MATERIAL SAFETY DATA SHEET **Issue Date:** October 12, 2001

IDENTITY (As used on label and list)
Citric Acid Anhydrous USP/FCC

Section I

Manufacturers Name
Archer Daniels Midland Co
Address
P.O. Box 1470
Decatur Illinois 62525

Emergency Telephone number
910-457-5011
Telephone Number for Information
217-451-7418

Section II - Hazardous Ingredients/ Identity Information

Hazardous Components (Chemical Identity; Common Name)	Hazard Data OSHA PEL
Citric Acid, 2-Hydroxy-1,2,3-propanetricarboxylic acid Cas No. 77-92-9 $C_6H_8O_7$ orl-rat LD_{50}11,700 mg/kg dermal acute 500mg/24hr moderate Eye 750 mg/24hr severe	8-hr TWA for nuisance particulate 15 mg/m³ (total dust) 5 mg/m³ (resp. fract.) **ACGIH TLV** TWA: 10mg/m³ (nuisance particulate)

Section III - Physical/Chemical Characteristics

Boiling Point
Decomposes

Specific Gravity (H20 = 1)
1.665

Vapor Pressure (mm Hg)
Not applicable - solid

Melting Point
153°C

Vapor Density (Air = 1)
Not applicable

Evaporation Rate (Butyl Acetate = 1)
>1

Solubility in water
Greater than 50%

Appearance and Odor
White odorless powder and/or granules

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)
Ignition temp. 1000 - 1020°C
Opt. 65 g/cuft

Flammable Limits LEL UEL
Min. 8 g/cuft 0.28 2.29 kg/m³

Extinguishing Media
Water, carbon dioxide, foam, powder extinguisher.

Special Fire Fighting Procedures
Fire fighters wear protective clothing and NIOSH approved respirator.

Unusual Fire and Explosion Hazards
None - At optimum air concentration Bureau of Mines Relative: Explosive rating = Weak

HMIS rating
Health, 1, Flammability, 1, Reactivity, 0

Incompatibility (*Materials to Avoid*)
Metal nitrates, carbonate, bicarbonates and strong oxidizers
Citric acid corrodes copper, zinc, aluminum and their alloys

Hazardous Decomposition or Byproducts
None Known

Hazardous polymerization **May Occur** **Will Not Occur** **Conditions to Avoid**
Will not occur Avoid generating dust

Section VI - Health Hazard Data

Routes of Entry: **Inhalation** **Skin** **Ingestion**
Skin contact, Ingestion, Inhalation of mist.

Health Hazards (*Acute and Chronic*)
Prolonged contact with the product may cause irritation.

Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
No	No	No	No

Signs and Symptoms of Exposure
May be slight eye irritant, long-term exposure to skin could be a mild irritant.

Medical Conditions Generally Aggravated by Exposure
No information available.

Emergency and First Aid Procedures
Eyes-immediately flush with plenty of water for 15 minutes. Call a physician.
Skin-wash area with water, remove contaminated clothing and launder before reuse.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case of Material is Released or Spilled
Recover by vacuum or broom and shovel. Flush area with water to remove final traces.

Waste Disposal Method
Conform to applicable federal,state and local regulations.
Landfill or neutralize and flush to drain. Material is biodegradable in waste treatment facility.

Precautions to Be Taken in Handling and Storing
Store in a dry area.

Other Precautions
Aqueous solutions of Citric Acid can, if in contact with reactive metal (iron, zinc, aluminum) form hydrogen which r
form explosive mixtures.

Section VIII - Control Measures

Respiratory Protection (*Specify Type*)
NIOSH approved chemical respirator with dust and mist filter while handling crystalline material and concentra
solutions.

Ventilation **Local Exhaust** **Mechanical(*General*)** **Special** **Other**
Local exhaust sufficient to control dust.

Protective Gloves
Standard work gloves

Eye Protection
Safety Glasses

Other Protective Clothing or Equipment
None