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Item #0395-0123

**ASCORBIC ACID, USP**

**DATE ISSUED: 01/15/01**

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**SECTION I**

**PRODUCT IDENTIFICATION**  
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**PRODUCT NAME:** Ascorbic Acid USP  
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**SECTION II**

**COMPOSITION, INFORMATION ON INGREDIENTS**  
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**CHEMICAL NAME:** 3-oxo-1-gulonic acid-γ-lactone

**COMMON SYNONYMS:** (L+) Ascorbic Acid, Vitamin C

**CHEMICAL CHARACTERIZATION:** C<sub>6</sub>H<sub>8</sub>O<sub>5</sub>

**CHEMICAL FAMILY:** Vitamin C

**EINECS No.:** 200-066-2

**CAS NO.:** 50-81-7

**HAZARDOUS IMPURITIES:** None

**PRECAUTIONARY LABELING**

**Degree of Hazard**

4 - Extreme	Flammability	1
3 - High	Health	2
2 - Moderate	Reactivity	0
1 - Slight	Special Hazard	0
0 - Insignificant		

  
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**SECTION III**

**HAZARDS IDENTIFICATION**  
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**EMERGENCY OVERVIEW:**

**Appearance & Odor:** Fine white to yellowish crystalline powder with slight acidic odor.

**Most Important Hazard:** Irritating to eyes, dust explosion hazard.

**POTENTIAL HEALTH EFFECTS**

**Routes of Exposure:** Inhalation, ingestion, skin contact, eye contact.

**Target Organs:** Respiratory system, gastrointestinal system, renal system.

## ASCORBIC ACID, USP

### ACUTE EFFECTS:

**General:** May cause mucous membrane irritation (inflammation). May cause gastrointestinal effects such as nausea, vomiting, diarrhea, constipation, cramps, and loss of appetite.

**Skin:** May cause skin irritation.

**Eye:** May cause eye irritation.

### CHRONIC EFFECTS

**General:** May increase blood calcium levels. May cause kidney stones. May cause bladder stones.

**Carcinogenicity:** Not listed by NTP, IARC, or OSHA.

**Conditions Aggravated:** Hemochromatosis, thalassemia, sideroblastic or sickle cell anemia.

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## SECTION IV

### FIRST AID MEASURES

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**Inhalation:** Remove to fresh air. Get medical attention. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen by qualified personnel.

**Skin Contact:** Remove contaminated clothing and shoes. Wash skin with soap and plenty of water. If irritation occurs or persists, get medical attention. Wash clothing and shoes before reuse.

**Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes while lifting lids. If irritation occurs or persists, get medical attention.

**Ingestion:** If conscious give two glasses of water or milk, induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

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## SECTION V

### FIRE FIGHTING MEASURES

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**Flash Point:** NA    **Flammable Limits:** Unknown    **Auto Ignition Temperature:** 370-375°C

**General Hazards:** Material is combustible. High concentrations of dust in air may form explosive mixture.

**Extinguishing Media:** Water, Carbon Dioxide, Dry Chemical, and foam.

**Hazardous Decomposition Products:** Carbon oxides

## ASCORBIC ACID, USP

**Special Protective Equipment:** Use personal protective equipment including self-contained breathing apparatus when fighting fire in enclosed area.

**Specific Methods:** Standard procedure for chemical fires.

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### SECTION VI ACCIDENTAL RELEASE MEASURES

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**Personal Precautions:** Use personal protective equipment. Avoid dust formation.

**Environmental precautions:** Dispose according to federal, state and local authorities.

**Methods for Cleaning Up:** Sweep up and shovel. After cleaning, flush away traces with water.

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### SECTION VII HANDLING AND STORAGE

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#### HANDLING

**Technical Measures/Precautions:** Take precautionary measures against static discharges. Avoid dust formation.

**Safe handling advice:** Use personal protective equipment.

#### STORAGE

**Technical Measures/Storage Conditions:** Protect from light. Keep tightly closed in a dry and cool place.

**Incompatible Products:** Incompatible with strong bases and oxidizing agents.

**Packaging Material:** Store in original container.

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### SECTION VIII EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Engineering Measures:** Provide general dilute ventilation.

**Exposure Limit(s):** (ACGIH, OSHA, NIOSH) None established.

**Respiratory Protection:** NIOSH approved dust respirator.

**Hand Protection:** gloves

**Eye Protection:** Safety Glasses

**Skin & Body Protection:** Lightweight protective clothing.

## ASCORBIC ACID, USP

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

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### SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

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**Form:** Powder. **Color:** colorless/white/slightly yellow.

**Odor:** None to slightly acidic. **pH:** 2.2 – 2.5 @ 10% aqueous solution.

**Vapor Pressure:** Unknown **Vapor Density:** Unknown

**Boiling Point:** NA **Evaporation Rate:** Unknown

**Melting Point/Range:** 190°C **Decomposition Temperature:** 190°C

**Relative Density:** 1.65 g/cm<sup>3</sup> **Bulk Density:** 700 – 800 kg/m<sup>3</sup>

**Explosive Properties:** Unknown **Water Solubility:** g/kg 242 @ 20°C

**Coefficient of water/oil distribution:** Unknown

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### SECTION X STABILITY AND REACTIVITY

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**Stability:** stable

**Materials to Avoid:** Incompatible with strong bases & oxidizing agents.

**Hazardous Polymerization:** Does not occur.

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### SECTION XI TOXICOLOGICAL INFORMATION

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**Acute Toxicity:** LD<sub>50</sub>/oral/rat = >10,000 mg/kg **Local Effects:** No data available.

**Chronic Toxicity:** No data available.

**Human Experience:** May cause sensitization of susceptible persons by skin contact.

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### SECTION XII ECOLOGICAL INFORMATION

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**Mobility:** Completely soluble

Persistence & degradability

**Chemical Oxygen Demand:** 70% of BOD

## ASCORBIC ACID, USP

Readily biodegradable

**Ecotoxicity Effects:** Toxicity to fish EC/LC0 = 1000 mg/l  
Toxicity to bacterial EC/LC10 = 90 mg/l

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### SECTION XIII DISPOSAL CONSIDERATIONS

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**Waste from Residues/Unused Products:** Any disposal practice must be in compliance with local, state and federal laws and regulations (contact local or state environmental agency for specific rules).

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### SECTION XIV TRANSPORTATION INFORMATION

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Not regulated by DOT.

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### SECTION XV REGULATORY INFORMATION

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Ascorbic acid is generally regarded as safe (GRAS) by USA FDA, 21 CFR 182.3013; 29 CFR 182.5013

**Carcinogen Status (components present at 0.1% or more):** None

Listed European Food Additive E330  
The material is listed on the TSCA Inventory List

**CERCLA (Comprehensive Response Compensation, and Liability Act):** Not hazardous

**SARA Title III (Superfund Amendments & Reauthorization Bill):** Not hazardous

#### **Foreign Inventory Status**

Canadian DSL (Domestic Substance List)