

**Safety data sheet**  
according to Regulation (EC) No 1907/2006, Article 31

Printing date 23.10.2024

Version number 2

Revision: 23.10.2024

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

· **1.1 Product identifier**

· **Trade name:** Formic acid 99 % for LC-MS



· **Article number:** 45640

· **CAS Number:**

64-18-6

· **EC number:**

200-579-1

· **Index number:**

607-001-00-0

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

No further relevant information available.

· **Application of the substance / the mixture:** Laboratory chemicals

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

· **Manufacturer/Supplier:**

SERVA Electrophoresis GmbH

Carl-Benz-Str. 7

D-69115 Heidelberg

Tel.: +49 6221 13840-0

FAX: +49 6221 13840-10

msds.info@serva.de

· **Information department:** Product Safety Department Tel.: +49 6221 13840-35

· **1.4 Emergency telephone number:**

Emergency medical information in case of poisoning

Poison Information Centre Mainz-Tel.: +49 (0) 6131 19240

(Counselling in German and English)

**SECTION 2: Hazards identification**

· **2.1 Classification of the substance or mixture**

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



GHS02

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS06

Acute Tox. 3 H331 Toxic if inhaled.



GHS05

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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### · 2.2 Label elements

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

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

· **Hazard pictograms:** GHS02, GHS05, GHS06

· **Signal word:** Danger

#### · Hazard statements:

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H314 Causes severe skin burns and eye damage.

#### · Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### · Labelling of packages where the contents do not exceed 125 ml

· **Hazard pictograms** GHS02, GHS05, GHS06

· **Signal word** Danger

#### · Hazard statements

H331 Toxic if inhaled.

H314 Causes severe skin burns and eye damage.

#### · Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### · 2.3 Other hazards

#### · Results of PBT and vPvB assessment:

· **PBT:** PBT - Assessment not available.

· **vPvB:** vPvB - Assessment not available.

#### · Determination of endocrine-disrupting properties

Contains no endocrine disruptor (EDC) in a concentration of  $\geq 0.1\%$ .

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## SECTION 3: Composition/information on ingredients

### · 3.1 Substances

#### · CAS No. Description:

64-18-6 formic acid

#### · Identification number(s):

· **EC number:** 200-579-1

· **Index number:** 607-001-00-0

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## SECTION 4: First aid measures

### · 4.1 Description of first aid measures

· **General information:** Remove contaminated clothing.

· **After inhalation:** Supply fresh air or oxygen; call for doctor.

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- **After skin contact:**  
Wash off immediately with plenty of soap and water; rinse thoroughly; seek medical attention.
- **After eye contact:**  
Rinse opened eye for several minutes with running water. Remove contact lenses if possible and continue rinsing. Consult an ophthalmologist immediately.
- **After swallowing:**  
Rinse out mouth immediately. Drink plenty of water and provide fresh air. Call a doctor immediately.  
Do not induce vomiting!
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

#### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
*CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
- **5.2 Special hazards arising from the substance or mixture:**  
*Flammable substance, vapours are heavier than air and spread over the ground.  
Vapours may form flammable and explosive mixtures with air.  
In case of fire, formation of dangerous fire gases or vapours possible.  
In case of fire, the following can be formed, but not limited to:  
Carbon monoxide and carbon dioxide*
- **5.3 Advice for firefighters**
- **Protective equipment:** *Wear self-contained breathing apparatus.*
- **Additional information**  
*Collect contaminated fire fighting water separately. It must not enter the sewage system.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.*

\*

#### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
*Wear protective clothing.  
Ensure adequate ventilation  
Do not inhale vapours.  
Avoid contact with eyes and skin.*
- **6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*
- **6.3 Methods and material for containment and cleaning up**  
*Dispose contaminated material as waste according to section 13.  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).*
- **6.4 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.*

#### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling:**  
*Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.*
- **Information about protection against explosions and fires:** *Keep ignition sources away - Do not smoke.*
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** *Store only in the original receptacle.*

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- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:** Store containers tightly closed and dry.
- **7.3 Specific end use(s):** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### · 8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

**64-18-6 formic acid (80-100%)**

WEL	Long-term value: 9.6 mg/m <sup>3</sup> , 5 ppm
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- **Additional information:** The lists that were valid during the creation were used as basis.

#### · 8.2 Exposure controls

- **Appropriate engineering controls:** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment:**
- **General protective and hygienic measures:**
  - Keep away from foodstuffs, beverages and feed.
  - Store protective clothing separately.
  - Immediately remove all soiled and contaminated clothing
  - Do not inhale gases / fumes / aerosols.
  - Avoid contact with the eyes and skin.
  - Wash hands before breaks and at the end of work.
- **Breathing equipment:**
  - Short term filter device:
  - Filter E/P3
- **Hand protection:**
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  - 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.
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
  - Chloroprene rubber, CR
  - Natural rubber, NR
- **Eye/face protection:** Tightly sealed goggles.
- **Body protection:** Protective work clothing.

### SECTION 9: Physical and chemical properties

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

- **General Information:**
- **Physical state:** Fluid
- **Colour:** Colourless
- **Odour:** Pungent
- **Odour threshold:** not determined.
- **Melting point/freezing point:** 4 °C

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· <b>Boiling point or initial boiling point and boiling range:</b>	100.2 °C
· <b>Flammability:</b>	Flammable liquid and vapour according to GB CLP Regulation (EU) No. 1272/2008: Flam. Liq. 3 H226
· <b>Lower and upper explosion limit:</b>	
· <b>Lower:</b>	14 Vol %
· <b>Upper:</b>	33 Vol %
· <b>Flash point:</b>	48 °C
· <b>Auto-ignition temperature:</b>	520 °C
· <b>Decomposition temperature:</b>	No information available
· <b>pH:</b>	2.2
· <b>Viscosity:</b>	
· <b>Kinematic viscosity:</b>	No information available
· <b>Dynamic viscosity at 20 °C:</b>	1.8 mPas
· <b>Solubility:</b>	
· <b>Water:</b>	Not determined.
· <b>Partition coefficient n-octanol/water (log value):</b>	Not determined.
· <b>Vapour pressure at 20 °C:</b>	42.71 hPa
· <b>Vapour pressure at 50 °C:</b>	170 hPa
· <b>Density and/or relative density:</b>	
· <b>Density at 20 °C:</b>	1.27 g/cm <sup>3</sup>
· <b>Relative density:</b>	No information available

· <b>9.2 Other information</b>	
· <b>Appearance:</b>	
· <b>Form:</b>	Fluid
· <b>Important information on protection of health and environment, and on safety:</b>	
· <b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· <b>Molecular weight</b>	46.03 g/mol

### SECTION 10: Stability and reactivity

- **10.1 Reactivity:** No further relevant information available.
- **10.2 Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions:** Vapours may form flammable and explosive mixtures with air.
- **10.4 Conditions to avoid:** Avoid high temperatures, flames and sparks
- **10.5 Incompatible materials:**  
Avoid contact with:  
metals  
Oxidising agents, acids, bases
- **10.6 Hazardous decomposition products:** In case of fire: see section 5

### SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:**
- **Acute toxicity:**  
Harmful if swallowed.  
Toxic if inhaled.

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	1,100 mg/kg (rat)
Inhalative	LC50/4h	7.85 mg/l (rat)

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- **Skin corrosion/irritation:** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** 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.
- **11.2 Information on other hazards:**
- **Endocrine disrupting properties:**  
Does not contain an endocrine disruptor (EDC) in a concentration of  $\geq 0,1\%$

### SECTION 12: Ecological information

- **12.1 Toxicity:**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability:** No further relevant information available.
- **12.3 Bioaccumulative potential:** No further relevant information available.
- **12.4 Mobility in soil:** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment:**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6 Endocrine disrupting properties:** For information on endocrine disrupting properties see section 11.
- **12.7 Other adverse effects:**
- **Additional ecological information:**
- **General notes:**  
Do not allow product to reach ground water, water course or sewage system.  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Dispose of in accordance with official regulations.  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**  
Uncleaned packaging must be disposed of in the same way as the product in accordance with official regulations.

### SECTION 14: Transport information

- |                                       |                  |
|---------------------------------------|------------------|
| · <b>14.1 UN number or ID number</b>  |                  |
| · <b>ADR, IMDG, IATA</b>              | UN1779           |
| · <b>14.2 UN proper shipping name</b> |                  |
| · <b>ADR</b>                          | 1779 FORMIC ACID |
| · <b>IMDG, IATA</b>                   | FORMIC ACID      |

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## · 14.3 Transport hazard class(es)

## · ADR



- Class: 8 Corrosive substances.
- Label: 8+3

## · IMDG, IATA



- Class: 8 Corrosive substances.
- Label: 8

## · 14.4 Packing group

- ADR, IMDG, IATA: II

## · 14.5 Environmental hazards

Not applicable.

## · 14.6 Special precautions for user

Warning: Corrosive substances.

## · Hazard identification number (Kemler code):

83

## · EMS Number:

F-E,S-C

## · Segregation groups

(SGG1) Acids

## · Stowage Category

A

## · Stowage Code

SW2 Clear of living quarters.

## · Segregation Code

SG36 Stow "separated from" SGG18-alkalis.  
SG49 Stow "separated from" SGG6-cyanides

## · 14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

## · Transport/Additional information:

## · ADR

- Limited quantities (LQ)
- Excepted quantities (EQ)

1L

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

## · Transport category

2

## · Tunnel restriction code

D/E

## · IMDG

- Limited quantities (LQ)
- Excepted quantities (EQ)

1L

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

## · UN "Model Regulation":

UN 1779 FORMIC ACID, 8 (3), II

### SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Poisons Act
- Regulated explosives precursors Substance is not listed.
- Regulated poisons Substance is not listed.

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- **Reportable explosives precursors** Substance is not listed.
- **Reportable poisons** 25%
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category**  
H2 ACUTE TOXIC  
P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 40
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**  
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**  
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**  
Substance is not listed.

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
I	80-100

- **Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 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 SDS:** Product Safety Department
- **Contact:** +49 6221 13840-35
- **Date of previous version:** 17.10.2017
- **Abbreviations and acronyms:**  
PBT: persistent, bioaccumulative, toxic substance (UK REACH)  
vPvB: very persistent, very bioaccumulative substance (UK REACH)  
UK REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals  
GB CLP: Regulation on classification, labelling and packaging of substances and mixtures  
bw: body weight  
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Flam. Liq. 3: Flammable liquids – Category 3  
Acute Tox. 4: Acute toxicity – Category 4  
Acute Tox. 3: Acute toxicity – Category 3  
Skin Corr. 1A: Skin corrosion/irritation – Category 1A