



**Be Right™**

# SAFETY DATA SHEET

Issue Date 05-Oct-2016

Revision Date 01-Dec-2016

Version 5

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## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Product Name** Ammonia Cyanurate  
**Safety data sheet number** M00128

### Other means of identification

**Product Code(s)** 2653199

**UN/ID no** UN2680

### Manufacturer Address

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

### Emergency Telephone

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

## 2. HAZARDS IDENTIFICATION

### GHS - Classification

Corrosive to metals	Category 1
Acute toxicity - Oral	Category 5
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Aquatic Acute Toxicity	Category 3
Chronic aquatic toxicity	Category 3

### Label elements



**Signal word - Danger**

### Hazard statements

H290 - May be corrosive to metals  
 H303 - May be harmful if swallowed  
 H314 - Causes severe skin burns and eye damage  
 H412 - Harmful to aquatic life with long lasting effects

### 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  
P273 - Avoid release to the environment  
P234 - Keep only in original container  
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  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P310 - Immediately call a POISON CENTER or doctor  
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

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance

Not applicable

#### Mixture

Chemical Name	Formula	CAS No	EC No	Percent Range
Trisodium citrate	C <sub>6</sub> H <sub>5</sub> O <sub>7</sub> Na <sub>3</sub>	68-04-2	200-675-3	80 - 90%
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt	Na <sub>2</sub> C <sub>4</sub> H <sub>4</sub> O <sub>6</sub> • 2H <sub>2</sub> O	868-18-8	212-773-3	7 - 13%
Lithium hydroxide monohydrate	LiOH • H <sub>2</sub> O	1310-66-3	-	1 - 5%
Dichloroisocyanuric acid, sodium salt	C <sub>3</sub> HCl <sub>2</sub> N <sub>3</sub> O <sub>3</sub> Na	2893-78-9	220-767-7	1 - 5%

### 4. FIRST AID MEASURES

#### Description of first aid measures

##### **General advice**

See section 8 for PPE that may be required during handling. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If no local exhaust use approved fume hood and/or respirator. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. Remove from exposure, lie down. Immediate medical attention is required. IF IN EYES: Flush eyes for at least 15 minutes. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

##### **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** First aider: Pay attention to self-protection. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**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

### **Fire-fighting Measures**

**Flammable properties**

During a fire, irritating and highly toxic gases may be generated by thermal decomposition. Not classified as flammable according to GHS criteria.

**Suitable Extinguishing Media**

Dry chemical. Carbon dioxide. Water.

**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.

**Hazardous combustion products** May emit toxic and corrosive fumes.

**Protective equipment and precautions for firefighters**

Wear self-contained breathing apparatus and protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

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

**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. See Section 12 for additional ecological information.

**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.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

### **Precautions for safe handling**



<b>Melting point/freezing point</b>	> 240 °C / 464 °F	
<b>Boiling point / boiling range</b>	No data available	
<b>Evaporation rate</b>	Not applicable	
<b>Vapor pressure</b>	0.375 mm Hg / 0.05 kPa at 20 °C / 68 °F	Estimation based on theoretical calculation
<b>Vapor density (air = 1)</b>	Not applicable NaN (air = 1)	
<b>Specific gravity (water = 1 / air = 1)</b>	1.783	
<b>Partition Coefficient (n-octanol/water)</b>	Not applicable	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	Not applicable	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No data available	
<b>Dynamic viscosity</b>	Not applicable	
<b>Kinematic viscosity</b>	Not applicable	

**Solubility(ies)**

**Water solubility**

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	No data available	25 °C / 77 °F

**Solubility in other solvents**

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

**Other Information**

<b>Metal Corrosivity</b>	Classified as corrosive to metal according to GHS criteria
GHS Metal Corrosivity Classification	Category 1, H290
<b>Steel Corrosion Rate</b>	0 mm/yr / 0 in/yr
<b>Aluminum Corrosion Rate</b>	20.4 mm/yr / 0.8 in/yr
<b>Volatile Organic Compounds (VOC) Content</b>	Not applicable.
<b>Bulk density</b>	Not applicable
<b>Explosive properties</b>	Not classified according to GHS criteria.
<b>Explosion data</b>	No data available
<b>Upper explosion limit</b>	No data available
<b>Lower explosion limit</b>	No data available
<b>Flammable properties</b>	During a fire, irritating and highly toxic gases may be generated by thermal decomposition. Not classified as flammable according

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to GHS criteria.

#### Flammability Limit in Air

**Upper flammability limit:** No data available

**Lower flammability limit:** No data available

**Flash point** Not applicable

**Method** No information available

**Oxidizing properties** Not classified according to GHS criteria.

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

**Stability** Stable under normal conditions.

**Special dangers of the product** None reported.

**Conditions to avoid** Heat, flames and sparks.

**Incompatible materials** None known based on information supplied.

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

**Possibility of Hazardous Reactions** None under normal processing.

#### 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

<b>Product Information</b>	Corrosive to skin. Corrosive to eyes. May be harmful if swallowed.
<b>Inhalation</b>	Causes burns. Corrosive by inhalation.
<b>Eye contact</b>	Corrosive to the eyes and may cause severe damage including blindness. Causes burns.

<b>Skin contact</b>	Cause severe skin burns and eye damage.
<b>Ingestion</b>	Ingestion causes burns of the upper digestive and respiratory tracts. May be harmful if swallowed.
<b>Aggravated Medical Conditions</b>	Eye disorders. Skin disorders. Respiratory disorders.
<b>Toxicologically synergistic products</b>	None known.
<b>Toxicokinetics, metabolism and distribution</b>	See ingredients information below.

<b>Chemical Name</b>	<b>Toxicokinetics, metabolism and distribution</b>
Trisodium citrate (80 - 90%) CAS#: 68-04-2	Citric Acid is an important component of the Krebs Cycle.

**Product Acute Toxicity Data**

Test data reported below

**Oral Exposure Route**

<b>Endpoint type</b>	<b>Reported dose</b>	<b>Key literature references and sources for data</b>
Rat LD <sub>50</sub>	3613 mg/kg	Outside testing

**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

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

<b>ATEmix (inhalation-dust/mist)</b>	39.34 mg/L
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**Ingredient Acute Toxicity Data**

**Oral Exposure Route**

If available, see data below

<b>Chemical Name</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Exposure time</b>	<b>Toxicological effects</b>	<b>Key literature references and sources for data</b>
Trisodium citrate (80 - 90%) CAS#: 68-04-2	Rat LD <sub>50</sub>	> 8000 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	Mouse LD <sub>50</sub>	4360 mg/kg	None reported	None reported	EPA (United States Environmental Protection Agency)
Lithium hydroxide monohydrate (1 - 5%) CAS#: 1310-66-3	Rat LD <sub>50</sub>	225 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	Rat LD <sub>50</sub>	750 mg/kg	None reported	None reported	ERMA (New Zealand Environmental Risk Management Authority) HSDB (Hazardous Substances Data Bank)
<b>Chemical Name</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Exposure time</b>	<b>Toxicological effects</b>	<b>Key literature references and sources for data</b>
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	Rabbit LD <sub>50</sub>	5290 mg/kg	None reported	None reported	EPA (United States Environmental Protection Agency)

**Dermal Exposure Route**

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	Rabbit LD <sub>50</sub>	> 10000 mg/kg	None reported	None reported	No information available

**Inhalation (Dust/Mist) Exposure Route**

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Lithium hydroxide monohydrate (1 - 5%) CAS#: 1310-66-3	Rat LC <sub>50</sub>	0.96 mg/L	4 hours	None reported	IUCLID (The International Uniform Chemical Information Database)
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	Rat LC <sub>50</sub>	12.5 mg/L	4 hours	None reported	IUCLID (The International Uniform Chemical Information Database)

**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**

If available, see data below

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Trisodium citrate (80 - 90%) CAS#: 68-04-2	Patch test	Rabbit	None reported	None reported	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)
Lithium hydroxide monohydrate (1 - 5%) CAS#: 1310-66-3	Existing human experience	Human	None reported	None reported	Corrosive to skin	ERMA (New Zealand's Environmental Risk Management Authority)
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	Standard Draize Test	Rabbit	500 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**

If available, see data below

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Trisodium citrate (80 - 90%) CAS#: 68-04-2	None reported	Rabbit	None reported	None reported	Mild eye irritant	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid,	None reported	Human	None	None	Not corrosive or	ECHA (The European



2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8			reported	reported	irritating to eyes	Chemicals Agency)
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	Rinse Test	Rabbit	None reported	None reported	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** If available, see data below.

Chemical Name	Test method	Species	Results	Key literature references and sources for data
Trisodium citrate (80 - 90%) CAS#: 68-04-2	None reported	Guinea pig	Not confirmed to be a skin sensitizer	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	None reported	Human	Not confirmed to be a skin sensitizer	ECHA (The European Chemicals Agency)

**Respiratory Sensitization Exposure Route** If available, see data below.

Chemical Name	Test method	Species	Results	Key literature references and sources for data
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	None reported	Human	Not confirmed to be a skin sensitizer	ECHA (The European Chemicals Agency)

**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** No data available

**Dermal Exposure Route** No data available

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

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Inhalation (Vapor) Exposure Route

No data available

Inhalation (Gas) Exposure Route

No data available

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Trisodium citrate	68-04-2	-	-	-	-
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt	868-18-8	-	-	-	-
Lithium hydroxide monohydrate	1310-66-3	-	-	-	-
Dichloroisocyanuric acid, sodium salt	2893-78-9	-	-	-	-

**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)	Does not apply

**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**

If available, see data below

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Trisodium citrate (80 - 90%) CAS#: 68-04-2	Rat	3000 mg/kg	2 years	None reported	IUCLID (The International Uniform Chemical Information Database)

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 *in vitro* Data**

No data available.

**Ingredient Germ Cell Mutagenicity *in vitro* Data**

If available, see data below

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and
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						<b>sources for data</b>
Trisodium citrate (80 - 90%) CAS#: 68-04-2	Mutation in microorganisms	<i>Salmonella typhimurium</i>	None reported	None reported	Negative test result for mutagenicity	IUCLID (The International Uniform Chemical Information Database)

**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 *in vivo* 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** If available, see data below

<b>Chemical Name</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Exposure time</b>	<b>Toxicological effects</b>	<b>Key literature references and sources for data</b>
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	Mouse TD <sub>Lo</sub>	4000 mg/kg	9 days	<b>Effects on Newborn</b> Growth statistics (e.g. % reduced weight gain) Physical <b>Specific Developmental Abnormalities</b> Musculoskeletal system	RTECS (Registry of Toxic Effects of Chemical Substances)
<b>Chemical Name</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Exposure time</b>	<b>Toxicological effects</b>	<b>Key literature references and sources for data</b>
Trisodium citrate (80 - 90%) CAS#: 68-04-2	Rat	600 mg/kg	None reported	None reported	No information 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

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Harmful to aquatic life with long lasting effects

**Unknown Aquatic Toxicity**

0% of the mixture consists of component(s) of unknown hazards to the aquatic 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**

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Trisodium citrate (80 - 90%) CAS#: 68-04-2	96 hours	<i>Poecilia reticulata</i>	LC <sub>50</sub>	> 18000 mg/L	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	96 hours	None reported	LC <sub>50</sub>	612000 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	96 hours	<i>Oncorhynchus mykiss</i>	LC <sub>50</sub>	0.25 mg/L	PEEN (Pan European Ecological Network)

**Crustacea**

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Trisodium citrate (80 - 90%) CAS#: 68-04-2	None reported	None reported	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	48 Hours	None reported	LC <sub>50</sub>	263000 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
Dichloroisocyanuric acid, sodium salt	48 Hours	<i>Daphnia magna</i>	LC <sub>50</sub>	0.28 mg/L	ECHA (The European Chemicals Agency)

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(1 - 5%) CAS#: 2893-78-9					PEEN (Pan European Ecological Network)
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**Algae**

If available, see ingredient data below

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Trisodium citrate (80 - 90%) CAS#: 68-04-2	96 hours	<i>Chlorella vulgaris</i>	EC <sub>50</sub>	> 18000 mg/L	IUCLID (The International Uniform Chemical Information Database)
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	96 hours	None reported	EC <sub>50</sub>	623770 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

**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
Butanedioic acid, 2,3-dihydroxy-[R-(R*, R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	None reported	73%	14 days	Readily biodegradable
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	None reported	None reported	None reported	Readily biodegradable

**Bioaccumulation**

None known.

**Product Bioaccumulation Data** No data available.

**Ingredient Bioaccumulation Data** No data available

**Additional information**

**Product Information**

**Partition Coefficient (n-octanol/water)** Not applicable

**Ingredient Information**

Chemical Name	Partition Coefficient (n-octanol/water)	Method
Trisodium citrate (80 - 90%) CAS#: 68-04-2	log K <sub>ow</sub> = -0.76	No information available
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	log K <sub>ow</sub> = -4.28	No information available
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	log K <sub>ow</sub> = -0.06	Estimation through KOWWIN v1.68 part of the Estimation Programs Interface (EPI) Suite™

**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
Trisodium citrate (80 - 90%) CAS#: 68-04-2	log K <sub>oc</sub> = 0.68	No information available
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	log K <sub>oc</sub> = -1.33	No information available

**Additional information**

**Water solubility**

**Product Information**

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	No data available	25 °C / 77 °F

**Ingredient Information**

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
Trisodium citrate (80 - 90%) CAS#: 68-04-2	Completely soluble	425000 mg/L	20 °C	68 °F
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt (7 - 13%) CAS#: 868-18-8	Completely soluble	100000 mg/L	20 °C	68 °F
Lithium hydroxide monohydrate (1 - 5%) CAS#: 1310-66-3	Completely soluble	128000 mg/L	20 °C	68 °F
Dichloroisocyanuric acid, sodium salt (1 - 5%)	Completely soluble	227000 mg/L	25 °C	77 °F

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CAS#: 2893-78-9				
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**Other adverse effects**  
 No information available.

Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Dichloroisocyanuric acid, sodium salt (1 - 5%) CAS#: 2893-78-9	Group III Chemical	-	-

### 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 acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Flush system with plenty of water.
- Waste from residues/unused products** Disposal should be in accordance with applicable regional, national, and local laws and regulations.
- Contaminated packaging** Do not reuse container.

### 14. TRANSPORT INFORMATION

**IMDG**

Proper shipping name Lithium Hydroxide Mixture  
 Hazard Class 8  
 UN/ID no UN2680  
 Packing Group II

**IATA**

UN/ID no UN2680  
 Proper shipping name Lithium Hydroxide Mixture  
 Hazard Class 8  
 Packing Group II  
 ERG Code 154

**DOT**

Proper shipping name Lithium Hydroxide Mixture  
 Hazard Class 8  
 UN/ID no UN2680  
 Packing Group II  
 Marine pollutant This product contains a chemical which is listed as a marine pollutant according to DOT.

**TDG**

Hazard Class 8  
 UN/ID no UN2680  
 Packing Group II  
 Marine pollutant This product contains a chemical which is listed as a severe marine pollutant according to

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TDG.

**ADR**

**Proper shipping name** Lithium Hydroxide Mixture  
**Hazard Class** 8  
**UN/ID no** UN2680  
**Packing Group** II

**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**

**International Inventories**

**TSCA** Complies  
**DSL/NDSL** Complies  
**EINECS/ELINCS** Complies  
**ENCS** Complies  
**IECSC** Complies  
**KECL** Complies  
**PICCS** Complies  
**TCSI** Complies  
**AICS** Complies  
**NZIoC** Complies

**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

**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

**Wastes Management** Dispose of in accordance with federal, state and local regulations

**Basel Convention Codes**

Chemical Name	CAS No	ANNEX I	ANNEX III
Trisodium citrate	68-04-2	-	-
Butanedioic acid, 2,3-dihydroxy-[R-(R*,R*)]-, disodium salt	868-18-8	-	-
Lithium hydroxide monohydrate	1310-66-3	-	-
Dichloroisocyanuric acid, sodium salt	2893-78-9	-	-

**International Regulations**

**Ozone-depleting substances (ODS)** Not applicable

**Persistent Organic Pollutants** Not applicable



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**Export Notification requirements** Not applicable

## 16. OTHER INFORMATION

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

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

### 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

**Issue Date** 05-Oct-2016

**Revision Date** 01-Dec-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.**

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**End of Safety Data Sheet**