1. Identification of the substance/mixture and of the company/undertaking
   Product identifier:
   - Product name: Citric acid, 1-hydrate
   - Product code (SDS NO): 1727E-3

   Details of the supplier of the safety data sheet
   - Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
   - Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
   - Division: Safety Management Dept. of Chemicals
   - Telephone number: +81-6-6946-8061
   - FAX: +81-6-6946-1607
   - e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification
   GHS classification and label elements of the product
   Classification of the substance or mixture
   - HEALTH HAZARDS
     - Skin corrosion/irritation: Category 2
     - Serious eye damage/eye irritation: Category 2A
   - (Note) GHS classification without description: Not classified/Classification not possible

   Label elements

   Signal word: Warning
   HAZARD STATEMENT
   - Causes skin irritation
   - Causes serious eye irritation

   PRECAUTIONARY STATEMENT
   Prevention
   - Wash contaminated parts thoroughly after handling.
   - Wear protective gloves.
   - Wear eye protection/face protection.
   Response
   - IF ON SKIN: Wash with plenty of soap and water.
   - IF skin irritation occurs: Get medical advice/attention.
   - Take off contaminated clothing and wash it before reuse.
   - 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 advice/attention.

3. Composition/information on ingredients
   Mixture/Substance selection:
   - Substance
     - Ingredient name: Citric acid, 1-hydrate
     - Content (%): 99 (min)
     - Chemical formula: C3H4(OH)(COOH)3・H2O
4. First-aid measures

Descriptions of first-aid measures

IF INHALED
Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)
Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.

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 advice/attention.

IF SWALLOWED
Rinse mouth.
Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture
Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters
Specific fire-fighting measures
Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters
Wear fire/flame resistant/retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures
Ventilate area until material pick up is complete.
Wear proper protective equipment.

Environmental precautions
Prevent spills from entering sewers, watercourses or low areas.
Avoid raising dust.

Methods and materials for containment and cleaning up
Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident
Collect spillage.
7. Handling and storage

Precautions for safe handling
Preventive measures
(Protective measures against fire and explosion)
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
(Exhaust/ventilator)
Exhaust/ventilator should be available.
(Safety treatments)
Avoid contact with skin.
Avoid contact with eyes.

Safety Measures
Wear protective gloves, protective clothing or face protection.
Wear eye protection/face protection.
When using do not eat, drink or smoke.

Any incompatibilities
See "10. Stability and Reactivity"

Advice on general occupational hygiene
Wash contaminated parts thoroughly after handling.
Take off contaminated clothing and wash it before reuse.

Storage
Conditions for safe storage
Keep container tightly closed.
Store in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling
Polyethylene

8. Exposure controls/personal protection

Control parameters
Exposure controls
Appropriate engineering controls
Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures
Respiratory protection
Wear respiratory protection.

Hand protection
Wear protective gloves.

Eye protection
Wear eye/face protection.

9. Physical and Chemical Properties

Information on basic physical and chemical properties
Physical state: Crystals or crystalline powder
Color: Colorless to white
Odor: Odorless
pH: about 1.8 (5% solution)
Boiling point or initial boiling point: (decomposes) 175°C
Boiling range data is not available.
Melting point/Freezing point: 135～153°C
Decomposition temperature data is not available.
Flammability (gases, liquids and solids) data is not available.
Flash point data is not available.
Auto-ignition temperature: 1010°C
Lower and upper explosion limit/flammability limit data is not available.
Vapor pressure data is not available.
Relative vapor density (Air=1) data is not available.
Density and/or relative density: 1.54g/cm³
Kinematic viscosity data is not available.
Solubility:
  Solubility in water: 67%
n-Octanol/water partition coefficient: log Pow=−1.72
No Particle characteristics data is not available.

10. Stability and Reactivity
Reactivity
Not available.
Chemical stability
Stable under normal storage/handling conditions.
Possibility of hazardous reactions
The solution in water is a weak acid. Attacks copper, zinc, aluminium and their alloys.
(ICSC 0704)
Conditions to avoid
Contact with fire source.
Incompatible materials
Not available.
Hazardous decomposition products
Carbon oxides

11. Toxicological Information
Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[Company proprietary data]
(Citric acid,1-hydrate)
mouse LD50=5400mg/kg
Irritant properties
Skin corrosion/irritation
[Company proprietary data]
(Citric acid,1-hydrate)
cat.2
Serious eye damage/irritation
[Company proprietary data]
(Citric acid,1-hydrate)
cat.2A
Allergenic and sensitizing effects data is not available.
Mutagenic effects data is not available.
Carcinogenic effects data is not available.
Reproductive toxicity data is not available.
STOT
STOT—single exposure data is not available.
STOT—repeated exposure data is not available.
Aspiration hazard data is not available.
Additional data

May cause lung disorders by massive inhalation of powdered substance.
- e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

12. Ecological Information

Ecotoxicity data is not available.

Water solubility
(Citric acid,1-hydrate)
59.2 g/100 ml (20°C) (ICSC, 1999)

Persistence and degradability data is not available.

Bioaccumulative potential
(Citric acid,1-hydrate)
log Pow=-1.72 (ICSC, 1999)

Mobility in soil
Mobility in soil data is not available.

13. Disposal considerations

Waste treatment methods
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

Not applicable to UN No., UN CLASS
Not applicable to IMDG Code
Not applicable to IATA Dangerous Goods Regulations

Environmental hazards
MARPOL Annex III – Prevention of pollution by harmful substances
Marine pollutants (yes/no) : no

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
TSCA
Citric acid,1-hydrate

Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

GHS classification and labelling
Skin Irrit. 2: H315 Causes skin irritation
Eye Irrit. 2A: H319 Causes serious eye irritation

Reference Book
Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN
General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2018).