

50% Citric Acid Solution

1. Designation of the Substance/Preparation and Company

Product Name	50% citric acid solution
Use	For heat disinfection and decalcification of the flow path of haemodialysis equipment after bicarbonate dialysis.
Manufacturer	MTN Neubrandenburg GmbH Gustav-Kirchhoff-Str. 2 17033 Neubrandenburg Germany
Telephone	+49 (0)395 58100-0
E-Mail	info@mtn-nb.de
Emergency Number	National Poison Inform. Centre Medical Toxicology Unit: +44 (171) 635 91 91 MTN emergency telephone: +49 (0) 171 52 47 312

2. Possible Risks

Classification in accordance with regulation (EC) no.1272/2008	Eye irritation, class 2, H319
Classification (67/548/EEC or 1999/45/EC)	Xi, R36
Identifying elements	
Labelling (regulation (EC) no.1272/2008)	Hazard pictograms: Caution Signal word: Caution
Hazard warnings:	H319: Causes serious eye irritation

3. Composition/Specifications of the Constituent Parts

Constituent Part	Citric acid monohydrate
CAS no.	77-92-9
EC no.	201-069-1
Content	50%
Symbols/R-Phrases	Xi, R36

4. First Aid Measures

After Eye Contact	With the uninjured eye protected, rinse the injured eye under running water for 10 min with the lids wide open. Provide medical attention. After exposure to concentrated solution, transport to the ophthalmologist as soon as possible whilst continuing to rinse the eye.
After Skin Contact	Rinse affected areas of skin under running water for 10 min. Remove wet clothing, ensuring self-protection whilst doing so. Do not attempt neutralisation. In case of prolonged irritation symptoms: provide medical attention.
After Swallowing	Drink water immediately. Maximum 2 tumblers. Do not induce vomiting. Consult a doctor.

5. Fire Fighting Measures

Citric acid solution is non-flammable. Tailor extinguishing measures to the surrounding fire.

Extinguishing agents that are unsuitable for safety reasons: Full water jet

Special hazards from the substance, its combustion products or resulting gases:

In case of fire, the following can arise: Carbon monoxide (CO), carbon dioxide (CO₂)

Special protective equipment for fire fighting:

In case of fire, wear self-contained breathing apparatus.

Further information:

Do not allow extinguishing water to enter the surface water or groundwater system.

6. Measures in Case of Accidental Release

Cleaning method dependent on quantity of liquid released.

Small quantities are to be diluted with water then neutralised. Large quantities are to be absorbed with sand, diatomaceous earth or expanded mica and their disposal effected in a sealed container. Treat the used adsorption material as chemical waste.

Wash wet surfaces immediately with plenty of water. Avoid contact with eyes. Use personal protective clothing. Do not allow the substance to enter the sewer system. A risk to drinking water is possible only in the event that very large quantities infiltrate the subsoil and waters.

7. Handling and Storage

Store tightly sealed in a dry, cool and well-ventilated place.

Protect from frost and excessive heat.

Mixed storage directions: Not compatible with bases and strong oxidants.

Other information about the storage conditions: Keep away from foodstuffs, drinks and feedstuffs.

8. Restriction and Monitoring of Exposure / Personal Protective Equipment

Eye Protection Required in the case of contact with citric acid solution; use frame goggles with side protection. Provide an eye shower.

Hand Protection Required in the case of contact with 50% citric acid solution.

Glove material	Layer thickness:	Time to perforation:
Natural rubber, natural latex	0.5 mm	≥ 8 h
Polychloroprene	0.5 mm	≥ 8 h

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resulting standard EN 374, for example KCL 740 Dermatril.

The times given are guide values. Increased temperatures from heated substances, body heat etc and a decreased layer thickness due to stretching may result in a reduction of the time to perforation.

This recommendation applies only for the product specified on the safety data sheet. In the case of a solution or mixing with other substances, contact a supplier of CE approved gloves.

Body protection: Long-sleeved work clothing.

Hygiene measures: Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke during use. Remove soiled or soaked clothing immediately.

9. Physical and Chemical Properties

Appearance	Colourless, liquid
Odour	Odourless
PH Value (20°C)	0.7 – 1.0
Solubility	Soluble in water
Density (g/cm³)	1.2

10. Stability and Reactivity

Citric acid has an acidic reaction and can react violently with alkaline substances.

Dangerous reactions are possible with metals, bases, oxidants and reductants.

Avoid citric acid coming into contact with sodium hypochloride solution, as toxic chlorine gas will form in this case.

To avoid thermal decomposition, do not overheat.

11. Toxicological Information

Health effects:

After Eye Contact	Serious irritations
After Inhalation	Respiratory irritation symptoms
After Skin Contact	Slight irritations
After Swallowing Large Quantities	Mucosal irritations (stomach), coughing, pain, vomiting blood

Other toxicological information: Substance found in the body under physiological conditions.

Acute toxicity

LD50 citric acid 3000 mg/kg (rat, oral)

Symptoms – in high doses: Mucosal irritation, pain, vomiting blood.

12. Environmental Specifications

Ecotoxic effects:

LC50 * 440 mg/kg (fish, 96 h)

BSB₂₀ * 526 mg/kg (5 d)

* (Determined for the anhydrous substance citric acid monohydrate)

Biodegradability: 98%/2d (easily biodegradable in accordance with OECD criteria).

No ecological problems are to be expected in the case of proper handling and use.

Do not allow 50% citric acid solution to enter the surface water. 50% citric acid solution is slightly hazardous to water.

13. Information on Disposal

Waste disposal is permitted only if reuse is not possible.

Dispose of large quantities as chemical waste or take them to the competent authority for waste disposal. Dispose of product residues in observance of waste directive 2008/98/EC as well as national and regional regulations.

Waste from organic chemical processes, waste from MFSU of greases, lubricants, soaps, detergents, disinfectants and body care products; waste not listed elsewhere in the index.

Disposal of uncleaned packaging:

Take empty containers to the local recycling, recovery or waste disposal facility. Empty contaminated packaging optimally; after appropriate cleaning, it can then be recycled. Disposal of packaging that cannot be cleaned should be carried out in the same way as disposal of the substance.

Recommended cleaning agent: Water

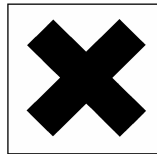
14. Transport Specifications

Not a hazardous substance under the transport regulations.

15. Legislation

In accordance with directives 67/548/EEC and 1999/45/EC

Symbol



Xi (Irritant)

R-Phrases

36 Irritant to eyes

16. Other Specifications

This safety data sheet has been compiled in accordance with regulation (EC) no. 1272/2008.

Eye Irritation

H319: Causes serious eye irritation

Water Hazard Classification

1

(Slightly hazardous to water; no. 57, VwVwS)

Labelling regulation (EC) no.1272/2008

Hazard Pictograms



ATTENTION

These specifications are based on current knowledge and serve to describe the product with respect to the applicable safety precautions. They do not represent a guarantee of the properties of the product described.