SAFETY DATA SHEET (SDS)

Jacquard Products
Manufactured by Rupert, Gibbon & Spider, Inc.
P.O. Box 425 | Healdsburg, CA 95448
800.442.0455 | Fax: 707.433.4906
www.jacquardproducts.com

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SECTION 1 - CHEMICAL, PRODUCT & COMPANY INFORMATION

Product Name:	**CITRIC ACID**	
Product Number/Code:	**CHM1022 / CHM2022**	
Recommended Use:	Mild, powdered acid used to fix acid dyes and exhaust dye baths.	
Synonym(s):	Citric acid anhydrous	
Restrictions on use:	No uses advised against.	
Manufacturer:	Rupert, Gibbon & Spider, Inc. 1147 Healdsburg Ave. Healdsburg, CA 95448 1-800-442-0455 / 707-433-9577	
Emergency Number:	**ChemTel, Inc.** - Contract #MIS9128344	
	North America: **1-800-255-3924**	International: **1-813-248-0585**

SECTION 2 - HAZARD(S) IDENTIFICATION

Label Elements (According to Regulation (EC) No. 1272/2008 & 453/2010 (CLP)):	
Pictogram:	
Signal Words:	Warning
Hazard Statements:	H319 Causes serious eye irritation.
Precautionary Statements:	
Prevention:	P264 Wash hands thoroughly after handling. P280 Wear eye protection.
Response:	P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical advice/attention.
Label Elements (According to Directive 67/548/EEC & Directive 1999/45/EC):	
Hazard Symbol:	Xi - Irritant
Risk Phrase(s):	R36 Irritating to eye.
Safety Phrase(s):	S26 Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Other hazards:	Not known
Additional information:	Not known

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SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Chemical identity	**Content in percent (%)***	**CAS #**	**EC:**
Citric acid	99.5-100.5	77-92-9	201-069-1
Mixture: not applicable			

SECTION 4 - FIRST AID MEASURES

Description of first aid measures:	
In the event of skin contact:	Wash off immediately with plenty of water for at least 15 minutes. If irritation persists, call a physician.
In the event of eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
In the event of swallowing:	Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Consult a physician.
In the event of exposure by inhalation:	Move to fresh air.
Most important symptoms and effects, acute and delayed:	Serious eye damage/eye irritation. Eye Irrit. 2.
Indication of any immediate medical attention and special treatment needed:	Consult a physician.

SECTION 5 - FIREFIGHTING MEASURES

Suitable extinguishing media:	Use alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special hazards arising from the substance or mixture:	Oxides of carbon.
Advice for fire fighters:	In the vent of fire, wear self-contained breathing apparatus and wear suitable protective clothing. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Additional information:	Explosion hazard from the generation of dust.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment.
Methods and material for containment and clean up:	Sweep up or vacuum up spillage and collect in suitable container for disposal.
Environmental procedures:	Do not flush substance into surface water or sewage system.
Reference to other sections:	Section 8
Additional information:	Not known

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SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment.
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Environmental procedures:	Do not flush substance into surface water or sewage system.
Reference to other sections:	Section 8
Additional information:	Not known

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling:	Avoid contact with skin and eyes. Use only in well-ventilated areas. Do not breathe vapors/dust.
Conditions for safe storage including any incompatibilities:	Keep locked up or in an area accessible only to qualified staff. Store in a tightly closed original container in a dry, cool and well-ventilated place.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:		
Occupational exposure limits:	No values	
Exposure controls:	Minimize the risk of dust.	
PNECs and DNELs:	No true DNEL for systemic toxicity can be derived. Local effects irritation should be considered.	
PNEC/PEC - Environment:	Compartment:	PN:
	Aquatic PNEC aqua - freshwater (mg/l):	0.465
	PNEC aqua - marine water (mg/l):	0.0465
	PNEC freshwater - sediment (mg/kg d.w.):	3.52 (equivalent to 0.752 mg/kg wwt)
	The PNEC marine - sediment (mg/kg d.w.):	35.2 (equivalent to 7.52 mg/kg wwt)
	Terrestrial PNEC - soil (mg/kg d.w.):	34.2
	Sewage treatment plant PNEC STP (mg/l):	>1,050
	Atmospheric Compartment:	Not applicable
Appropriate engineering controls:	Provide adequate ventilation.	
Thermal hazards:	Not applicable	
Individual protection measures, such as personal protective equipment:		
Eye/face protection:	Safety glasses with side shields.	
Skin protection:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of workday.	
Hand protection:	Protective gloves must satisfy the specifications of EU Directive 89/686/EEC and EN 374.	
Hygiene measures:	Do not smoke in the work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. When using, do not eat, drink or smoke.	
Environmental exposure controls:	Do not allow to enter drains, sewers or watercourses.	
Respiratory protection:	Provide adequate ventilation. Wear respirator where dust level exceeds 10 mg/m^3.	

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

General information:	
Appearance and physical state:	Solid, crystalline
Color:	White
Type of Odor:	Odourless
Odor threshold:	Odourless
Important health, safety and environmental information:	
Initial Boiling Point and Boiling Range:	Decomposes before boiling
Melting Point/Freezing Point:	Approximately 153°C at 1,013 hPa
Flammability Classification:	Non-flammable
Flash Point:	Not known
Auto-ignition Temperature:	N/A
Decomposition Temperature:	Not known
Flammability Limits (lower/upper):	N/A
Evaporation rate:	N/A
Vapor Pressure:	N/A
Vapor Density (Air=1):	N/A
Octanol/Water Partition Coefficient (log Pow):	-0.1 to -1.7
Specific Gravity:	N/A
Bulk Density:	N/A
Solubility (Water):	750 g/l at 20°C
Solubility (other):	Soluble in alcohol
pH:	1.75 (100 g/l)
Viscosity:	N/A
Explosive Properties:	Not explosive
Oxidizing Properties:	Not oxidizing
Molecular Formula:	N/A
Molecular Weight:	N/A
Relative Density:	1.542 g/cm^3 at 20°C
Granulometry:	The fraction below 100 µm = 84.1%; the D50 of the fraction below 100 µm = at 31.99 µm.
Dissociation constant:	pKa: 3.13, 4.76 and 6.4 at 25°C

SECTION 10 - STABILITY AND REACTIVITY

Reactivity:	Reacts with alkaline.
Stability:	Stable under normal conditions.
Conditions to avoid:	Exposure to heat, sparks and open flame.
Incompatible materials:	Sodium nitrite, potassium
Hazardous decomposition products:	Oxides of carbon.

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SECTION 11 - TOXICOLOGICAL INFORMATION

Information on toxicological effects: Acute toxicity (list all possible routes of exposure)	
Acute Oral Toxicity:	LD50 (mouse): 5,050 mg/kg bw
Acute Dermal Toxicity:	LD50 (dermal): >1,845 mg/kg bw
Acute Inhalation Toxicity:	No data
Skin Corrosion/Irritation:	Mild skin irritant
Serious Eye Damage / Eye Irritation:	Irritating
Respiratory or Skin Sensitization:	Not a sensitizer
Germ Cell Mutagenicity:	Not a mutagen
Carcinogenicity:	Not a carcinogen
Reproductive Toxicity:	Not a reproductive toxin.
Specific Target Organ Toxicity - single exposure (STOT-se):	Not known
Specific Target Organ Toxicity - repeated exposure (STOT-re):	Not known
Aspiration Hazard:	Not known

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity:	
Acute/prolonged toxicity to fish:	LC50 (fish - 48 hr): 415 mg/l
Acute/prolonged toxicity to aquatic invertebrates:	LC50 (D. Magna - 24 hr): 1,460 mg/l
Acute/prolonged toxicity to aquatic plants:	Algae NOEC (8 d mat. (nominal) based on cell density): 408 mg/l
Persistence and degradability:	Biodegradable
Bioaccumulative potential:	Not expected to bioaccumulate
Mobility in soil:	Not applicable
Results of PBT and vPvB assessment (EC reg. 453/2010):	Not a PBT or vPvB
Other adverse effects:	Not known

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste treatment methods:	
Disposal:	Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority.
Additional information:	Not known

SECTION 14 - TRANSPORT INFORMATION

Land transport (ADR/RID):	Not subject to transport regulations.
Sea transport (IMDG):	Not subject to transport regulations.
Air transport (ICAO/IATA):	Not subject to transport regulations.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code.	Not known

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SECTION 15 - REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:	
Hazard categories	
EU regulations:	User to follow EU directives and regulations
Authorizations and/or restrictions on use:	Not applicable
National regulations:	User to follow national regulations.
US. California Proposition 65	No ingredient regulated by CA Prop 65 present.

SECTION 16 - OTHER INFORMATION

LEGEND:	
LTEL:	Long Term Exposure Limit
STEL:	Short Term Exposure Limit
STOT:	Specific Target Organ Toxicity
DNEL:	Derived No Effect Level
PNEC	Predicted No Effect Concentration
References:	Chemical Safety Report for citric acid and citrates Regulation (EC) No. 1272/2008 & 453/2010 (CLP) Directive (67/548/EEC & Directive 1999/45/EC
Risk Phrases & Safety Phrases:	R36: Irritating to eyes. S26: Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Hazard statement(s) and Precautionary statement(s):	H319: Causes serious eye irritation. P264: Wash hands thoroughly after handling. P280: Wear eye protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical advice/attention.
Training advice:	Ensure staff and workers receive adequate training with regular updates in the handling of chemicals.
Additional information:	Not known

Disclaimer:
The information contained in this SDS is based on data from sources considered to be reliable but Rupert, Gibbon & Spider, Inc. does not guarantee the accuracy or completeness thereof. Rupert, Gibbon & Spider, Inc. urges each customer or recipient of this SDS to study it carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology or fire and understand the data in this SDS.

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Abbreviations:	
ACGIH	American Conference of Governmental Industrial Hygienists
ADR	International carriage of Dangerous goods by Road
AICS	Australian Inventory of Chemical Substances
ATE	Acute Toxicity Estimate
BfR	Bundesinstitut für Risikobewertung recommendations for food contact materials
BCF	Bioconcentration Factor
BOD5	5-day Biochemical Oxygen Demand
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CLP	Classification, Labeling and Packaging regulation
COD	Chemical Oxygen Demand DOT Department of Transportation DSL Domestic Substances List
EINECS	European Inventory of Existing Chemical Substances
ECL	Existing Chemicals List (Korea)
ENCS	Existing and New Chemical Substances Inventory (Japan)
EN 689	Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy.
ERG	Emergency Response Guide
GHS	Globally Harmonized System
HMIS	Hazardous Materials Information System IARC International Agency for Research on Cancer IATA International Air Transport Association
ICAO	International Civil Aviation Organization IDLH Immediately Dangerous to Life and Health IMDG International Maritime Dangerous Goods
LD50	Lethal Dose to 50% of test animal population
MAK	Maximale Arbeitsplatz Konzentration
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent, Bioaccumulative and Toxic vPvB Very Persistent and Very Bioaccumulative PEL Permissible exposure limit
PICCS	Philippine Inventory of Commercial Chemical Substances
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation and Authorization of Chemical Substances
RID	International carriage of dangerous goods by Rail SARA Superfund Amendments and Reauthorization Act STEL Short Term Exposure Limit
SVHC	Substance of Very High Concern
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
VOC	Volatile Organic Compound
WGK	Wassergefahrdungsklasse (Water Hazard Class) WHMIS Workplace Hazardous Material Identification System