



## INGREDIENT SPECIFICATION

### CITRIC ACID

**DESCRIPTION:** Citric Acid, Anhydrous is produced by a submerged fermentation process utilizing renewable carbohydrate sources for a selected strain of *Aspergillus niger*. It is available as a white, granular to fine granular crystalline product, as well as a powder. Citric Acid, Anhydrous is odorless, has a strongly acid taste, and is slightly deliquescent in moist air.

HACCP: This product is processed and/or packed under a documented HACCP plan.

INGREDIENT STATEMENT: 100% Citric Acid  
COUNTRY OF ORIGIN: USA

#### PHYSICAL CHARACTERISTICS:

COLOR: White, fine, translucent crystals  
AROMA: None  
TASTE: Tart

#### CHEMICAL CHARACTERISTICS:

LEAD: 5 ppm Max  
ASSAY: 99.5-100.5%  
WATER: 0.5% Max.  
RESIDUE ON IGNITION: 0.05% Max.  
LIMIT OF OXALIC ACID: 0.036% Max  
SULFATE: 0.015% Max  
HEAVY METALS: 5.0 ppm Max

#### SHELF LIFE & STORAGE:

5 Years  
Stored in a cool, dry place below 85°F and 70% maximum relative humidity. The package should be tightly sealed.

#### PARTICLE SIZE (CITA):

3% Max. on a #30 Sieve.  
5% Max through 100 Sieve.

**REGULATORY:** Pacific Spice Company, Inc. represents that per our records and inquiries, our products conform to the provisions of the Federal Food, Drug and Cosmetics Act as amended, and applicable State Laws and Municipal Ordinances. Our products are manufactured in accordance with good manufacturing practices (GMP) and under modern sanitary conditions.

**GMO STATUS:** Based on our information, this product is derived from genetically modified product.

**SEWAGE SLUDGE:** To the best of our knowledge, this product is cultivated without the use of Sewage Sludge.





## ALLERGEN INFORMATION

### CITRIC ACID

Materials	Contained In the Ingredient	Present in the Plant	Manufactured on the same line
Wheat/wheat products (flour, starches)	NO	YES (Wheat)	YES (Wheat)
Soybeans/soybean products (flour, oil, proteins)	NO	YES (Soy)	YES (Soy)
Peanuts/peanut products (oil, meal, nuts, flour)	NO	NO	NO
Milk/milk products/dairy or dairy derivatives	NO	YES (Milk)	YES (Milk)
Eggs or egg products	NO	YES (Egg)	YES (Egg)
Tree Nuts (almond, brazil nut, cashew, chestnut, hazelnut (filbert), pine nuts (pinyon, pinon, pistachio, pecan, macadamia, walnut, coconut)	NO	YES (Almond, Coconut)	YES (Almond, Coconut)
Seafood / Fish	NO	NO	NO
Crustacean / Shellfish	NO	NO	NO
Celery (seed, stalk, leaf & root)	NO	YES (Celery)	YES (Celery)
Mustard products	NO	YES (Mustard)	YES (Mustard)
Seeds or seed products (cotton, poppy, sesame, sunflower/oil, safflower/oil)	NO	YES (Sesame, Poppy, Sunflower Oil)	YES (Sesame, Poppy, Sunflower Oil)
Rice products (flour, oil, starches)	NO	YES (Rice Flour)	YES (Rice Flour)
Gluten containing cereals (Barley, Rye, Oats, Spelt, Kamut, or their hybridized strains.	NO	YES (Barley, Rye, Oats)	YES (Barley, Rye, Oats)
Lecithin	NO	YES (Lecithin)	YES (Lecithin)
Sulfites	NO	YES (Sulfites)	YES (Sulfites)
Monosodium glutamate	NO	YES (MSG)	YES (MSG)
Hydrolyzed proteins (vegetable)	NO	YES (HVP)	YES (HVP)
Autolyzed yeast / yeast extracts	NO	YES (Yeast)	YES (Yeast)
BHA	NO	YES (BHA)	YES (BHA)
BHT	NO	YES (BHT)	YES (BHT)
Tocopherols	NO	YES (Tocopherols)	YES (Tocopherols)
TBHQ	NO	NO	NO
Non-Bovine Milk	NO	NO	NO
Beef products and their derivatives	NO	NO	NO
Pork products and their derivatives	NO	NO	NO
Chocolate / chocolate derivatives	NO	YES (Chocolate)	YES (Chocolate)
FD&C Colors	NO	YES (FD&C Colors)	YES (FD&C Colors)
Maltodextrin or Dextrose	NO	YES (Maltodextrin, Dextrose)	YES (Maltodextrin, Dextrose)

To the best of our knowledge the above information is true and complete.



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## NUTRITIONAL INFORMATION

### CITRIC ACID

Nutrient	Per 100g	Nutrient	Per 100g
Water (g)	0.5	Ash (g)	0.05
Calories (kcal)	247.00	Calcium (mg)	0.2
Protein (g)	0	Phosphorus (mg)	—
Fat (g)	0	Sodium (mg)	0.3
Saturated (g)	0	Potassium (mg)	0.3
Monounsaturated (g)	0	Iron (mg)	<0.01
Polyunsaturated (g)	0	Thiamin (mg)	0
Trans Fat (g)	0	Riboflavin (mg)	0
Cholesterol (mg)	0	Niacin (mg)	0
Total Carbohydrate (g)	99.45	Vitamin A (mcg)	0
Dietary Fiber (g)	0	Vitamin C (mg)	0
Total Sugars (g)	0	Vitamin D (mcg)	0
Added Sugars (g)	0		

The information provided herein is, to the best of our knowledge, true and accurate. Since conditions under which our products and information may be used beyond our control, any recommendations and/or suggestions are made without any warranty of any kind. Purchasers should make their own determination as to the effectiveness of the products in their processes and in their products.

SOURCE: VENDOR

## ADDITIONAL REGULATORY INFORMATION

**GLUTEN:** Per FDA's final rule, published on August 2, 2013, which gives the final definition of the term "Gluten-Free," Pacific Spice Company, Inc. cannot guarantee that this product is "Gluten-Free." If Gluten testing is required, this can be arranged upon request with an additional cost. Please inquire with your sales representative.

Citric Acid, Anhydrous complies with : FDA Regulation CFR 184.1033; EINECS-No 2010691; CAS No 77-92-9. Citric acid is a non-toxic chemical registered as an EC Food Additive (E330) with intake only limited by GMP (FAO/WHO). In the USA the product has been registered as GRAS by the FDA and Quantam Satis in EC Legislation.

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## SAFETY DATA SHEET CITRIC ACID

### Section 1. Identification

Product Description: Citric Acid, Anhydrous is produced by a submerged fermentation process utilizing renewable carbohydrate sources for a selected strain of *Aspergillus niger*. White granular crystalline product.

**Supplier:** Pacific Spice Company, Inc.  
6430 E Slauson Avenue  
Commerce, CA 90040  
Ph: 323-726-9190  
Fax: 323-726-9442  
Emergency Phone: 323-683-5638

### Section 2. Hazard(s) Identification

Warning. Irritating to eyes. Corrosive to metals (as aqueous solution). Product dust may cause mild, mechanical irritation. May for combustible dust concentrations in air (during processing and handling).

**Appearance:** White **Physical State:** Granular **Odor:** odorless

This product is classified as hazardous according to 29 CFR 1910.1200 (Known as HCS 2012), amended to conform to the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Depending on the intended use, this product is classified as hazardous according to the criteria contained in the Hazardous regulations (SOR/2015-17), also known as WHMIS 2015.


Serious Eye Damage / Eye Irritation: Category 2

OSHA Defined Hazard(s): Combustible Dust

HPR Defined Hazards(s): Combustible Dust

#### Label Elements

*NOTE:* While label elements are provided within this SDS, under 29 CFR 1910.1200 (b) (5), products already subject to the labeling requirements of other specified federal acts, may be exempt from OSHA labeling.

Signal Word:	Warning
GHS Hazard Pictogram(s):	

Hazard Statement(s):

H319 Causes serious eye irritation. May form combustible dust concentrations in air

Prevention Precautionary Statements: Wash hands and exposed skin thoroughly after handling. Wear eye/face protection.

Response Precautionary Statements: 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.





### Section 3. Composition / Information on Ingredients

Chemical nature of the preparation: Substance  
Chemical Family: Acids  
Molecular Formula:  $C_6H_8O_7$

The following component(s) in this product are considered hazardous under applicable OSHA (USA) regulations

<u>Chemical Name</u>	<u>CAS-NO</u>	<u>Weight %</u>	<u>Hazards Class</u>
Citric Acid	77-92-9	99-100	Eye Irrit. 2

### Section 4. First-Aid Measures

**Eye Contact** Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician.

**Skin Contact** Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes

**Inhalation** Move to fresh air

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

**Protection of First-aiders** Use personal protective equipment. Avoid contact with skin, eyes and clothing.

**General Advice** If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

Use personal protective equipment. For personal protection see section 8.

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

**Eyes** Irritating to eyes. Contact with eyes may cause mechanical irritation.

**Skin** According to GHS hazard classification criteria, the product is not considered as being a skin irritant. Product dust may cause mild, mechanical irritation. Health injuries are not known or expected under normal use.

**Inhalation** May cause irritation of respiratory tract. Based on the low pH, citric acid would be expected to cause irritation to the respiratory tract, resulting in a higher cough response as the inhalation exposure concentration was increased.

**Ingestion** Oral exposure is not anticipated under normal working conditions. Health injuries are not known or expected under normal use.

**Main Symptoms** Itching. Redness. Burning Sensation.

### Section 5. Fire-Fighting Measures

#### Flamable Properties

Fine dust dispersed in air may ignite. Risk of ignition followed by flame propagation or secondary explosion should be prevented by avoiding accumulation of dust, e.g. on floors and ledges

#### Extinguishing Media

**Suitable Extinguishing Media** Dry chemical. Carbon Dioxide (CO<sub>2</sub>). Water spray. Foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

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

**Hazardous Combustion Products:** Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon Dioxide (CO<sub>2</sub>).



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**Specific Hazards Arising from the Chemical:** None known

**Sensitivity to mechanical impact:** No

**Sensitivity to static discharge:** Yes. (as dust).

**Further information:** Fine dust dispersed in air may ignite. Dust explosibility class = 1. Weak to moderately explosive

**Advise for fire-fighters**

**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

**NFPA**



**Health 1**

**Flammability 1**

**Stability and Reactivity 0**

**Physical hazard None Known**

### Section 6. Accidental release measures

**Personal Precautions, Protective Equipment, and Emergency Procedures**

Avoid contact with the skin and eyes. Use personal protective equipment. For personal protection see section 8.

Avoid dust formation.

**Environmental Precautions:** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**Methods and Materials for Containment and Cleaning Up**

Pick up and transfer to properly labeled containers. Avoid dust formation. Keep in suitable, closed containers for disposal. Aqueous spillage should be neutralized and treated prior to discharge. For disposal information see section 13.

### Section 7. Handling and storage

**Handling:** Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapours/dust. Use only in area provided with appropriate exhaust ventilation. Avoid dust formation in confined areas. Fine dust dispersed in air may ignite. Ensure adequate ventilation. Refer to NFPA 61, "Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities."

**Storage:** Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labelled containers. Keep at temperature no exceeding 23.9°C / 75°F. at 23.9 RH. Keep away from metals. Corrosive to metals (as aqueous solution). Keep away from oxidizing agents. Keep away from strong bases. Keep away from amines.

### Section 8. Exposure controls / personal protection

**Exposure Limits:** Where exposure limits have not been established for specific components of this material, please observe the OSHA and ACGIH established limits for particulates not otherwise classified (PNOC). OSHA PEL: (15mg/m<sup>3</sup> (total dust) 8-hr TWA), (5 mg/m<sup>3</sup> (respirable) 8-hr TWA). ACGIH TLV: (10 mg/m<sup>3</sup> (inhalable) 8-hr TWA), (3 mg/m<sup>3</sup> (respirable) 8-hr TWA).

**Biological Limit Values:** No biological limit values have been listed for the component(s) of this product.

**Appropriate Engineering Controls:** Local exhaust ventilation, Ensure adequate ventilation, especially in confined areas.

**General Hygiene Considerations:** When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing.



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**Personal Protective Equipment:**

**Eye/face Protection:** Safety glasses with side-shields. If airborne concentrations are excessive, wear goggles.

**Skin and Body Protection:** Impervious gloves. Long Sleeved clothing. Boots.

**Respiratory Protection** Respirator with a dust filter. In case of insufficient ventilation wear suitable respiratory equipment.

### Section 9. Physical and chemical properties

Appearance	White
Physical State	Solid: Granular
Odor	Odorless
Odor Threshold	Not Applicable
pH	1.8 @ 25°C at 5wt% conc
Dissociation Constants (pKa)	3.13, 4.76, and 6.4 at 25°C
Flash Point	Not applicable (solid)
Autoignition Temperature	Not applicable
Boiling Point	Not applicable (decomposes before boiling)
Melting/Freezing Point	153C / 307°F (101.3 kPa)
Decomposition Temperature	No information available
Oxidizing Properties	Not oxidizing
Flammability Limits in Air	Not flammable
Explosion Limits	Not explosive
Water Solubility	590g/l at 20°C
Surface Tension	Not applicable (no surface tension anticipated).
Evaporation Rate	Not applicable (solid)
Vapor Pressure	2.21 E-6 Pa at 25°C Not applicable
Vapor Density	Not applicable
Specific Gravity/ Relative Density	1.665g/m <sup>3</sup> at 20°C
Bulk Density	5000-950 kg/m <sup>3</sup> at 20°C
Viscosity (kinematic)	Not applicable (solid)
Partition Coefficient (in octanol/water)	neg.0.2 to neg.1.8
Explosive Properties	Not explosive

### Section 10. Stability and reactivity

**Reactivity:** Reactions with metal nitrates may be potentially explosive. Aqueous form is corrosive to copper, zinc, aluminum and their alloys.

**Stability:** Not applicable. Stable under normal conditions

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

**Conditions to Avoid:** Avoid dust formation. Heat, flames and sparks

**Incompatible Materials:** Amines. Heavy metals. Strong oxidizing agents. Strong bases.

**Hazardous Decomposition Products:** Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).





## Section 11. Toxicological information

### Information on toxicological effects

**Acute toxicity** Based on available data, the classification criteria are not met.

<u>Chemical Name</u>	<u>Weight %</u>	<u>LD50 Oral</u>	<u>LD50 Dermal</u>	<u>LC50 Inhalation</u>
Citric Acid	99-100	5400 mg/kg Mouse 11700 mg/kg Rat	>2000 mg/kg bw Rat	

**Skin corrosion/irritation:** Based on available data, not, or only slightly irritating

**Serious eye damage/eye irritation:** Irritant, causes serious eye irritation

**Method:** OECD Guideline 405 (Acute Eye Irritation/Corrosion)

**Species:** Rabbit (New Zealand White)

**Results:** Irritating: Overall irritation score for 10% solution: 9.3 of max. 110 (mean (of 3 animals)) (Time point: at 1, 24, 48, or 72h) (fully reversible within: 7 days) (score achieved at 1 h) Overall irritation score for 30% solution: 16 of max. 110 (mean of 3 animals)) (Time point: at 1, 24, 48, or 72 h) (not fully reversible in 14-21 days) (expert opinion) (score achieved at 1h)

**Respiratory or skin sensitisation** Based on available data, not expected to be a skin or respiratory sensitiser

**Germ cell mutagenicity:** Based on available data, negative to test/non-mutagenic

**Carcinogenicity:** Based on available data, no evidence of carcinogenicity

**Reproductive toxicity:** Based on available data, no evidence of reproductive toxicity

**STOT - single exposure:** No evidence of toxicity

**STOT - repeated exposure:** Based on available data, no toxicity identified at highest exposure levels (NOAEL (rats) 4000 mg/kg bw/d)

**Aspiration hazard** Based on available data, no known aspiration hazard

### Potential health effects

**Eyes:** Irritating to eyes. Contact with eyes may cause mechanical irritation

**Skin:** Accordint to GHS hazard classification criteria, the product is not considered as being a skin irritant. Product may cause mild, mechanical irritaion. Health injuries are not known or expected under normal use

**Inhalation:** May cause irritation of respiratory tract. Base don the low pH, citric acid would be expected to cause irritation to the respiratory tract, resulting in a higher cough response as the inhalation exposure concentration was increased.

**Ingestion:** Oral exposure is not anticipated under normal working conditions. Health injuries are not known or expected under normal use.

**Main Symptoms:** Itching. Redness. Burning Sensation.

## Section 12. Ecological information

### Ecotoxicity

no substances known to be not degradable in waste water treatment plants.

<u>Chemical Name</u>	<u>Fresh Water Algae</u>	<u>Acute Fish Toxicity</u>	<u>Daphnia (Water flea)</u>	<u>Effects on micro-organisms</u>
Citric Acid	NOEC(8d): 425 mg/l	LC50 (48h): 440 mg/L (Leucisus idus) (nominal)	EC (24h): 1535 mg/L	

Predicted No Effect Concentrations (PNEC) - Determined by extrapolation



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Chemical Name	Aqua (fresh water)	Aqua (marine)	Sewage Treatment Plant	Sediment (fresh water)	Sediment (marine)	Soil
Citric Acid	0.44 mg/l	0.044 mg/l	>1000 mg/l	34.6 mg/kg	3.46 mg/kg	33.1 mg/kg

BCF Bioaccumulation is unlikely. (LogKow <0)

Chemical Name	Log Kow	BCF
Citric Acid	neg 0.2 to neg 1.8	BCF approx 3.2 (estimated)

**Persistence/Degradability:** Readily biodegradable

**Mobility:** Soluble in water

**PBT and vPvB assessment:** This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)

**Other adverse effects:** Nothing specific known

### Section 13. Disposal considerations

Whenever possible, as rules and regulations allow, please recycle or manage materials to minimize waste.

**Waste Disposal Methods:** Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction. Rinsewater resulting from cleanup should be collected for treatment before disposal. Solutions with low pH-value should be neutralized before discharge.

**Contaminated packaging:** Empty containers should be decontaminated and taken for local recycling, recovery or waste disposal

### Section 14. Transport information

General: Not regulated.

### Section 15. Regulatory information

#### USA

##### Federal Regulations

**Ozone Depleting Substances:** No class 1 or Class 2 material is known to be used in the manufacture of, or contained in, this product.

**SARA 313** Section 313 of Title 3 of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 372.

##### CERCLA/SARA 103-302 Hazardous Categorization

Refer to the OSHA hazard classification(s) provided in section 2 of this SDS

**Acute Health Hazard:** Yes

**Chronic Health Hazard:** No

**Fire Hazard:** Yes (when in the form of combustible dust)

**Sudden Release of Pressure Hazard:** No

**Reactive Hazard:** No

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 63):** This Product is not known to contain any HAPs.

### Section 16. Other information

Date Issued: 06/12/2020

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Issued by: QA Department

Date Reviewed: 09/20/2021

Supersedes: 07/08/2019

Q:/Technical Department/New Spec

