

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 08/01/2008

Reviewed on 09/22/2010

1 Identification of substance

- **Trade name:** Citric Acid Powder Pack, 10 and 25 ml
- **Product use:** Reagent for water analysis
- **Catalogue number:** RP171-0, RP194-0
- **Manufacturer/Supplier:**
Orbeco-Hellige Inc.
6456 Parkland Dr.
Sarasota, FL 34243-4036
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.orbeco.com
Made in Germany
- **Emergency information:** Chemtrec: 800-424-9300

2 Hazards identification

- **Hazard description:**



Xi Irritant

- **Canadian Hazard Symbols:**



- **WHMIS classification:**

D2B

Toxic material causing other toxic effects

- **Information pertaining to particular dangers for man and environment:**

Irritating to eyes.

- **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 1

Reactivity = 0

3 Composition / Data on components

- **Chemical characterization:**
- **CAS No. Description**
77-92-9 citric acid
- **Identification number(s)**
- **EINECS Number:** 201-069-1

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4 First aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes (15 min) under running water.
Call a doctor immediately.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **The following symptoms may occur:**
after swallowing of large amounts:
sickness
diarrhoea
cramps
pain
after inhalation:
irritations

5 Fire fighting measures

- **Suitable extinguishing agents:**
Water
Foam
Fire-extinguishing powder
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
carbon monoxide and carbon dioxide
combustible
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Ambient fire may liberate hazardous vapours.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Avoid formation of dust.
- **Measures for environmental protection:** Do not allow product to reach sewage system or any water course.
- **Measures for cleaning/collecting:**
Pick up mechanically.
Ensure adequate ventilation.
Dispose contaminated material as waste according to item 13.

7 Handling and storage

- **Handling:**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** Protect from heat.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.

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- **Information about storage in one common storage facility:**

- store away from metals
- store away from solvents

- **Further information about storage conditions:**

- Keep receptacle tightly sealed.
- Store in dry conditions.
- Protect from humidity and water.
- Protect from heat and direct sunlight.

- **Recommended storage temperature:** 20°C +/- 5°C

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:** Not required.

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Filter P2

- **Protection of hands:** After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

- Nitrile rubber, NBR
- Recommended thickness of the material: ≥ 0.11 mm

- **Penetration time of glove material**

- The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Value for the permeation: Level ≥ 6 (480 min)

- **Eye protection:** Tightly sealed goggles

- **Body protection:** Protective work clothing

9 Physical and chemical properties

· Odor Threshold:	Not applicable.
· Form:	Powder
· Color:	White
· Odor:	Odorless
· Melting point/Melting range:	153°C (307°F)
· Boiling point/Boiling range:	345°C (653°F)
· Freezing Point:	Not applicable.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Flammable.
· Upper Flammable Limit:	Not applicable.
· Lower Flammable Limit:	Not applicable.
· Ignition temperature:	345°C (653°F)
· Sensitivity to Mechanical Impact:	None
· Sensitivity to Static Discharge:	None

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· Danger of explosion:	The following applies in general to flammable organic substances / preparations: Dust explosion possible if in powder or granular form (fine distribution), mixed with air.
· Vapor Pressure at 20°C (68°F):	< 0.1 hPa (< 0 mm Hg)
· Vapor Density:	Not applicable.
· Specific Gravity:	Not applicable.
· Density at 20°C (68°F):	1.665 g/cm ³
· Bulk density at 20°C (68°F):	560 kg/m ³
· Solubility in / Miscibility with Water at 20°C (68°F):	1330 g/l
· Coefficient of Water / Oil Distribution:	Not applicable.
· pH-value (7.93 g/l) at 20°C (68°F):	2.2
· Organic solvents:	0.0 %
· Solids content:	100.0 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
 - alkalis
 - metals
 - reducing agents
 - halogen compounds
 - combustible materials
 - oxidizing agents
- **Dangerous reactions**
 - As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
 - Reacts with certain metals.
 - Risk of dust explosion if enriched with fine dust in the presence of air.
- **Dangerous products of decomposition:** see chapter 5

11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

77-92-9 citric acid

Oral	LD50	3000 mg/kg (rat)
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- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Carcinogenicity:** NTP? IARC Monographs? OSHA Regulated? see chapter 8 / 15
- **Teratogenicity:** Not found.
- **Mutagenicity:** Not found.
- **Reproductive Toxicity:** Not found.
- **Synergistic Products:** None

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12 Ecological information

· **Information about elimination (persistence and degradability):**

· **Other information:**

The product is easily biodegradable.

CAS-No. 77-92-9 citric acid: 98% / 2 d

· **Behavior in environmental systems:**

77-92-9 citric acid

log P(o/w) -1.72 (20°C) (.)

· **Mobility and bioaccumulation potential:** Does not accumulate in organisms [$\log (Po/w) < 1$].

· **Ecotoxicological effects:**

· **Aquatic toxicity:**

77-92-9 citric acid

LC50 440-760 mg/l/96h (Leuciscus idus)

· **Remark:** Harmful effect due to pH shift.

· **Additional ecological information:**

· **CSB-value:**

77-92-9 citric acid

COD 0.728 g/g (.)

· **BSB5-value:**

77-92-9 citric acid

BSB5 0.526 g/g (.)

· **General notes:**

Water hazard class 1 (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

13 Disposal considerations

· **Product:**

· **Recommendation:**

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **DOT regulations:**

· **Hazard class:** None

· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:** None

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· **Maritime transport IMDG:**

· **IMDG Class:** None

· **Marine pollutant:** No

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** None

· **Proper shipping name:** None

· **Canadian TDG Class:** None

· **UN "Model Regulation":** None

· **Transport/Additional information:** Not dangerous according to the above specifications.

15 Regulations

· **Sara**

· **Section 355 (Extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

77-92-9 | citric acid

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Canadian Ingredient Disclosure List**

· **Limit 0,1%**

Substance is not listed.

· **Limit 1%**

Substance is listed.

· **Canadian Domestic Substances List (DSL)**

77-92-9 | citric acid

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

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· OSHA-Ca (Occupational Safety & Health Administration)	
Substance is not listed.	
· ENCS List (MITI):	
77-92-9	citric acid

- **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

- **Hazard symbols:**

Xi Irritant

- **Risk phrases:**

Irritating to eyes.

- **Safety phrases:**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

- **Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.

- **CPR Classification:** Class D, Division 2B

- **MSDS discloses information elements required by the CPR .**

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Recommended restriction of use:** professional/industrial use only

- **Contact:** Orbeco-Hellige, Inc., Quality Assurance Dept., Phone: 941-756-6410

- **Sources**

Data arise from manufacturers' data sheets, reference works and literature.

GESTIS-Stoffdatenbank

IUCLID (International Uniform Chemical Information Database)