

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 06.11.2012

Revision: 06.11.2012

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name:** Citric acid - anhydrous

· **Article number:** 50-2000-50

· **CAS Number:**

77-92-9

· **EC number:**

201-069-1

· **Registration number** 01-2119457026-42-0000

· **Relevant identified uses of the substance or mixture and uses advised against**

Personal care products; Detergents and cleaning products; Paper industry; Construction products; Polymers and plastics; Oil industry; Textile industry; Paints and coatings; Photography products; Laboratory reagents; Water treatment; Treatment of metal surfaces; Agricultural applications; Medical devices; Industrial use as chemical intermediate; Industrial use of cleaning and maintenance products (Automatic process); Industrial use of cleaning and maintenance products (semi-automatic/manual); cleaning & polishing products; air care products; adhesives used in the tobacco industry; Formulation of citric acid into tobacco products; Formulation of corrosion inhibition products; lubricants containing citrate as a corrosion inhibitor; metal working fluids containing citrate as a corrosion inhibitor; soldering products containing citrate as a corrosion inhibitor; Passivation of metal surfaces; cement additive; laundry/dish washing products.

· **Sector of Use**

SU0 Other

SU1 Agriculture, forestry, fishery

SU2a Mining, (without offshore industries)

SU2b Offshore industries

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU5 Manufacture of textiles, leather, fur

SU6a Manufacture of wood and wood products

SU6b Manufacture of pulp, paper and paper products

SU8 Manufacture of bulk, large scale chemicals (including petroleum products)

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU11 Manufacture of rubber products

SU12 Manufacture of plastics products, including compounding and conversion

SU13 Manufacture of other non-metallic mineral products, e.g. plasters, cement

SU14 Manufacture of basic metals, including alloys

SU15 Manufacture of fabricated metal products, except machinery and equipment

SU16 Manufacture of computer, electronic and optical products, electrical equipment

SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment

SU18 Manufacture of furniture

SU19 Building and construction work

SU20 Health services

SU21 Consumer uses: Private households / general public / consumers

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

· **Product category**

PC0 Other

PC1 Adhesives, sealants

PC2 Adsorbents

PC3 Air care products

PC4 Anti-Freeze and de-icing products

PC7 Base metals and alloys

PC8 Biocidal products (e.g. Disinfectants, pest control)

PC9a Coatings and paints, thinners, paint removers

PC9b Fillers, putties, plasters, modelling clay

PC9c Finger paints

PC10: Building and construction preparations

PC12 Fertilizers

PC14 Metal surface treatment products, including galvanic and electroplating products

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- PC16 Heat transfer fluids
- PC17 Hydraulic fluids
- PC18 Ink and toners
- PC19 Intermediate
- PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
- PC21 Laboratory chemicals
- PC23 Leather tanning, dye, finishing, impregnation and care products
- PC24 Lubricants, greases, release products
- PC25 Metal working fluids
- PC26 Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
- PC27 Plant protection products
- PC28 Perfumes, fragrances
- PC30 Photo-chemicals
- PC31 Polishes and wax blends
- PC32 Polymer preparations and compounds
- PC34 Textile dyes, finishing and impregnating products; including bleaches and other processing aids
- PC35 Washing and cleaning products (including solvent based products)
- PC36 Water softeners
- PC37 Water treatment chemicals
- PC38 Welding and soldering products (with flux coatings or flux cores.), flux products
- PC39 Cosmetics, personal care products
- PC40 Extraction agents

· **Process category**

- PROC0: Other
- PROC1 Use in closed process, no likelihood of exposure
- PROC2 Use in closed, continuous process with occasional controlled exposure
- PROC3 Use in closed batch process (synthesis or formulation)
- PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
- PROC7 Industrial spraying
- PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
- PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC10 Roller application or brushing
- PROC11 Non industrial spraying
- PROC13 Treatment of articles by dipping and pouring
- PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation
- PROC15 Use as laboratory reagent
- PROC17 Lubrication at high energy conditions and in partly open process
- PROC18 Greasing at high energy conditions
- PROC19 Hand-mixing with intimate contact and only PPE available
- PROC20 Heat and pressure transfer fluids in dispersive, professional use but closed systems
- PROC21 Low energy manipulation of substances bound in materials and/or articles
- PROC22 Potentially closed processing operations with minerals/metals at elevated temperature - Industrial setting
- PROC23 Open processing and transfer operations with minerals/metals at elevated temperature
- PROC24 High (mechanical) energy work-up of substances bound in materials and/or articles
- PROC25 Other hot work operations with metals

· **Environmental release category**

- ERC1 Manufacture of substances
- ERC2 Formulation of preparations

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- ERC3 Formulation in materials
- ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
- ERC5 Industrial use resulting in inclusion into or onto a matrix
- ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC6b Industrial use of reactive processing aids
- ERC7 Industrial use of substances in closed systems
- ERC8a Wide dispersive indoor use of processing aids in open systems
- ERC8b Wide dispersive indoor use of reactive substances in open systems
- ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix
- ERC8d Wide dispersive outdoor use of processing aids in open systems
- ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix
- ERC9a Wide dispersive indoor use of substances in closed systems
- ERC9b Wide dispersive outdoor use of substances in closed systems
- ERC10a Wide dispersive outdoor use of long-life articles and materials with low release
- ERC10b Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)
- ERC11a Wide dispersive indoor use of long-life articles and materials with low release
- ERC11b Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)
- ERC12a Industrial processing of articles with abrasive techniques (low release)

· **Article category**

- AC4 Stone, plaster, cement, glass and ceramic articles
- AC5 Fabrics, textiles and apparel
- AC6 Leather articles
- AC8 Paper articles
- AC10 Rubber articles
- AC11 Wood articles
- AC12 Constructional articles
- AC35 Scented paper articles

· **Application of the substance / the preparation**

The substance is used primarily as a food additive (E330: food acid). It is also used in soaps and laundry detergents and in many industrial applications.

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

APT Chemicals International Limited
Sandy Lane Industrial Estate
Stourport-on-Severn
Worcestershire
DY13 9QB

Tel: 0044 1299 827699
Fax: 0044 1299 827696
e-mail: info@aptchemicals.com

· **Further information obtainable from:** Product safety department.

· **Emergency telephone number:** Tel: 0044 1299 827699 (not 24 hours)

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



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Eye Irrit. 2 H319 Causes serious eye irritation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

 Xi; Irritant

R36: Irritating to eyes.

· **Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms** GHS07

· **Signal word** Warning

· **Hazard statements**

H319 Causes serious eye irritation.

· **Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P260 Do not breathe dust.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P280 Wear eye/face 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.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

77-92-9 Citric acid

· **Identification number(s)**

· **EC number:** 201-069-1

4 First aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Immediately rinse with water.

· **After eye contact:**

Rinse opened eye for several minutes under running water. Then consult a doctor.

Check for and remove any contact lenses.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

If symptoms persist consult doctor.

· **Information for doctor:** Treat symptomatically and supportively.

· **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO₂, powder or water spray. Fight larger fires with water spray.
- **Special hazards arising from the substance or mixture**
Combustible.
Finely dispersed particles form explosive mixtures in air.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust.
Ensure adequate ventilation
- **Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
- **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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Packaging material: Polyethylene coated paper bags, Polyvinyl or Polyethylene/propylene big bags
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.

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- **PNECs**
 PNEC aqua (freshwater): 0.44 mg/L
 PNEC aqua (marine water): 0.044 mg/L
 PNEC STP: 1000 mg/L
 PNEC sediment (freshwater): 34.6 mg/kg sediment dw
 PNEC sediment (marine water): 3.46 mg/kg sediment dw
 PNEC soil: 33.1 mg/kg soil dw
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
 Select PPE appropriate for the operations taking place taking into account the product properties.
- **General protective and hygienic measures:**
 Immediately remove all soiled and contaminated clothing
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes.
 Avoid close or long term contact with the skin.
 Do not eat, drink, smoke or sniff while working.
 Do not breath dust
- **Respiratory protection:** Not required.
- **Protection of hands:**
 The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
 The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**
 Tightly sealed goggles
- **Body protection:** Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Solid
Colour:	White
Odour:	Odourless
- **pH-value (50 g/l) at 25 °C:** 1.8
- **Change in condition**

Melting point/Melting range:	153 °C
Boiling point/Boiling range:	n/a (decomp) °C
- **Flash point:** >100 °C
- **Flammability (solid, gaseous):** Product is not flammable.

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· Ignition temperature:	>250 °C
· Danger of explosion:	Product is not explosive. However, formation of explosive air/dust mixtures are possible.
· Explosion limits:	
Lower:	0.28 Vol %
Upper:	2.29 Vol %
· Density at 20 °C:	1.542 g/cm ³
· Bulk density at 20 °C:	900 kg/m ³
· Solubility in / Miscibility with water at 20 °C:	383 g/l
· Partition coefficient (n-octanol/water):	-1.64 log POW
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Dust explosion possible if in powder or granular form, mixed with air.
- **Possibility of hazardous reactions**
The substance decomposes on heating above 175 °C. The solution in water is a medium strong acid. Reacts with oxidants and bases. Attacks metal.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
Strong bases.
Strong oxidising agents.
Finely powdered metals.
Metal nitrates.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values relevant for classification:	
77-92-9 Citric acid	
Oral	LD50 >2000 mg/kg (mouse)
Dermal	LD50 >2000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant

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ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation and by ingestion.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

77-92-9 Citric acid

EC50	1535 mg/kg (daphnia)
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- **Persistence and degradability** Inherently biodegradable

- **Behaviour in environmental systems:**

- **Bioaccumulative potential** Product is not expected to bioaccumulate.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation**

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

- **European waste catalogue**

Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

- **Uncleaned packaging:**

- **Recommendation:**

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

- **UN-Number**

- **ADR, ADN, IMDG, IATA**

Void

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· UN proper shipping name · ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void
· Packing group · ADR, IMDG, IATA	Void
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	-

15 Regulatory information

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Product safety department.

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