

# Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Citric Acid 50%

Revision date: 01.02.2019

Product code: 00056-0397

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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Citric Acid 50%

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### Use of the substance/mixture

Citric Acid 50%

Liquid concentrate for the cleaning, decalcification and heatdesinfection of haemodialyses machines

#### 1.3. Details of the supplier of the safety data sheet

Company name: B. Braun Avitum AG  
Street: Schwarzenberger Weg 73 - 79  
Place: D-34212 Melsungen  
Responsible Department: Zentrale Service-Bereiche / Logistik und Supply Chain  
Telephone: +49 (0) 5661 / 71-4422  
E-Mail: logistics.service@bbraun.com  
Responsible for the safety data sheet: sds@gbk-ingelheim.de

#### 1.4. Emergency telephone number:

INTERNATIONAL: +49 - (0) 6132 - 84463, GBK GmbH (24h - 7d/w - 365d/a)  
In England and Wales: NHS 111 In Scotland: NHS 24 - dial 111

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Regulation (EC) No. 1272/2008

Hazard categories:

Serious eye damage/eye irritation: Eye Irrit. 2

Hazard Statements:

Causes serious eye irritation.

#### 2.2. Label elements

##### Regulation (EC) No. 1272/2008

Signal word: Warning

Pictograms:



##### Hazard statements

H319 Causes serious eye irritation.

##### Precautionary statements

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.

#### 2.3. Other hazards

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Chemical characterization

Acidic concentrate with citric acid

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### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
77-92-9	Citric acid			50 %
	201-069-1		01-2119457026-42	
	Eye Irrit. 2; H319			

Full text of H and EUH statements: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

Remove contaminated soaked clothing immediately.

#### After inhalation

Move to fresh air in case of accidental inhalation of vapours or decomposition products.  
In the event of symptoms refer for medical treatment.

#### After contact with skin

Wash hands with water as a precaution.  
Consult a doctor if skin irritation persists.

#### After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Seek medical treatment by eye specialist.

#### After ingestion

Induce vomiting only upon the advice of a physician.  
Rinse out mouth and give plenty of water to drink.  
Summon a doctor immediately.

### 4.2. Most important symptoms and effects, both acute and delayed

Causes serious eye irritation.  
Inhalation of vapours may cause irritation of the respiratory system with very susceptible persons.  
Prolonged contact may cause skin irritation.  
Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Product does not burn, fire-extinguishing activities according to surrounding.

#### Unsuitable extinguishing media

Full water jet.

### 5.2. Special hazards arising from the substance or mixture

Fire may produce:  
carbon monoxide and carbon dioxide

### 5.3. Advice for firefighters

Use breathing apparatus with independent air supply.  
Protective suit.

#### Additional information

Cool containers at risk with water spray jet.  
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

## SECTION 6: Accidental release measures

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### **6.1. Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin, eyes and clothing.  
Ensure adequate ventilation.  
Use personal protective clothing.

### **6.2. Environmental precautions**

Do not discharge into the drains/surface waters/ground water.

### **6.3. Methods and material for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).  
Shovel into suitable container for disposal.

### **6.4. Reference to other sections**

Observe protective instructions (see Sections 7 and 8).  
Information for disposal see section 13.

## SECTION 7: Handling and storage

### **7.1. Precautions for safe handling**

#### **Advice on safe handling**

Keep container tightly closed.  
Use only in thoroughly ventilated areas.  
Avoid contact with skin, eyes and clothing.

#### **Advice on protection against fire and explosion**

No special protective measures against fire required.

### **7.2. Conditions for safe storage, including any incompatibilities**

#### **Requirements for storage rooms and vessels**

Keep container tightly closed in a dry, cool and well-ventilated place.

#### **Hints on joint storage**

Incompatible with strong bases and oxidizing agents.

#### **Further information on storage conditions**

Keep away from food, drink and animal feeding stuffs.

### **7.3. Specific end use(s)**

Citric Acid 50%  
Liquid concentrate for the cleaning, decalcification and heatdesinfection of haemodialyses machines

## SECTION 8: Exposure controls/personal protection

### **8.1. Control parameters**

#### **PNEC values**

CAS No	Substance	Value
77-92-9	Citric acid	
	Freshwater	0,44 mg/l
	Marine water	0,044 mg/l
	Freshwater sediment	7,52 mg/kg
	Marine sediment	0,752 mg/kg
	Soil	29,2 mg/kg

### **8.2. Exposure controls**

#### **Appropriate engineering controls**

Ensure adequate ventilation, especially in confined areas.

#### **Protective and hygiene measures**

Avoid contact with eyes and skin.  
Wash hands before breaks and immediately after handling the product.

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When using do not eat, drink or smoke.  
Remove and wash contaminated clothing before re-use.

### Eye/face protection

Safety goggles with side protection (EN 166).  
Eye wash bottle with pure water (EN 15154).

### Hand protection

Also suitable are gloves made of:  
Polychloropren - CR (0,5 mm): Breakthrough time: 8 h  
Nitrile rubber/nitrile latex - NBR (0,35 mm): Breakthrough time: 8 h  
Butyl rubber - Butyl (0,5 mm): Breakthrough time: 8 h  
Fluoro-rubber - FKM (0.4 mm): Breakthrough time: 8 h  
This recommendation refers exclusively to the chemical compatibility and the lab test conforming to EN 374 carried out under lab conditions.

Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

### Skin protection

Long sleeved clothing (DIN EN ISO 6530)

### Respiratory protection

No personal respiratory protective equipment normally required.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Colourless
Odour:	Odourless

		<b>Test method</b>
pH-Value:	approx. 1,5	Concentrate

### Changes in the physical state

Melting point:	153 °C
Initial boiling point and boiling range:	> 100 °C
Sublimation point:	n.a.
Flash point:	n.a.
Sustaining combustion:	Not sustaining combustion

### Flammability

Solid:	n.a.
Gas:	n.a.

### Explosive properties

The product is not explosive.

Lower explosion limits:	n.a.
Upper explosion limits:	n.a.
Ignition temperature:	n.a.

### Auto-ignition temperature

Solid:	n.a.
Gas:	n.a.

Decomposition temperature:	175 °C	Citric acid
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### Oxidizing properties

Not oxidising.

Vapour pressure:	n.d.
Density (at 20 °C):	approx. 1,19 g/cm <sup>3</sup>
Bulk density:	n.a.

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Water solubility: Completely miscible  
(at 20 °C)

### Solubility in other solvents

n.d.

Partition coefficient: - 1,57 Citric acid

Viscosity / dynamic: n.d.  
(at 25 °C)

Viscosity / kinematic: n.d.  
(at 25 °C)

Flow time: n.d.

Vapour density: n.d.  
(at 20 °C)

Evaporation rate: n.d.

Solvent separation test: 0 %

Solvent content: 0 %

### 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No decomposition if stored and applied as directed.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Reactions with strong alkalis and oxidizing agents.

### 10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

### 10.5. Incompatible materials

Bases.  
oxidizing agents

### 10.6. Hazardous decomposition products

Carbon monoxide and carbon dioxide

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity

Based on available data, the classification criteria are not met.  
No toxicological data available.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
77-92-9	Citric acid				
	oral	LD50 mg/kg	11700	Rat	
	dermal	LD50 mg/kg	> 2000	Rat	

#### Irritation and corrosivity

Causes serious eye irritation.  
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

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### Sensitising effects

Based on available data, the classification criteria are not met.

### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

### STOT-single exposure

Based on available data, the classification criteria are not met.

### STOT-repeated exposure

Based on available data, the classification criteria are not met.

### Aspiration hazard

Based on available data, the classification criteria are not met.

### Additional information on tests

Classification in compliance with the assessment procedure specified in the EC guidelines 1999/45/EC.

### Practical experience

### Other observations

Inhalation of vapours may cause irritation of the respiratory system with very susceptible persons.

Prolonged contact may cause skin irritation.

Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecological data are not available.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
77-92-9	Citric acid					
	Acute fish toxicity	LC50 440 mg/l	96 h	Leuciscus idus		OECD 203
	Acute crustacea toxicity	EC50 1535 mg/l	48 h	Daphnia magna		
	Algea toxicity	NOEC 425 mg/l	8 d	Scenedesmus quadricauda		

### 12.2. Persistence and degradability

Biodegradable (OECD): Readily biodegradable.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
77-92-9	Citric acid			
	OECD 301B	97 %		
	Readily biodegradable.			
	OECD 301E	100 %		
	Readily biodegradable.			

### 12.3. Bioaccumulative potential

No data available

### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
77-92-9	Citric acid	- 1,8 - -0,2

### 12.4. Mobility in soil

No data available

### 12.5. Results of PBT and vPvB assessment

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

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### **12.6. Other adverse effects**

Low hazard to waters.

A pH-change becomes possible in water.

### **Further information**

Do not discharge into surface waters/groundwater.

## SECTION 13: Disposal considerations

### **13.1. Waste treatment methods**

#### **Advice on disposal**

Can be incinerated, when in compliance with local regulations.

Can be landfilled after chemical and physical treatment, when in compliance with local regulations.

Where possible recycling is preferred to disposal.

#### **Waste disposal number of waste from residues/unused products**

070699 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics; wastes not otherwise specified

#### **Contaminated packaging**

Empty containers should be taken for local recycling, recovery or waste disposal.

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Packaging that cannot be cleaned should be disposed of like the product.

## SECTION 14: Transport information

### **Land transport (ADR/RID)**

#### **14.1. UN number:**

No dangerous good in sense of this transport regulation.

#### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

#### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

#### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

### **Inland waterways transport (ADN)**

#### **14.1. UN number:**

No dangerous good in sense of this transport regulation.

#### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

#### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

#### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

### **Marine transport (IMDG)**

#### **14.1. UN number:**

No dangerous good in sense of this transport regulation.

#### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

#### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

#### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

### **Air transport (ICAO-TI/IATA-DGR)**

#### **14.1. UN number:**

No dangerous good in sense of this transport regulation.

#### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

#### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

#### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

### **14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

### **14.6. Special precautions for user**

No dangerous good in sense of this transport regulation.

### **14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

No dangerous good in sense of this transport regulation.

### **Other applicable information**

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No hazardous material as defined by the transport regulations.

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

##### EU regulatory information

2004/42/EC (VOC): 0 %  
 Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

##### National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

#### 15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

### SECTION 16: Other information

#### Abbreviations and acronyms

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses  
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure  
 IMDG = International Maritime Code for Dangerous Goods  
 IATA/ICAO = International Air Transport Association / International Civil Aviation Organization  
 MARPOL = International Convention for the Prevention of Pollution from Ships  
 IBC-Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 REACH = Registration, Evaluation, Authorization and Restriction of Chemicals  
 CAS = Chemical Abstract Service  
 EN = European norm  
 ISO = International Organization for Standardization  
 DIN = Deutsche Industrie Norm  
 PBT = Persistent Bioaccumulative and Toxic  
 vPvB = Very Persistent and very Bio-accumulative

LD = Lethal dose  
 LC = Lethal concentration  
 EC = Effect concentration  
 IC = Median immobilisation concentration or median inhibitory concentration

#### Relevant H and EUH statements (number and full text)

H319 Causes serious eye irritation.

#### Further Information

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge.

The delivery specifications are contained in the corresponding product sheet.

This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

(n.a. = not applicable; n.d. = not determined)



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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*