SAFETY DATA SHEET

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME	**CITRIC ACID, USP (Monohydrate)**
PRODUCT CODE	**1184**
SUPPLIER	**MEDISCA Inc.** Tel.: 1.800.932.1039 | Fax.: 1.855.850.5855 661 Route 3, Unit C, Plattsburgh, NY, 12901 6641 N. Belt Line Road, Suite 130, Irving, TX, 75063 **MEDISCA Pharmaceutique Inc.** Tel.: 1.800.665.6334 | Fax.: 514.338.1693 4509 Rue Dobrin, St. Laurent, QC, H4R 2L8 21300 Gordon Way, Unit 153/158, Richmond, BC V6W 1M2 **MEDISCA Australia PTY LTD** Tel.: 1.300.786.392 | Fax.: 61.2.9700.9047 Unit 7, Heritage Business Park 5-9 Ricketty Street, Mascot, NSW 2020
EMERGENCY PHONE	CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 NSW Poisons Information Centre: 131 126 National Chemical Emergency Centre 44(0)1235239670
RECOMMENDED USES	Manufacturing and Compounding
RESTRICTIONS ON USE	Not applicable

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION	Eye Irritation (Category 2A) Skin Irritation (Category 2) Specific Target Organ Toxicity - Single Exposure (Category 3) - (respiratory tract)
PICTOGRAM	
SIGNAL WORD	Warning
HAZARD STATEMENT(S)	Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation.
ADVERSE PHYSIOCHEMICAL, HUMAN HEALTH AND ENVIRONMENTAL EFFECTS	Repeated exposure may cause skin dryness or cracking.
PRECAUTIONARY STATEMENT(S)	**Prevention**: Wash thoroughly after handling. Do not touch eyes. Wear eye protection/face protection, protective gloves. Avoid breathing dust, fume, gas, mist, vapors and spray. Use only outdoors or in a well-ventilated area.

Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical help. IF ON SKIN: Wash with plenty of water. If skin irritation occurs, get medical help. Take offcontaminated clothing and wash it before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/if you feel unwell.
Storage	Store in a well ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents and/or container in accordance with local regulations.

HMIS CLASSIFICATION

Health Hazard	2	**Flammability**	1
Reactivity	0	**Personal Protection**	E

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	1,2,3-Propanetricarboxylic acid, 2-hydroxy- monohydrate
BOTANICAL NAME	Not applicable
SYNONYM	Not applicable
CHEMICAL FORMULA	$C_6H_8O_7$ H_2O
CHEMICAL FAMILY	Linear alphatic derivative
CAS NUMBER	5949-29-1
ALTERNATE CAS NUMBER	Not applicable
MOLECULAR WEIGHT	210.137

COMPOSITION

CHEMICAL NAME	CAS NUMBER	EC NUMBER	% BY WEIGHT
CITRIC ACID (Monohydrate)	5949-29-1	691-328-9	100

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as health hazards and hence require reporting in this section.

SECTION 4: FIRST-AID MEASURES

IN CASE OF EYE CONTACT	Flush with copious amounts of water for 15 minutes, separating eyelids with fingers. If irritation persists seek medical aid.
IN CASE OF SKIN CONTACT	Wash with soap & water for 15 minutes. If irritation persists seek medical aid.
IF SWALLOWED	Call a physician. Wash out mouth with water. Do not induce vomiting without medical advice.
IF INHALED	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician
MEDICAL ATTENTION AND SPECIAL TREATMENT	Get emergency medical help.
SYMPTOMS CAUSED BY EXPOSURE	Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 5: FIREFIGHTING MEASURES

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL	May form explosive dust-air mixtures. Finely dispersed particles form explosive mixtures in air. Keep containers cool to prevent rupture and release of material. Prevent deposition of dust.
FLAMMABLE PROPERTIES	Combustible
HAZARDOUS COMBUSTION PRODUCTS	Under fire conditions, hazardous fumes will be present.
SUITABLE & UNSUITABLE EXTINGUISHING MEDIA	**Small fire:** dry chemical, CO_2 or water spray. **Large fire:** dry chemical, CO_2, alcohol resistant foam or water spray. Do not get water inside containers.
PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
METHODS & MATERIAL FOR CONTAINMENT	On land, sweep or shovel into suitable containers. Minimize generation of dust.
CLEANUP PROCEDURE	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Shut off all sources of ignition. Evacuate the area. If necessary, employ water fog to disperse the vapors. Absorb the matter with compatible vermiculite or other absorbing material. Place in a suitable container and retain for disposal. Ventilate and clean the affected area. Do not flush into sewerage system or to drains.
REFERENCE TO OTHER SECTIONS	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.
NOTES	The solution in water is a medium strong acid. Reacts with oxidants and bases. Corrodes metal.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	Do not inhale. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Store away from incompatible materials, in a well-ventilated area. Eliminate all sources of ignition. Store in accordance with local regulations. Do not store in unlabeled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination.
CONDITIONS FOR SAFE STORAGE	Store away from incompatible materials, in a well-ventilated area. Eliminate all sources of ignition. Store in accordance with local regulations. Do not store in unlabeled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination.
STORAGE CONDITIONS	Store in original container, tightly sealed, protected from direct sunlight and moisture.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

Chemical Name: CITRIC ACID (Anhydrous) CAS #: 77-92-9

	Country	Limit value-8 hours		Limit value-Short Term		IDLH	REL	Advisory	Notes
		ppm	mg/m³	ppm	mg/m³				
OSHA	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
ACGIH	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A

NIOSH	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
WEEL	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
HSIS	Australia	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
HSE	UK	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
GESTIS	Germany (AGS)	N/L	2(1)	N/L	4(1)(2)	N/L	N/L	N/L	(1) Inhalable fraction (2) 15 minutes average value
GESTIS	Germany (DFG)	N/L	2(1)	N/L	4(1)(2)	N/L	N/L	N/A	(1) Inhalable fraction (2) 15 minutes average value
GESTIS	Switzerland	N/L	2(1)	N/L	4(1)(2)	N/L	N/L	N/A	(1) Inhalable fraction (2) 15 minutes average value

N/L = Not listed ; N/A = Not Available
PELs are 8-hour TWAs = Limit value - Eight hours
Ceiling or Short-Term TWA = STEL = Limit value - Short term

EXPOSURE GUIDELINES	Consult local authorities for provincial or state exposure limits. Particulates not otherwise regulated, respirable fraction: 5 mg/m³
PERSONAL PROTECTIVE EQUIPMENT	**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by WHMIS or OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. **Skin:** Wear appropriate gloves to prevent skin exposure. **Clothing:** Wear appropriate protective clothing to minimize contact with skin. **Respirators:** Follow WHMIS or OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. **Thermal Hazards:** For products representing a thermal hazard, appropriate Personal Protective Equipment should be used.
SPECIFIC ENGINEERING CONTROLS	Adequate mechanical ventilation. Fumehood, eye wash station, and safety shower.
BIOLOGICAL MONITORING	Not available
CONTROL BANDING	Not available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Solid
DESCRIPTION	Colorless, translucent crystals, or white, granular to fine, crystalline powder. Efflorescent in dry air.
SOLUBILITY	Very soluble in water; freely soluble in alcohol; very slightly soluble in ether.
ODOR	Odorless
FLAMMABILITY	Combustible

AUTO-IGNITION TEMPERATURE	1010°C, 1850°F	**BOILING POINT**	>175°C, >347°F (decomposes)	**DECOMPOSITION TEMPERATURE**	> 170°C, > 338°F
EVAPORATION RATE	>1	**EXPLOSIVE LIMIT**	0.28 - 2.29 (vol% in air)	**FLASH POINT**	100°C, 212°F
log P (OCTANOL-WATER)	-1.72 (20°C)	**LOWER FLAMMABLE/ EXPLOSIVE LIMIT(S)**	8 gm/ft³	**MELTING/FREEZING POINT**	(135 - 153)°C, (275 - 307.4)°F
PARTICLE CHARACTERISTICS	Not available	**OXIDIZING PROPERTY**	Not available	**pH**	1.85 (5%)

RELATIVE DENSITY (WATER = 1)	1.542 g/cm³	**SPECIFIC GRAVITY**	1.665 (20°C)	**UPPER FLAMMABLE/ EXPLOSIVE LIMIT(S)**	65 gm/ft³
VAPOR DENSITY (AIR = 1)	Not available	**VAPOR PRESSURE**	< 0.0000001 kPa (25°C)	**VISCOSITY**	6.5 mPa.s (25°C) (dynamic)

The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY	Product dehydrates in dry air or when heated to 70 - 75°C.
CHEMICAL STABILITY	Stable under recommended storage conditions
INCOMPATIBLE MATERIALS	Strog bases. Strog oxidants
HAZARDOUS DECOMPOSITION PRODUCTS	Toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides and other gases may occur
HAZARDOUS POLYMERIZATION	Will not occur
POSSIBLITY OF HAZARDOUS REACTION	Not established
CONDITIONS TO AVOID	Moisture, sunlight and extreme temperatures. Take precautionary measures against static discharges.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY	Oral: Rat: LD50: (mg/kg): 11700 Dermal: Rat LD50: (mg/kg): > 5000 Inhalation: Rat: LC50: (mg/L/4hr): Not available	
SKIN CORROSION/IRRITATION	Causes severe skin burns and eye damage: pH: 1.85 (5%)	
SERIOUS EYE DAMAGE/EYE IRRITATION	Eye damage, category 1, implicit: pH: 1.85 (5%)	
RESPIRATORY SENSITIZATION	Due to lack of data the classification is not possible.	
SKIN SENSITIZATION	Based on available data, the classification criteria are not met. Sensitization: Local lymph node assay; Result: Non-sensitizing.; Species: Mouse; Organ: Skin	
GERM CELL MUTAGENICITY	Due to lack of data the classification is not possible.	
CARCINOGENICITY	**OSHA**	CITRIC ACID is not listed.
	NTP	CITRIC ACID is not listed.
	IARC	CITRIC ACID is not evaluated.
	California Proposition 65	This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.
ADDITIONAL CARCINOGENICITY INFORMATION	Due to lack of data the classification is not possible.	
REPRODUCTIVE TOXICITY	Based on available data, the classification criteria are not met.	
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	Respiratory tract irritation.	

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	Based on available data, the classification criteria are not met.
ASPIRATION HAZARDS	Based on available data, the classification criteria are not met.
SIGNS AND SYMPTOMS OF EXPOSURE	ROUTES OF EXPOSURE: Oral, Dermal, Inhalation, Eye contact EARLY ONSET SYMPTOMS RELATED TO EXPOSURE: Not available DELAYED HEALTH EFFECT FROM EXPOSURE: Teeth erosion. Reduced ionic calcium in plasma. Irregular heartbeat. Hypotension. Metabolic acidosis. Death. Symptoms related to the physical, chemical, and toxicological characteristics: Irritant effects. Rapid breathing. Convulsions

POTENTIAL HEALTH EFFECTS		
	Inhalation	May cause mucous membrane irritation with sore throat, coughing and shortness of breath.
	Ingestion	May cause acute gastrointestinal irritation with abdominal pain and sore throat. Long term oral overexposure may cause damage to tooth enamel. Ingestion of large amounts may cause nausea, vomiting and diarrhea.
	Skin	Causes irritation with discomfort, local redness, and possible swelling. Frequent or prolonged contact with the powder may irritate the skin and cause a skin rash (dermatitis).
	Eyes	Causes serious eye irritation. May cause irritation with redness, pain, possible eye burns, conjunctivitis, ulceration and permanent cloudiness.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY	EC50: 48 Hr: Crustacea: (mg/L): Not available LC50: 96 Hr: Fish (Goldfish): (mg/L): 440 - 706 EC50: 72 or 96 Hr: Algae (or other aqua plants): (mg/L): Not available
PERSISTENCE AND DEGRADABILITY	Chemical oxygen demand (COD) = 728 mg O2/g Biological oxygen demand/5 days (BOD) = 528 mg O2/g Readily biodegradable 98% after 2 days
BIOACCUMULATIVE POTENTIAL	Octanol/water partition coefficient as log Pow: -1.72 (20°C) The product is miscible in water and readily biodegradable in both water and soil. Accumulation is not expected
MOBILITY IN SOIL	Solubility in water: 59 g/100 ml (20°C) Henry's Law Constant: 8.33E-18 atm-m3/mole (25°C)
OTHER ADVERSE EFFECTS	Not available This product is not intended to be released into the environment

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHODS	Dispose of in accordance with federal / local laws and regulations. Avoid release into the environment.

SECTION 14: TRANSPORT INFORMATION

UN PROPER SHIPPING NAME	Not dangerous good
UN NUMBER	Not applicable
CLASS	Not applicable
PACKING GROUP	Not applicable

AUSTRALIA

HAZCHEM	Not Applicable

EU

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE	Not Listed
ENVIRONMENTAL HAZARDS	Not available
SPECIAL SHIPPING INFORMATION	Not applicable

SECTION 15: REGULATORY INFORMATION

UNITED STATES REGULATIONS

Chemical Name & CAS	CERCLA 40 CFR Part 302.4	SARA (Title III) 40 CFR Part 372.65	EPA 40 CFR Part 355 Appendix A	EPA 40 CFR Part 355 Appendix B	Right-to-know Pennsylvania	Right-to-know New Jersey	Right-to-know Massachusetts	California Prop 65
CITRIC ACID (Monohydrate) 5949-29-1	N/L	N/L	N/L	N/L	N/L	N/L	N/L	N/L

N/L = Not Listed; X = Listed

AUSTRALIAN REGULATIONS

Chemical Name & CAS	Poisons and Therapeutic Goods	Therapeutic Goods Act	Code of Practices - Illicit Drug Precursors	Poisons Standard	Work Health and Safety Regulations	Inventory of Industrial Chemcials
CITRIC ACID (Monohydrate) 5949-29-1	N/L	N/L	N/L	N/L	N/L	N/L

N/L = Not Listed

EU REGULATIONS

Chemical Name & CAS	REACH ANNEX XVII	REACH ANNEX XIV	EC 1005/2009	EC 850/2004	EC 1107/2009	PIC - Prior Informed Consent Regulation	EC 2012/18
CITRIC ACID (Monohydrate) 5949-29-1	N/L	N/L	N/L	N/L	N/L	N/L	N/L

N/L = Not Listed; X = Listed

Any EU regulation not listed above is not applicable to this product.

SUBJECT TO INTERNATIONAL AGREEMENT	Not applicable

SECTION 16: OTHER INFORMATION

REFERENCES	Available upon request

ABBREVIATIONS AND ACRONYMS

ACGIH - American Conference of Governmental Industrial Hygienists; **AIHA WEEL** – American Industrial Hygiene Association Workplace Environment Exposure Levels; **CAESAR** – Computer Assisted Evaluation of industrial chemical Substances According to Regulations; **CAS** – Chemical Abstract Service; **CERCLA** – Comprehensive Environmental Response, Compensation, and Liability Act; **EC50** – Effective Concentration, 50%; **EPA** – Environmental Protection Agency; **GHS** – Global Harmonized System; **HMIS** – Hazardous Materials Information System; **HSE** – Health and Safety Executive; **HSIS** – Hazardous Substances Information System; **IARC** – International Agency for Research on Cancer; **IDLH** - Immediately Dangerous to Life or Health; **IRFMN** – Ready Biodegradability Model; **ISS** – Instituto Superiore Sanità; **LC50** – Lethal Concentration, 50%; **LD50** – Lethal Dose, 50%; **MSHA** - Mine Safety and Health Administration; **NIOSH** – National Institute for Occupational Safety and Health; **NTP** – National Toxicology Program; **OSHA PEL** – Occupational Safety & Health Administration Permissible Exposure Limits; **QSAR** – Quantitative Structure-activity relationship; **REL** - Recommended Exposure Limit; **SARA** – Superfund Amendments and Reauthorization Act; **STEL** – Short Term Exposure Limit; **TLV** – Threshold Limit Value; **TWA** – Time Weighted Average; **WHMIS** – Workplace Hazardous Materials Information System

LAST REVISION 02/2023

SUPERSEDES 10/2020

For a list of changes to the SDS since the last version, please communicate with MEDISCA at www.medisca.com

DISCLAIMER

This document was created in accordance with OSHA, Safe Work Australia and WHMIS regulations. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. MEDISCA® shall not be held liable for any damage resulting from handling or from contact with the above product. Recipients of the product must take responsibility for observing existing laws and regulations.

SUPPLEMENTARY INFORMATION

For all country specific requirements not outlined on this Safety Data Sheet, please request Supplementary Page to this Safety Data Sheet.