

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 02.12.2011

Version number 1

Revision: 01.12.2011

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

- **1.1. Product identifier**
- **Trade name:** Chloroform: Isoamyl alcohol 24:1
- **Article number:** 39554
- **1.2. Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation** 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:** +49 6131 19240 (university hospital Mainz)

SERVA
Electrophoresis

2 Hazards identification

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



GHS08

Carc. 2 H351 Suspected of causing cancer.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

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



Xn; Harmful

R22-40-48/20/22: Harmful if swallowed. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.



Xi; Irritant

R38: Irritating to skin.

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- **Classification system:**

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

- **2.2. Label elements**

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

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

- **Hazard pictograms** GHS07, GHS08

- **Signal word** Warning

- **Hazard-determining components of labelling:**

trichloromethane

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3-methylbutan-1-ol

- **Hazard statements**

H302 Harmful if swallowed.

H315 Causes skin irritation.

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**

P201 Obtain special instructions before use.

P281 Use personal protective equipment as required.

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

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P314 Get medical advice/attention if you feel unwell.

- **2.3. Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **3.2. Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**

CAS: 67-66-3 EINECS: 200-663-8	trichloromethane ☒ Xn R22-40-48/20/22; ☒ Xi R38 Carc. Cat. 3 ☒ Carc. 2, H351; STOT RE 2, H373; ☒ Acute Tox. 4, H302; Skin Irrit. 2, H315	80-100%
CAS: 123-51-3 EINECS: 204-633-5	3-methylbutan-1-ol ☒ Xn R20; ☒ Xi R37 R10-66 ☒ Flam. Liq. 3, H226; ☒ Acute Tox. 4, H302; Acute Tox. 4, H332; STOT SE 3, H335	2.5-7%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **4.1. Description of first aid measures**

- **General information**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation** Supply fresh air and to be sure call for a doctor.

- **After skin contact** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact**

Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

- **After swallowing** Drink copious amounts of water and provide fresh air. Call for doctor immediately.

- **Information for doctor**

- **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.

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5 Firefighting measures

- **5.1. Extinguishing media**
- **Suitable extinguishing agents**
CO₂, 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**
In case of fire, the following can be released:
Hydrogen chloride (HCl)
Carbon monoxide and carbon dioxide
- **5.3. Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **6.1. Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **6.2. Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3. Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4. Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **7.1. Precautions for safe handling**
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** No special measures required.
- **7.2. Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Protect from heat and direct sunlight.
- **7.3. Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **8.1. Control parameters**

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

67-66-3 trichloromethane (80-100%)

WEL ()	Long-term value: 9.9 mg/m ³ , 2 ppm
	Sk

123-51-3 3-methylbutan-1-ol (2.5-7%)

WEL ()	Short-term value: 458 mg/m ³ , 125 ppm
	Long-term value: 366 mg/m ³ , 100 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

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- **8.2. Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
Short term filter device:
Filter ABEK
- **Protection of hands:**
Protective gloves.
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **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:**
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

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

Form:	Solution
Colour:	Colourless
Odour:	Characteristic
- **Change in condition**

Melting point/Melting range:	- 63°C
Boiling point/Boiling range:	> 61°C
- **Flash point:** Not applicable
- **Ignition temperature:** 982°C
- **Self igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Vapour pressure at 20°C:** 213 hPa
- **Density at 20°C:** 1.476 g/cm³
- **Solubility in / Miscibility with**

Water at 20°C:	8 g/l
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- **Solvent content:**
- **Organic solvents:**
 - VOC %: 4.00 %
 - VOC g/l: 58.1 g/l
- **9.2. Other information** There are no more data available.

10 Stability and reactivity

- **10.1. Reactivity**
- **10.2. Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3. Possibility of hazardous reactions**
 - Reacts with alkaline metals
 - Reacts with strong oxidizing agents
 - Reacts with strong alkali
- **10.4. Conditions to avoid** No further relevant information available.
- **10.5. Incompatible materials:** No further relevant information available.
- **10.6. Hazardous decomposition products:**
 - Hydrogen chloride (HCl)
 - Carbon monoxide and carbon dioxide
 - Chlorine
 - Phosgen

11 Toxicological information

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

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

67-66-3 trichloromethane

Oral	LD50	300 mg/kg (rat)
Dermal	LD50	> 20 000 mg/kg (rabbit)
		75 mg/kg (rat)
Inhalative	LC50/4h	47.7 mg/l (rat)
	LC50/96h	18 mg/l (Fish)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No 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:

 - Harmful
 - Irritant

12 Ecological information

- **12.1. Toxicity**

· **Acquatic toxicity:**

67-66-3 trichloromethane

EC50/48h	29 mg/l (Daphnia magna)
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- **12.2. Persistence and degradability** No further relevant information available.

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- **Behaviour in environmental systems:**
- **12.3. Bioaccumulative potential** No further relevant information available.
- **12.4. Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water.
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
- **12.5. Results of PBT and vPvB assessment**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6. Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1. Waste treatment methods**
- **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **14.1. UN-Number**
- **ADR, IMDG, IATA** 2810
- **14.2. UN proper shipping name**
- **ADR** 2810 TOXIC LIQUID, ORGANIC, N.O.S. (CHLOROFORM)
- **IMDG** TOXIC LIQUID, ORGANIC, N.O.S. (CHLOROFORM)
- **IATA** Toxic liquid, organic, n.o.s. (Chloroform)
- **14.3. Transport hazard class(es)**
- **ADR**
- 
- **Class** 6.1 Toxic substances.
- **Label** 6.1
- **IMDG, IATA**
- 
- **Class** 6.1 Toxic substances.
- **Label** 6.1
- **14.4. Packing group**
- **ADR, IMDG, IATA** III
- **14.5. Environmental hazards:** Not applicable.
- **Marine pollutant:** No
- **14.6. Special precautions for user** Warning: Toxic substances.
- **Danger code (Kemler):** 60

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· EMS Number:	F-A,S-A
· 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Tunnel restriction code	E
· UN "Model Regulation":	UN2810, TOXIC LIQUID, ORGANIC, N.O.S., 6.1, III

15 Regulatory information

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

· **National regulations**

· **Technical instructions (air):**

Class	Share in %
I	80-100
NK	2,5-7

· **Water hazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.

· **15.2. 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.

· **Relevant phrases**

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

R10 Flammable.

R20 Harmful by inhalation.

R22 Harmful if swallowed.

R37 Irritating to respiratory system.

R38 Irritating to skin.

R40 Limited evidence of a carcinogenic effect.

R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R66 Repeated exposure may cause skin dryness or cracking.

· **Department issuing MSDS:** Product safety department

· **Contact:** +49 6221 13840-35

· **Abbreviations and acronyms:**

PBT: persistent, bioaccumulative, toxic substance (REACH)

vPvB: very persistent, very bioaccumulative substance (REACH)

REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

CLP: Regulation on classification, labelling and packaging of substances and mixtures

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

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ICAO: International Civil Aviation Organization

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

· *** Data compared to the previous version altered.**

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