

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

**Product Name:**  
CitruClean™

**Revision Number:**  
4.0

**Synonyms:**  
Citric Acid Anhydrous USP  
2-hydroxy-1,2,3-propanetricarboxylic acid

**Use of the Substance / Preparation:**  
Acid rinse, decalcification, and biofilm removal for hemodialysis machines.

**Company Name:**  
Di-Chem, Inc.  
12297 Ensign Ave N  
Champlin, MN 55316  
763-422-8311

**Emergency response telephone number:**  
CHEMTREC (US): 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Emergency Overview:**

Warning. Irritating to eyes. Corrosive to metals (as aqueous solution). Product dust may cause mild, mechanical irritation.

**Appearance:**  
Powder / Granular

**Physical State:**  
White Solid

**Odor:**  
Odorless

**GHS Classification:**

Serious Eye Damage / Eye Irritation

Category 2

Hazards Not Otherwise Classified

None

**GHS Label Elements:**

Signal Word:

Warning

GHS Hazard Pictogram(s):



Hazard Statement(s):

H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

Precautionary Statement(s):

P261 Avoid breathing dust.  
P264 Wash exposed skin thoroughly after handling.  
P351 If in eyes: Rinse cautiously with water for several minutes.  
P313 If eye irritation persists: Get medical advice.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Molecular Formula:	CAS-No:	Weight %:
Citric Acid	C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>	77-92-9	99-100

### 4. FIRST AID MEASURES

<b>Eye Contact:</b>	Immediately flush with plenty of water. If symptoms persist, call a physician.
<b>Skin Contact:</b>	Wash off exposed area with soap and plenty of water. If skin irritation persists, call a physician.
<b>Ingestion:</b>	Never give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water. If symptoms persist, call a physician.
<b>Inhalation:</b>	Move to fresh air. If symptoms persist, call a physician.
<b>Note to Physicians:</b>	Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Flammable Properties:**

Not Flammable. Avoid dust formation.

**Extinguishing Media:**

Dry chemical; Carbon dioxide (CO<sub>2</sub>); Water spray; Foam


**Unsuitable Extinguishing Media:**

No information available

**Protective Equipment and Precautions for Firefighters:**

In the event of a fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

<b>Health</b>	1	<b>Flammability</b>	1	
<b>Stability and Reactivity</b>	0	<b>Physical hazard</b>	None known	

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Avoid contact with the skin and the eyes. Use personal protective equipment.
<b>Environmental Precautions:</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Clean up:</b>	Clean up and transfer to properly labeled containers. Avoid dust formation. Keep in suitable, closed containers for disposal. Aqueous spillage should be soaked up with inert absorbent material. For disposal information see section 13.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Use in areas provided with appropriate ventilation. Avoid dust formation.
<b>Storage:</b>	Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from incompatible substances.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### **Occupational Exposure Limits:**

This product contains no substances with occupational exposure limit values.

OSHA - Permissible exposure limit (PEL): Not established

ACGIH - Threshold limit value (TLV): Not established

### **General Hygiene Considerations:**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### **Engineering Controls:**

Adequate ventilation. Eyewash stations.

### **Personal Protective Equipment (PPE)**

<b>Eye/Face Protection:</b>	Safety glasses or goggles.
<b>Skin and Body Protection:</b>	If irritation is experienced wear gloves and suitable protective clothing to avoid skin contact.
<b>Respiratory Protection:</b>	If irritation is experienced wear a NIOSH-approved mask/respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White
Physical State	Solid: Powder / Granular
Odor	Odorless
Odor Threshold	Not applicable
pH	Not available
Dissociation Constants (pKa)	Not available
Flash Point	Not available
Autoignition Temperature	Not available
Boiling point	Not available
Melting/Freezing Point	Not available
Decomposition temperature	Not available
Oxidizing Properties	Not oxidizing
Flammability Limits in Air	Not flammable
Explosion Limits	Not explosive
Solubility(ies)	
Water Solubility	590g/l at 20°C
Relative Density	Not available
Bulk Density	Not available
Explosive Properties	Not explosive

## 10. STABILITY AND REACTIVITY

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

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

**Incompatible Materials:** Metal nitrates. 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>)

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

## 11. TOXICOLOGICAL INFORMATION

### Product Information:

Acute Toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity. The following values are calculated based on chapter 3.1 of the GHS document.

Chemical Name	Oral LD <sub>50</sub> :	Dermal LD <sub>50</sub> :	LC <sub>50</sub> (Lethal Concentration):
Citric acid	11700 mg/kg (Rat)	>2000 mg/kg bw Rat	

### Chronic Toxicity:

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** Not classified for aquatic toxicity. Contains no substances known to be hazardous to the environment. Contains no substances known to be not degradable in wastewater treatment plants.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia (Water flea)
Citric acid	NOEC (8d): 425mg/l	LC50 (48h): 440mg/L (Leuciscus idus)	EC50 (24h): 1535mg/L

**Persistence/Degradability:** Readily biodegradable. Inherently biodegradable. 97% and 100% biodegradability in 28d and 19d, respectively (protocols OECD 301E and OECD 301A, respectively).

**Mobility:** Soluble in water.

**Bioaccumulation:** Substance not considered to be persistent, bioaccumulating nor toxic (PBT).

## 13. DISPOSAL CONSIDERATIONS

**Waste from Residues/Unused Products:** Disposal should be in accordance with applicable regional, national and local laws and regulations.

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

## 14. TRANSPORT INFORMATION

**DOT** – Not Regulated  
**TDG** – Not Regulated  
**MEX** – Not Regulated  
**ICAO** – Not Regulated  
**IATA** – Not Regulated  
**IMDG/IMO** – Not Regulated

## 15. REGULATORY INFORMATION

### International Inventories:

All of the components in the product are on the following Inventory lists:

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	AICS	ENCS ISHL	CHINA	PICCS	KECL	NZLoC
Citric acid	Yes	Yes	No	201-069-1	No	Yes	(2)-1318	Yes	Yes	KE-20831	No

### US Federal Regulations:

#### CERCLA:

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**SARA 313:**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals, which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazardous Categorization:**

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**US State Regulations:**

California Proposition 65: This product does not contain any Proposition 65 chemicals.

No known components subject to "Right-To-Know" legislation in the following States: Massachusetts, Minnesota, New Jersey, Pennsylvania.

**16. OTHER INFORMATION**

**Prepared By:** Di-Chem, Inc.

**Original Preparation Date:** 14-May-2015

**Revision Date:** 05-October-2016

**Revision Number:** 4.0 - This version replaces all previous versions.

**HMIG Rating**

Health: 1

Flammability: 0

Reactivity: 0

Personal protection: A

**Disclaimer:**

Please be advised that it is your responsibility to inform your employees of the hazards of this substance, to advise them of what these properties mean and be sure they understand exposure information. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered as a warranty or quality specification.

**END OF SAFETY DATA SHEET**