

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

## 1 Identification

- **Product identifier**
- **Trade name:** Ethanol undenaturated 96%
- **Article number:** 11094
- **Application of the substance / the mixture:** Laboratory chemicals
- **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
- **Emergency telephone number:**  
Medical Emergency Information in case of poisoning:  
Poison Information Center Mainz - Phone: +49 (0) 6131 19240  
(advisory service in German or English language)

**SERVA**  
■ serving scientists ■

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02

Flammable Liquids 2 H225 Highly flammable liquid and vapor.



GHS07

Eye Irritation 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:** GHS02, GHS07
- **Signal word:** Danger
- **Hazard statements:**  
Highly flammable liquid and vapor.  
Causes serious eye irritation.
- **Precautionary statements**  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Take precautionary measures against static discharge.  
Wash thoroughly after handling.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Store in a well-ventilated place. Keep cool.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

Trade name: Ethanol undenaturated 96%

(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment:**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

64-17-5	ethanol	80-100%
---------	---------	---------

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

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly. Consult doctor if you feel unwell.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist In case of complaints.
- **After swallowing:**  
Wash out mouth. Drink plenty of water and supply fresh air. Seek medical advice if discomfort occurs.  
Do not induce vomiting!
- **Most important symptoms and effects, both acute and delayed** Dizziness
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub> extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**  
Vapours can form flammable and explosive mixtures with air.  
Vapours are heavier than air and spread over the floor. Accumulation in low areas is possible.  
Formation of toxic gases is possible during heating or in case of fire.  
In case of fire, the following can be released:  
Carbon monoxide and carbon dioxide

(Contd. on page 3)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

**Trade name: Ethanol undenaturated 96%**

(Contd. of page 2)

- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective clothing.  
Ensure adequate ventilation  
Particular danger of slipping on leaked/spilled product.
- **Environmental precautions:**  
Prevent seepage into sewage system, workpits and cellars.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**  
Dispose contaminated material as waste according to item 13.  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

All components have the value 1,800 ppm.

· **PAC-2:**

All components have the value 3300\* ppm.

· **PAC-3:**

All components have the value 15000\* ppm.

· **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.

## 7 Handling and storage

- **Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:**  
Protect against electrostatic charges.  
Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store only in the original receptacle.  
Unsuitable material for receptacle: aluminium.  
Store in a cool location.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**  
Store containers in a dry and well-ventilated place.  
Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

## 8 Exposure controls/personal protection

· **Control parameters**

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

**64-17-5 ethanol (80-100%)**

PEL Long-term value: 1900 mg/m<sup>3</sup>, 1000 ppm

(Contd. on page 4)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

**Trade name: Ethanol undenaturated 96%**

(Contd. of page 3)

REL	Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
TLV	Short-term value: 1000 ppm
A3	

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

· **Exposure controls**

· **Additional information about design of technical systems:** No further data; see item 7.

· **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.

Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

· **Breathing equipment:**

Short term filter device:

Filter A/P2

· **Protection of hands:**

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.

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 trough 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:**

Nitrile rubber, NBR

Butyl rubber, BR

Chloroprene rubber, CR

· **Eye protection:** Tightly sealed goggles

· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information:**

· **Color:**

Colorless

· **Odor:**

Characteristic

· **Odor threshold:**

Not determined.

· **Melting point/Melting range:**

-114 °C (-173.2 °F)

· **Boiling point/Boiling range:**

78 °C (172.4 °F)

· **Flammability (solid, gaseous):**

Highly flammable.

· **Explosion limits:**

· **Lower:**

3.4 Vol %

· **Upper:**

15 Vol %

· **Flash point:**

12 °C (53.6 °F)

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

Trade name: Ethanol undenaturated 96%

(Contd. of page 4)

· <b>Ignition temperature:</b>	425 °C (797 °F)
· <b>Decomposition temperature:</b>	no information available
· <b>pH-value:</b>	no information available
	Mixture is non-polar/aprotic.
· <b>Viscosity:</b>	
· <b>Kinematic viscosity:</b>	no information available
· <b>Dynamic viscosity at 20 °C (68 °F):</b>	1.2 mPas
· <b>Solubility in / Miscibility with:</b>	
· <b>Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	no information available
· <b>Vapor pressure at 20 °C (68 °F):</b>	59 hPa (44.3 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	0.79 g/cm <sup>3</sup> (6.59255 lbs/gal)
· <b>Relative density:</b>	no information available
· <b>Other information</b>	The data specified above refer to ethanol (100 %).
· <b>Appearance:</b>	
· <b>Form:</b>	Fluid
· <b>Important information on protection of health and environment, and on safety:</b>	
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Solvent content:</b>	
· <b>Organic solvents:</b>	96.0 %
· <b>VOC %:</b>	
· <b>VOC content:</b>	96.00 %
· <b>Molecular weight</b>	46.1 g/mol

## 10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** Vapours can form flammable and explosive mixtures with air.
- **Conditions to avoid:**  
Avoid high temperatures, flames, sparks  
static discharge
- **Incompatible materials:**  
Avoid contact with:  
Oxidizers  
alkaline earth metals, peroxides, phosphorus oxides, nitrogen oxides, perchlorates, chrome oxides, hydrogen peroxide, nitric (V) acid, sulfuric (VI) acid, acid chlorides
- **Hazardous decomposition products:** In case of fire: See Section 5

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

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

Oral	LD50	10,470 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4h	124.7 mg/l (rat)

- **on the eye:** Causes serious eye irritation.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

**Trade name: Ethanol undenaturated 96%**

(Contd. of page 5)

· **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

All components have the value 1.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

· **Toxicity:**

· **Aquatic toxicity:**

LC50/96h (*Oncorhynchus mykiss*): 13000 mg/l

LC50/48h (*Daphnia magna*): 12340 mg/l

Toxicity to algae: NOEC (*Lemna gibba*, OECD 201) = 280 mg/l

· **Persistence and degradability: Easily biodegradable**

· **Other information:**

OECD 301 B (ready biodegradability/ CO<sub>2</sub> evolution test)

Biodegradation:

97 %

· **Bioaccumulative potential: BCF: 0,66 - 3,2 mg/l**

· **Mobility in soil: No further relevant information available.**

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

· **PBT: Not applicable.**

· **vPvB: Not applicable.**

· **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 (Self-assessment): slightly hazardous for water

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Disposal must be made according to official regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:**

Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.

· **Recommended cleansing agent: Water, if necessary with cleansing agents.**

## 14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

UN1170

· **UN proper shipping name**

· **DOT**

· **ADR**

Ethanol

1170 ETHANOL (ETHYL ALCOHOL)

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

Trade name: Ethanol undenaturated 96%

(Contd. of page 6)

· **IMDG** ETHANOL (ETHYL ALCOHOL)  
 · **IATA** ETHANOL

· **Transport hazard class(es)**· **DOT**

· **Class** 3.2  
 · **Label** 3

· **ADR, IMDG, IATA**

· **Class:** 3 Flammable liquids  
 · **Label:** 3

· **Packing group**· **DOT, ADR, IMDG, IATA** II· **Environmental hazards**· **Marine pollutant:** No· **Special precautions for user** Warning: Flammable liquids· **Hazard identification number (Kemler code):** 33· **EMS Number:** F-E,S-D· **Stowage Category** A

· **Transport in bulk according to Annex II of  
 MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**· **ADR**

· **Excepted quantities (EQ)** Code: E2  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 500 ml

· **IMDG**· **Limited quantities (LQ)** 1L

· **Excepted quantities (EQ)** Code: E2  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
 No further relevant information available.

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

**Trade name: Ethanol undenaturated 96%**

(Contd. of page 7)

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

None of the ingredients is listed.

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

All ingredients are listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

All components have the value A3.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms** GHS02, GHS07

· **Signal word** Danger

· **Hazard statements**

Highly flammable liquid and vapor.

Causes serious eye irritation.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

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

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **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.

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

· **Contact:** +49 6221 13840-35

· **Date of preparation / last revision** 02/28/2023

· **Abbreviations and acronyms:**

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

ICAO: International Civil Aviation Organisation

PBT: persistent, bioaccumulative, toxic substance (REACH)

(Contd. on page 9)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/28/2023

Reviewed on 02/28/2023

**Trade name: Ethanol undenaturated 96%**

(Contd. of page 8)

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

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

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Liquids 2: Flammable liquids – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

US