

# Tower Garden® pH - Acid

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).  
Revision Date: 09/20/2017 Date of Issue: 10/05/2017 Version: 1.10

## SECTION 1: IDENTIFICATION

### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** Tower Garden® pH - Acid

### 1.2. Intended Use of the Product

Lowers the nutrient pH for the Tower Garden® aeroponic growing system.

### 1.3. Name, Address, and Telephone of the Responsible Party

#### Company

The Juice Plus+ Company

140 Crescent Drive

Collierville, TN 38017

901-850-3000

[www.towergarden.com](http://www.towergarden.com)

### 1.4. Emergency Telephone Number

**Emergency Number** : 1-800-262-8200

CHEMTREC

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### GHS-US/CA Classification

HHNOC 1

Met. Corr. 1 H290

Skin Corr. 1A H314

Eye Dam. 1 H318

Full text of hazard classes and H-statements : see section 16

### 2.2. Label Elements

#### GHS-US/CA Labeling

#### Hazard Pictograms (GHS-US/CA)



#### Signal Word (GHS-US/CA)

: Danger

#### Hazard Statements (GHS-US/CA)

: H290 - May be corrosive to metals.  
H314 - Causes severe skin burns and eye damage.  
H318 - Causes serious eye damage.  
HHNOC - Causes severe damage to the respiratory tract.

#### Precautionary Statements (GHS-US/CA)

: P234 - Keep only in original container.  
P260 - Do not breathe vapors, mist, or spray.  
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.  
P280 - Wear protective gloves, protective clothing, and 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.  
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 or doctor.  
P321 - Specific treatment (see section 4 on this SDS).  
P363 - Wash contaminated clothing before reuse.  
P390 - Absorb spillage to prevent material-damage.

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P405 - Store locked up.

P406 - Store in corrosive resistant container with a resistant inner liner.

P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

### 2.4. Unknown Acute Toxicity (GHS-US/CA)

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product Identifier	% *	GHS Ingredient Classification
Water	(CAS-No.) 7732-18-5	76	Not classified
Citric acid	(CAS-No.) 77-92-9	12	Eye Irrit. 2A, H319 Comb. Dust
Phosphoric acid	(CAS-No.) 7664-38-2	12	HHNOC 1 Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402

Full text of H-phrases: see section 16

\*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of 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).

**Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

**Skin Contact:** Remove contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Get immediate medical advice/attention. Wash contaminated clothing before reuse.

**Eye Contact:** Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

**General:** Causes severe skin burns and eye damage.

**Inhalation:** Causes severe damage to the respiratory tract.

**Skin Contact:** Causes severe irritation which will progress to chemical burns.

**Eye Contact:** Causes permanent damage to the cornea, iris, or conjunctiva.

**Ingestion:** May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

**Chronic Symptoms:** None expected under normal conditions of use.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Water spray, dry chemical, foam, carbon dioxide.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

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### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not considered flammable but may burn at high temperatures.

**Explosion Hazard:** Contact with metallic substances may release flammable hydrogen gas.

**Reactivity:** May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Carbon oxides (CO, CO<sub>2</sub>). Phosphorus oxides. Nitrogen oxides. Metal oxides.

### Reference to Other Sections

Refer to Section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Do not breathe vapor, mist or spray. Do not get in eyes, on skin, or on clothing.

#### 6.1.1. For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protective equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and Materials for Containment and Cleaning Up

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

**Methods for Cleaning Up:** Cautiously neutralize spilled liquid. Absorb spillage to prevent material damage. Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

### 6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Additional Hazards When Processed:** May be corrosive to metals. May release corrosive vapors.

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not get in eyes, on skin, or on clothing. Handle empty containers with care because they may still present a hazard. Do not breathe vapors, mist, spray.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store in corrosive resistant container with a resistant inner liner. Storage areas should be periodically checked for corrosion and integrity.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers. Metals.

### 7.3. Specific End Use(s)

Lowers the nutrient pH for the Tower Garden® aeroponic growing system.

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### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Phosphoric acid (7664-38-2)		
Mexico	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Mexico	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
USA ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
USA IDLH	US IDLH (mg/m <sup>3</sup> )	1000 mg/m <sup>3</sup>
Alberta	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
British Columbia	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Manitoba	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Manitoba	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
New Brunswick	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Nova Scotia	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Nunavut	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Nunavut	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Ontario	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Ontario	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Prince Edward Island	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Québec	VECD (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Québec	VEMP (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Saskatchewan	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Yukon	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Yukon	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>

#### 8.2. Exposure Controls

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

**Personal Protective Equipment:** Gloves. Protective clothing. Protective goggles. Face shield. Insufficient ventilation: wear respiratory protection.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics. Corrosion-proof clothing.

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**Hand Protection:** Wear protective gloves.

**Eye and Face Protection:** Chemical safety goggles and face shield.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Red
Odor	: Not available
Odor Threshold	: Not available
pH	: < 1
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: Not available
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20°C	: Not available
Relative Density	: Not available
Specific Gravity	: Not available
Solubility	: Not available
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity:** May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

**10.2. Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).

**10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials.

**10.5. Incompatible Materials:** Strong acids, strong bases, strong oxidizers. Metals.

**10.6. Hazardous Decomposition Products:** None expected under normal conditions of use.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on Toxicological Effects - Product

**Acute Toxicity (Oral):** Not classified

**Acute Toxicity (Dermal):** Not classified

**Acute Toxicity (Inhalation):** Not classified

**LD50 and LC50 Data:** Not available

**Skin Corrosion/Irritation:** Causes severe skin burns and eye damage.

**pH:** < 1

**Eye Damage/Irritation:** Causes serious eye damage.

**pH:** < 1

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**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Causes severe damage to the respiratory tract.

**Symptoms/Injuries After Skin Contact:** Causes severe irritation which will progress to chemical burns.

**Symptoms/Injuries After Eye Contact:** Causes permanent damage to the cornea, iris, or conjunctiva.

**Symptoms/Injuries After Ingestion:** May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

**Chronic Symptoms:** None expected under normal conditions of use.

### 11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Phosphoric acid (7664-38-2)	
LD50 Oral Rat	1530 mg/kg
LD50 Dermal Rabbit	2740 mg/kg
LC50 Inhalation Rat	> 850 mg/m <sup>3</sup> (Exposure time: 1 h)
Citric acid (77-92-9)	
LD50 Oral Rat	5400 mg/kg
LD50 Dermal Rat	> 2000 mg/kg

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General:** Not classified.

Citric acid (77-92-9)	
LC50 Fish 1	1516 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

### 12.2. Persistence and Degradability

Tower Garden® pH - Acid	
Persistence and Degradability	Not established.
Citric acid (77-92-9)	
Persistence and Degradability	Readily biodegradable in water.

### 12.3. Bioaccumulative Potential

Tower Garden® pH - Acid	
Bioaccumulative Potential	Not established.
Citric acid (77-92-9)	
Log Pow	-1.72 (at 20 °C)

**12.4. Mobility in Soil** Not available

### 12.5. Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

**Additional Information:** Container may remain hazardous when empty. Continue to observe all precautions.

**Ecology - Waste Materials:** Avoid release to the environment.

## SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

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### 14.1. In Accordance with DOT

Proper Shipping Name : PHOSPHORIC ACID SOLUTION  
Hazard Class : 8  
Identification Number : UN1805  
Label Codes : 8  
Packing Group : III  
ERG Number : 154



### 14.2. In Accordance with IMDG

Proper Shipping Name : PHOSPHORIC ACID SOLUTION  
Hazard Class : 8  
Identification Number : UN1805  
Label Codes : 8  
Packing Group : III  
EmS-No. (Fire) : F-A  
EmS-No. (Spillage) : S-B



### 14.3. In Accordance with IATA

Proper Shipping Name : PHOSPHORIC ACID, SOLUTION  
Identification Number : 8  
Hazard Class : UN1805  
Label Codes : 8  
Packing Group : III  
ERG Code (IATA) : 8L



### 14.4. In Accordance with TDG

Proper Shipping Name : PHOSPHORIC ACID, SOLUTION  
Hazard Class : 8  
Identification Number : UN1805  
Label Codes : 8  
Packing Group : III



## SECTION 15: REGULATORY INFORMATION

### 15.1. US Federal Regulations

Tower Garden® pH - Acid	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>Water (7732-18-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Phosphoric acid (7664-38-2)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	5000 lb
<b>Citric acid (77-92-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

### 15.2. US State Regulations

<b>Phosphoric acid (7664-38-2)</b>
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

### 15.3. Canadian Regulations

<b>Water (7732-18-5)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Phosphoric acid (7664-38-2)</b>
Listed on the Canadian DSL (Domestic Substances List)

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

Listed on the Canadian DSL (Domestic Substances List)

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Date of Preparation or Latest Revision** : 10/05/2017

### Revision

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

### GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Comb. Dust	Combustible Dust
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
H290	May be corrosive to metals
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H319	Causes serious eye irritation
H402	Harmful to aquatic life

*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.*

NA GHS SDS 2015 (Can, US, Mex)