SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier
Product Name Citric Acid/Surfactant Solution

Other means of identification
Product Code(s)
2347003

Safety data sheet number M00513

UN/ID no UN3265

Component of Kits or Sets 001-H00283.88; 2347003Q; 2824400; 2824400K; 4562700K; 6000000; 6000000K; 6000001; 6000001K; 6000001S-5024; 6000002

Recommended use of the chemical and restrictions on use
Recommended Use Masking agent/surfactant for silica analyzer.
Uses advised against None.
Restrictions on use None.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company
P.O.Box 389 Loveland, CO 80539 USA
(970) 669-3050

Emergency telephone number
(303) 623-5716 - 24 Hour Service (515)232-2533 - 8am - 4pm CST

Product Information
Chemical Name Not applicable
Formula Not applicable
CAS No Not applicable
Alternate CAS Number Not applicable
NIOSH (RTECS) Number None reported

2. HAZARDS IDENTIFICATION

Classification

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

Corrosive to metals	Category 1
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word - Danger

Hazard statements
H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P234 - Keep only in original container
P310 - Immediately call a POISON CENTER or doctor/physician
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P363 - Wash contaminated clothing before reuse
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P390 - Absorb spillage to prevent material damage
P405 - Store locked up
P406 - Store in corrosive resistant stainless steel container with a resistant inliner
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Information
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Chemical Family Mixture.

Percent ranges are used where confidential product information is applicable.

Chemical Name	CAS No	Percent Range	HMRIC #
Citric acid	77-92-9	10 - 30	-
Sodium lauryl sulfate	151-21-3	0.1 - 1	-
Propanoic acid	79-09-4	0.1 - 1	-

4. FIRST AID MEASURES

Description of first aid measures

General advice In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

Inhalation IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a physician immediately.

Ingestion IF SWALLOWED: Rinse Mouth. Do NOT induce vomiting. Call a physician immediately.

Self-protection of the first aider Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11: TOXICOLOGICAL INFORMATION.

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.

Flammable properties
Not flammable.

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.

Hazardous combustion products This material will not burn.

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

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

EC Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special

Instructions for disposal assistance.

WHMIS Notice Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Remove all sources of ignition. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Avoid release to the environment. 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. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Take necessary precautions in observance of pertinent physical hazards. Neutralize spill if necessary. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local, state and federal regulations or laws.

Emergency Response Guide Number 153

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. Do not breathe dust/fume/gas/mist/vapors/spray.

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 in properly labeled containers. Keep/store only in original container.

Flammability class Not applicable

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.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Propanoic acid 0.1 - 1	TWA: 10 ppm	(vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m^3	TWA: 10 ppm TWA: 30 mg/m^3 STEL: 15 ppm STEL: 45 mg/m^3

Chemical Name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick OEL	New Foundland & Labrador OEL

Propanoic acid 0.1 - 1	TWA: 10 ppm TWA: 30 mg/m³	TWA: 10 ppm	TWA: 10 ppm	TWA: 10 ppm TWA: 30 mg/m³	TWA: 10 ppm

Chemical Name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
Propanoic acid 0.1 - 1	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm	TWA: 10 ppm

Chemical Name	Quebec OEL	Saskatchewan OEL	Yukon OEL
Propanoic acid 0.1 - 1	TWA: 10 ppm TWA: 30 mg/m³	TWA: 10 ppm STEL: 15 ppm	NDF

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

Legend See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Avoid contact with eyes. Wear tight sealing safety goggles and/or face protection shield.

Skin and body protection Gloves made of plastic or rubber. Rubber boots. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.

Respiratory protection Do not breathe gas/fumes/vapor/spray. If no local exhaust use approved fume hood and/or respirator. In case of inadequate ventilation wear respiratory protection.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended.

Environmental exposure controls
Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid

Gas Under Pressure Not classified according to GHS criteria

Appearance aqueous solution **Color** colorless

Odor None **Odor threshold** No data available

Property	Values	Remarks • Method
Molecular weight	No data available	

pH	1.4	
Melting point/freezing point	-2 °C / 28 °F	
Boiling point / boiling range	99 °C / 210 °F	
Evaporation rate	0.62 (water = 1)	
Vapor pressure	23.177 mm Hg / 3.09 kPa at 25 °C / 77 °F	Estimation based on theoretical calculation
Vapor density (air = 1)	0.62 (air = 1)	
Specific gravity (water = 1 / air = 1)	1.0802	
Partition Coefficient (n-octanol/water)	Not applicable	
Soil Organic Carbon-Water Partition Coefficient	Not applicable	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	No data available	
Kinematic viscosity	No data available	

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

Other Information

Metal Corrosivity	Classified as corrosive to metal according to GHS criteria
GHS Metal Corrosivity Classification	Category 1, H290
Steel Corrosion Rate	7.82 mm/yr / 0.31 in/yr
Aluminum Corrosion Rate	0.15 mm/yr / 0.01 in/yr
Bulk density	Not applicable
Explosive properties	Not classified according to GHS criteria.
Explosion data	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Flammable properties	Not flammable.

Flammability Limit in Air

Upper flammability limit:	No data available
Lower flammability limit:	No data available
Flash point	No data available
Method	No information available
Oxidizing properties	Not classified according to GHS criteria.
Reactivity propeties	Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

10. STABILITY AND REACTIVITY

Reactivity propeties
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria

Chemical stability
Stable under recommended storage conditions.

Special dangers of the product
None reported

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid
Freezing. 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.

Explosive properties
Not classified according to GHS criteria.

Upper explosion limit No data available

Lower explosion limit No data available

Autoignition temperature
No data available

Sensitivity to Static Discharge
None reported

Sensitivity to Mechanical Impact
None reported

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information	Corrosive to skin. Corrosive to eyes.
Inhalation	Causes burns.
Eye contact	Causes burns. Corrosive to eyes.
Skin contact	Causes burns.
Ingestion	Causes burns.
Aggravated Medical Conditions	Eye disorders. Skin disorders. Respiratory disorders.
Toxicologically synergistic products	None known.
Toxicokinetics, metabolism and distribution	See ingredients information below.

Product Acute Toxicity Data

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Unknown acute toxicity
1.8451% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	16,878.00 mg/kg
ATEmix (dermal)	9,808.00 mg/kg

Ingredient Acute Toxicity Data

Oral Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Citric acid (10 - 30) CAS#: 77-92-9	Rat LD_{50}	3000 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	Rat LD_{50}	>= 977 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Propanoic acid (0.1 - 1) CAS#: 79-09-4	Rat LD_{50}	2600 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)

Dermal Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Citric acid (10 - 30) CAS#: 77-92-9	Rat LD_{50}	> 2000 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	Rabbit LD_{50}	300 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)

Propanoic acid (0.1 - 1) CAS#: 79-09-4	Rabbit LD_{50}	500 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)

Inhalation (Dust/Mist) Exposure Route Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	Rat LC_{50}	> 62.4 mg/L	4 hours	None reported	Vendor SDS
Propanoic acid (0.1 - 1) CAS#: 79-09-4	Rat LC_{50}	> 4.9 mg/L	4 hours	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Citric acid (10 - 30) CAS#: 77-92-9	Rat TD_{Lo}	0.180 mg/L	None reported	**Lungs, Thorax, or Respiration** Other changes **Liver** Impaired liver function tests **Biochemical** Enzyme inhibition, induction, or change in blood or tissue levels (dehydrogenases)	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Product Skin Corrosion/Irritation Data
No data available.

Ingredient Skin Corrosion/Irritation Data

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	Standard Draize Test	Human	25 mg	24 hours	Mild skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Propanoic acid (0.1 - 1) CAS#: 79-09-4	Open Irritation Test	Rabbit	495 mg	None reported	Corrosive to skin	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	**Test method**	**Species**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Citric acid (10 - 30) CAS#: 77-92-9	Standard Draize Test	Rabbit	500 mg	24 hours	Mild skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	Standard Draize Test	Human	250 mg	24 hours	Mild skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

Product Serious Eye Damage/Eye Irritation Data
No data available.

Ingredient Eye Damage/Eye Irritation Data

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	Standard Draize Test	Rabbit	10 mg	None reported	Eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Propanoic acid (0.1 - 1) CAS#: 79-09-4	Standard Draize Test	Rabbit	0.99 mg	None reported	Corrosive to eyes	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	**Test method**	**Species**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Citric acid (10 - 30) CAS#: 77-92-9	Standard Draize Test	Rabbit	0.750 mg	24 hours	Eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

Sensitization Information

Product Sensitization Data

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

Ingredient Sensitization Data

Skin Sensitization Exposure Route Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Test method	Species	Results	Key literature references and sources for data
Propanoic acid (0.1 - 1) CAS#: 79-09-4	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID (The International Uniform Chemical Information Database)

Respiratory Sensitization Exposure Route No data available.

Chronic Toxicity Information

Product Repeat Dose Toxicity Data

Oral Exposure Route No data available.

Dermal Exposure Route No data available.

Inhalation (Dust/Mist) Exposure Route No data available.

Inhalation (Vapor) Exposure Route No data available.

Inhalation (Gas) Exposure Route No data available.

Ingredient Repeat Dose Toxicity Data

Oral Exposure Route Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Citric acid (10 - 30) CAS#: 77-92-9	Rat TD_{Lo}	930 mg/kg	15 days	**Biochemical** Enzyme inhibition, induction, or change in blood or tissue levels (dehydrogenases) **Blood** Changes in serum composition (e.g. TP, bilirubin, cholesterol)	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Citric acid (10 - 30) CAS#: 77-92-9	Rat TD_{Lo}	0.180 mg/L	None reported	**Lungs, Thorax, or Respiration** Other changes **Liver** Impaired liver function tests **Biochemical** Enzyme inhibition, induction, or change in blood or tissue levels (dehydrogenases)	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Citric acid	77-92-9	-	-	-	-
Sodium lauryl sulfate	151-21-3	-	-	-	-
Propanoic acid	79-09-4	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present

Product Carcinogenicity Data No data available

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Carcinogenicity Data

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Product Germ Cell Mutagenicity *invitro* **Data**
No data available.

Ingredient Germ Cell Mutagenicity *invitro* **Data** Toxicological data for ingredients is not indicative of likely harm.

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	DNA inhibition	Human lymphocyte	100 mg/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Propanoic acid (0.1 - 1) CAS#: 79-09-4	Mutation in microorganisms	*Salmonella typhimurium*	6.667 mg/plate	None reported	Negative test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical Name	**Test**	**Cell Strain**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	DNA damage	Rat liver	0.243 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Germ Cell Mutagenicity *invivo* **Data**

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Reproductive Toxicity Data

Oral Exposure Route No data available

Dermal Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium lauryl sulfate (0.1 - 1)	Mouse TD_{Lo}	480 mg/kg	7 days	**Effects on Embryo or Fetus** Fetotoxicity (except death e.g.	RTECS (Registry of Toxic Effects of Chemical

CAS#: 151-21-3				stunted fetus)	Substances)

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity Based on the classification principles, not classified as hazardous to the environment.

Product Ecological Data

Aquatic toxicity

Fish No data available

Crustacea No data available

Algae No data available

Terrestrial toxicity

Soil No data available

Vertebrates No data available

Invertebrates No data available

Ingredient Ecological Data

Aquatic toxicity

Fish

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Citric acid (10 - 30) CAS#: 77-92-9	96 hours	*Lepomis macrochirus*	LC_{50}	1516 mg/L	IUCLID (The International Uniform Chemical Information Database)
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	96 hours	*Brachydanio rerio*	LC_{50}	7.97 mg/L	IUCLID (The International Uniform Chemical Information Database)
Propanoic acid (0.1 - 1) CAS#: 79-09-4	96 hours	*Oncorhynchus mykiss*	LC_{50}	51.0 mg/L	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Citric acid (10 - 30) CAS#: 77-92-9	48 hours	*Leuciscus idus Melanotus*	LC_{50}	440 mg/L	IUCLID (The International Uniform Chemical Information Database)
Propanoic acid (0.1 - 1) CAS#: 79-09-4	96 hours	*Pimephales promelas*	LC_{50}	> 1000 mg/L	IUCLID (The International Uniform Chemical Information Database)

Crustacea

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium lauryl sulfate (0.1 - 1)	48 Hours	*Artemia salina*	LC_{50}	3.15 mg/L	IUCLID (The International Uniform Chemical Information

CAS#: 151-21-3					Database)
Propanoic acid (0.1 - 1) CAS#: 79-09-4	48 Hours	*Daphnia magna*	EC_{50}	45.8 mg/L	IUCLID (The International Uniform Chemical Information Database)

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Citric acid (10 - 30) CAS#: 77-92-9	72 hours	*Daphina magna*	EC_{50}	120 mg/L	IUCLID (The International Uniform Chemical Information Database)

Algae

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	72 Hours	*Nitzschia sp.*	EC_{50}	20 mg/L	IUCLID (The International Uniform Chemical Information Database)

Terrestrial toxicity

Soil No data available

Vertebrates No data available

Invertebrates No data available

Other Information

Persistence and degradability
None known.

Product Biodegradability Data
If available, see ingredient data below.

Ingredient Biodegradability Data
Test data reported below

Chemical Name	Test method	Biodegradation	Exposure time	Results
Citric acid (10 - 30) CAS#: 77-92-9	None reported	None reported	None reported	Readily biodegradable

Bioaccumulation
If available, see ingredient data below.

Product Bioaccumulation Data If available, see ingredient data below.

Ingredient Bioaccumulation Data

Chemical Name	Test method	Exposure time	Species	Bioconcentration factor (BCF)	Results
Citric acid (10 - 30) CAS#: 77-92-9	None reported	None reported	None reported	None reported	Does not have the potential to bioaccumulate

Additional information

Product Information

Partition Coefficient (n-octanol/water) Not applicable

Ingredient Information

Chemical Name	Partition Coefficient (n-octanol/water)	Method
Citric acid (10 - 30) CAS#: 77-92-9	log K_{ow} = -1.64	No information available
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	log K_{ow} = 1.60	No information available
Propanoic acid (0.1 - 1) CAS#: 79-09-4	log K_{ow} = 0.33	No information available

Mobility
Mobility in soil: High mobility. If available, see ingredient data below.

Product Information

Soil Organic Carbon-Water Partition Coefficient Not applicable

Ingredient Information

Chemical Name	Soil Organic Carbon-Water Partition Coefficient	Method
Citric acid (10 - 30) CAS#: 77-92-9	log K_{oc} = -1.16	No information available
Sodium lauryl sulfate (0.1 - 1) CAS#: 151-21-3	log K_{oc} = 1.97	Estimation through KOCWIN v2.00 part of the Estimation Programs Interface (EPI) Suite™
Propanoic acid (0.1 - 1) CAS#: 79-09-4	log K_{oc} = 0.34	Estimation through KOCWIN v2.00 part of the Estimation Programs Interface (EPI) Suite™

Additional information

Water solubility

Product Information

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

Ingredient Information

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
Citric acid (10 - 30) CAS#: 77-92-9	Completely soluble	750000 mg/L	25 °C	77 °F
Sodium lauryl sulfate (0.1 - 1)	Soluble	> 1000 mg/L	25 °C	77 °F

CAS#: 151-21-3				
Propanoic acid (0.1 - 1) CAS#: 79-09-4	Soluble	> 1000 mg/L	25 °C	77 °F

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

Special instructions for disposal Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Flush system with plenty of water.

14. TRANSPORT INFORMATION

DOT

UN/ID no	UN3265
Proper shipping name	Corrosive liquid, acidic, organic, n.o.s
DOT Technical Name	(Citric Acid Solution)
Hazard Class	8
Packing Group	III
Emergency Response Guide Number	153

TDG

UN/ID no	UN3265
Proper shipping name	Corrosive liquid, acidic, organic, n.o.s
TDG Technical Name	(Citric Acid Solution)
Hazard Class	8
Packing Group	III

IATA

UN/ID no	UN3265
Proper shipping name	Corrosive liquid, acidic, organic, n.o.s
IATA Technical Name	(Citric Acid Solution)
Hazard Class	8
Packing Group	III
ERG Code	153

IMDG

UN/ID no	UN3265
Proper shipping name	Corrosive liquid, acidic, organic, n.o.s
IMDG Technical Name	(Citric Acid Solution)
Hazard Class	8
Packing Group	III

Additional information
There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.
If the item is part of a reagent set or kit the classification would change to the following:
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.
If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

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
Propanoic acid 79-09-4	5000 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)
Propanoic acid 79-09-4	5000 lb	-	RQ 5000 lb final RQ RQ 2270 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
Propanoic acid 79-09-4	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA and HMIS Classifications

NFPA	**Health hazards** - 3	**Flammability** - 0	**Instability** - 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** - 3	**Flammability** - 0	**Physical hazards** - 0	**Personal protection** - X - See section 8 for more information

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH	*Immediately Dangerous to Life or Health*
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
NDF	*no data*

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant

M mutagen

Prepared By	Hach Product Compliance Department
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Revision Date	10-Aug-2016
Revision Note	None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

End of Safety Data Sheet