

Material Safety Data Sheet\*  
 May be used to comply with  
 OSHA's Hazard Communication Standard,  
 29 CFR 1910.1200. Standard must be  
consulted for specific requirements

U. S. Department of Labor  
 Occupational Safety & Health  
 Administration  
 (Non-Mandatory Form)  
 OSM no. 1218-0072

Identity (as used on Label & List)

Note: Blank spaces are not permitted.  
 If any item is not applicable,  
 or no information is applicable  
 the space must be marked to  
 indicate that.

CITRIC ACID

**Section I**

Distributor's Name  
 Duraclean International, Inc.

Emergency Telephone Number:  
 847-704-7100

Address (Number, Street)  
 220 Campus Drive

Telephone Number for Information:  
 847-704-7100

Address (city, state & zip)  
 Arlington Heights, IL 60004

Date Prepared: February 4, 2011

Manufacturer's Name:  
 Ashland Chemical Inc.  
 Columbus, Ohio 43216  
 24-Hour Emergency telephone  
 1-800-274-5263

Signature of Preparer:  
 Henry Hakewill, Jr.  
 \*Based upon information provided by

**Section II - Hazardous Ingredients / Identity Information**

| Hazard<br>(Specific Chemical Identity) | Components<br>(Specific<br>Common Name(s)<br>CAS No. | Chemical<br>OSHA PEL | Identity:<br>ACGIH TLV |
|--|--|----------------------|------------------------|
| Citric Acid, 100%                      | 77-92-9  | Not estab.           | Not estab.             |

**Section III - Physical / Chemical Characteristics**

|                         |     |   |     |
|-------------------------|-----|---|-----|
| Boiling Point ( F)      | N/A | Specific Gravity (H2O=1)                | N/A |
| Vapor Pressure (mmHg)   | N/A | Melting Point                           | 153 |
| Vapor Density (AIR = 1) | N/A | Evaporation Rate<br>(Butyl Acetate = 1) | N/A |

Solubility in Water  
 133 grams per 100 grams cold water.

pH:

Appearance and Odor  
 White crystals, acrid odor.

**Section IV - Fire and Explosion Hazard Data**

| Flash Point (Method Used) | Flammable Limits | LEL | UEL |
|---------------------------|------------------|-----|-----|
| N/A                       | N/A              |     |     |

Extinguishing Media  
 Water fog or carbon dioxide or dry chemical.

**Section IV - Fire and Explosion Hazard Data cont.**

**Special Fire fighting Procedures**

Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode.

**Unusual Fire and Explosion Hazards**

N/A

**Section V - Reactivity Data**

Stability            Unstable -                    Conditions to Avoid

                      Stable -                    X                    N/A

**Incompatibility (Materials to Avoid)**

Strong alkalis & reactive metals such as aluminum & magnesium.

**Hazardous Decomposition or Byproducts**

Carbon dioxide, carbon monoxide, various hydrocarbons, etc.

Hazardous            May Occur -                    Conditions to Avoid  
Polymerization

                      Will not occur -            X                    N/A

**Section VI - Health Hazard Data**

Route(s) of Entry:    Eyes? Yes    Inhalation? Yes    Skin? Yes    Ingestion? Yes

**Health Hazards (Acute and Chronic)**

Eye exposure to liquid or vapor causes acute irritation. Contact with skin may cause acute irritation. Inhalation of dust can cause irritation of nasal & respiratory passages. Swallowing may cause gastrointestinal irritation.

Carcinogenicity:            NPT?                    IARC Monographs?            OSHA Regulated?  
                                  No                                    No                                    No

**Signs & Symptoms of Exposure**

Contact with eyes may result in stinging, tearing, redness & swelling. Exposure to citric acid dust may cause breathing difficulties.

**Medical Conditions Generally Aggravated by Exposure**

Skin sensitivity & breathing problems.

**Emergency and First Aid Procedures**

**EYES:** flush with large amounts of water, lifting upper & lower lids occasionally & get medical attention. **SKIN:** remove contaminated clothing & thoroughly wash exposed skin with soap & warm water. Launder contaminated clothing before reuse. **INHALATION:** remove patient to fresh air. **INGESTION:** immediately drink two glasses of water & induce vomiting either by giving IPECAC syrup or by placing finger at back of throat. Never give anything by mouth to an unconscious person. Get prompt medical attention.

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**Section VII - Precautions for Safe Handling and Use**

**Steps to be Taken in Case Material is Released or Spilled**

SMALL spill: sweep up material for disposal or recovery. LARGE spill: shovel material into containers & then thoroughly sweep area of spill to clean up residual material.

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**Waste Disposal Method**

Dispose of in an approved waste disposal site in accordance with all applicable local, state & federal regulations.

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**Precautions to be Taken in Handling and Storing**

Store in a cool, dry area. Use with good ventilation to minimize breathing dust or vapors. Wear protective gloves & goggles when handling or transferring solutions of citric acid.

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**Section VIII - Control Measures**

**Respiratory Protection (Specify Type)**

If needed, use NIOSH/MSHA approved dust respirator.

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|             |   |          |     |
|-------------|---|----------|-----|
| Ventilation | Local Exhaust: Natural ventilation is adequate for normal use.                          | Special: | N/A |
|             | Mechanical (General)<br>Use exhaust ventilation if working in a confined or dusty area. | Other:   | N/A |

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**Protective Gloves:**

To prevent contact with skin, wear neoprene, nitrile rubber or polyvinyl chloride gloves.

**Eye Protection:**

Wear chemical splash goggles to prevent eye contact.

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**Other Protective Clothing or Equipment**

Wear normal work clothing that covers arms & legs.

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**Work/Hygienic Practices**

After handling citric acid or a solution of it, wash hands thoroughly with soap & water before eating, smoking or using restroom. KEEP OUT OF REACH OF CHILDREN.

Material Safety Data Sheet

Page 4

CITRIC ACID

All terms and abbreviations have been defined in various government publications, or are standard chemical terms used by IUPAC.

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