SAFETY DATA SHEET

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

1.1 Product identifiers

- Product name: Sephacryl®
- Product Number: S300HR
- Brand: Sigma

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

- Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

- Company: Sigma-Aldrich Inc.
  3050 SPRUCE ST
  ST. LOUIS MO  63103
  UNITED STATES
- Telephone: +1 314 771-5765
- Fax: +1 800 325-5052

1.4 Emergency telephone

- Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

- GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
  Flammable liquids (Category 3), H226
  For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

- Pictogram: 

- Signal Word: Warning
- Hazard statement(s): H226
  Flammable liquid and vapor.
- Precautionary statement(s): P210
  Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

Sigma - S300HR
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Synonyms: Poly([allyl dextran]-co-N,N'-methylenebisacrylamide)

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>Flam. Liq. 2; Eye Irrit. 2A; H225, H319</td>
<td>&gt;= 50 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>64-17-5</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-578-6</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-002-00-5</td>
<td></td>
</tr>
<tr>
<td>Registration</td>
<td>01-2119457610-43-XXXXX</td>
<td></td>
</tr>
<tr>
<td>Registration number</td>
<td>XXXX</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.
4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 **Indication of any immediate medical attention and special treatment needed**
No data available.

SECTION 5: Firefighting measures

5.1 **Extinguishing media**

**Suitable extinguishing media**
- Foam
- Carbon dioxide (CO2)
- Dry powder

**Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.

5.2 **Special hazards arising from the substance or mixture**
- Carbon oxides
- Combustible.
- Vapors are heavier than air and may spread along floors.
- Forms explosive mixtures with air at elevated temperatures.
- Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 **Advice for firefighters**
In the event of fire, wear self-contained breathing apparatus.

5.4 **Further information**
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 **Environmental precautions**
Do not let product enter drains. Risk of explosion.

6.3 **Methods and materials for containment and cleaning up**
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb® ). Dispose of properly. Clean up affected area.

6.4 **Reference to other sections**
For disposal see section 13.

SECTION 7: Handling and storage

7.1 **Precautions for safe handling**
Advice on protection against fire and explosion.
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**Hygiene measures**
Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2.

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

**Storage conditions**
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

**Storage stability**
Recommended storage temperature
2 - 8 °C

**Storage class**
Storage class (TRGS 510): 3: Flammable liquids

### 7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8: Exposure controls/personal protection**

#### 8.1 Control parameters

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
<td>TWA 1,000 ppm</td>
<td>1,900 mg/m³</td>
<td>USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 1,000 ppm</td>
<td>1,900 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 1,000 ppm</td>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

**Remarks**
Confirmed animal carcinogen with unknown relevance to humans

<table>
<thead>
<tr>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA 1,000 ppm 1,900 mg/m³</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
<td></td>
</tr>
<tr>
<td>PEL 1,000 ppm 1,900 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Appropriate engineering controls**
Change contaminated clothing. Wash hands after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
**Skin protection**  
required

**Body Protection**  
Flame retardant antistatic protective clothing.

**Respiratory protection**  
required when vapours/aerosols are generated.

**Control of environmental exposure**  
Do not let product enter drains. Risk of explosion.

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**SECTION 9: Physical and chemical properties**

<table>
<thead>
<tr>
<th>9.1 Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
</tr>
<tr>
<td>b) Odor</td>
</tr>
<tr>
<td>c) Odor Threshold</td>
</tr>
<tr>
<td>d) pH</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
</tr>
<tr>
<td>g) Flash point</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
</tr>
<tr>
<td>k) Vapor pressure</td>
</tr>
<tr>
<td>l) Vapor density</td>
</tr>
<tr>
<td>m) Density</td>
</tr>
<tr>
<td>n) Water solubility</td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol/water</td>
</tr>
<tr>
<td>p) Autoignition temperature</td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
</tr>
<tr>
<td>r) Viscosity</td>
</tr>
<tr>
<td>s) Explosive properties</td>
</tr>
</tbody>
</table>
t) Oxidizing properties  No data available

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heating.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity
Oral: No data available
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.
Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

Stomach - Irregularities - Based on Human Evidence

Components
ethanol

Acute toxicity
LD50 Oral - Rat - male and female - 10,470 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Rat - male and female - 4 h - 124.7 mg/l - vapor
(OECD Test Guideline 403)
Dermal: No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes serious eye irritation.
(OECD Test Guideline 405)

Respiratory or skin sensitization
Maximization Test - Guinea pig
Result: negative
(OECD Test Guideline 406)
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: Methanol

Germ cell mutagenicity
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative
Method: OECD Test Guideline 478
Species: Mouse - male
Result: Positive results were obtained in some in vivo tests.

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

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**SECTION 12: Ecological information**

**12.1 Toxicity**

**Mixture**
No data available

**12.2 Persistence and degradability**
No data available

**12.3 Bioaccumulative potential**
No data available

**12.4 Mobility in soil**
No data available

**12.5 Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Endocrine disrupting properties**
No data available

**12.7 Other adverse effects**
No data available

**Components**

**ethanol**

- **Toxicity to fish**
  flow-through test LC50 - Pimephales promelas (fathead minnow) - 15,300 mg/l - 96 h
  (US-EPA)

- **Toxicity to daphnia and other aquatic invertebrates**
  static test LC50 - Ceriodaphnia dubia (water flea) - 5,012 mg/l - 48 h
  Remarks: (ECHA)

- **Toxicity to algae**
  static test ErC50 - Chlorella vulgaris (Fresh water algae) - 275 mg/l - 72 h
  (OECD Test Guideline 201)

- **Toxicity to bacteria**
  static test IC50 - activated sludge - > 1,000 mg/l - 3 h
  (OECD Test Guideline 209)
Toxicity to fish (Chronic toxicity)  
semi-static test NOEC - Danio rerio (zebra fish) - 250 mg/l - 120 h  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)  
semi-static test NOEC - Daphnia magna (Water flea) - 9.6 mg/l - 9 d  
Remarks: (ECHA)

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)
UN number: 1170  Class: 3  Packing group: III  
Proper shipping name: Ethanol solutions  
Reportable Quantity (RQ): Poison Inhalation Hazard: No

IMDG
UN number: 1170  Class: 3  Packing group: III  
EMS-No: F-E, S-D  
Proper shipping name: ETHANOL SOLUTION

IATA
UN number: 1170  Class: 3  Packing group: III  
Proper shipping name: Ethanol solution

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

Sigma - S300HR
Pennsylvania Right To Know Components
ethanol  CAS-No.  Revision Date
64-17-5  1993-04-24

California Prop. 65 Components
, which is/are known to the State of California to  CAS-No.  Revision Date
cause cancer and birth defects or other reproductive  64-17-5  2011-05-20
harm. For more information go to
www.P65Warnings.ca.gov.ethanol

SECTION 16: Other information

Further information
The above information is believed to be correct but does not purport to be all inclusive
and shall be used only as a guide. The information in this document is based on the
present state of our knowledge and is applicable to the product with regard to
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