at 20°C = 20 min; in dry still air at 24°C = 25 hr; decreases significantly with increase in humidity, presence of contaminants, air movement, and/or increase in temperature.

Revision Date: 2/26/2016