

# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 17.01.2023

Version number 5

Revision: 17.01.2023

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

- **1.1 Product identifier**
- **Trade name:** Polyethylenimine
- **Article number:** 33141
- **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:**  
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 ■

### SECTION 2: Hazards identification

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



GHS09

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

|              |   |
|--------------|---|
| Acute Tox. 4 | H302 Harmful if swallowed.                |
| Eye Irrit. 2 | H319 Causes serious eye irritation.       |
| Skin Sens. 1 | H317 May cause an allergic skin reaction. |

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008:**  
The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms:** GHS07, GHS09
- **Signal word:** Warning
- **Hazard-determining components of labelling:**  
Aziridine, homopolymer
- **Hazard statements:**  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H411 Toxic to aquatic life with long lasting effects.
- **Precautionary statements**  
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.

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

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

P333+P313 *If skin irritation or rash occurs: Get medical advice/attention.*

P391 *Collect spillage.*

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

· **Hazard pictograms** GHS07, GHS09

· **Signal word** Warning

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

Aziridine, homopolymer

· **Hazard statements**

H317 May cause an allergic skin reaction.

· **Precautionary statements**

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

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

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.

\*

### SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

· **Description:** aqueous solution

· **Dangerous components:**

|           |   |        |
|-----------|---|--------|
| 9002-98-6 | Aziridine, homopolymer  | 30-50% |
|           | ⚠ Aquatic Chronic 2, H411; ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319; Skin Sens. 1, H317 |        |

· **Additional information**

the product contains no further substances which shall be indicated according to UK REACH-Regulation (Regulation (EC) No. 1907/2006).

For the wording of the listed hazard phrases refer to section 16.

\*

### SECTION 4: First aid measures

· **4.1 Description of first aid measures**

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

· **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 immediately.

· **After swallowing:**

Wash out mouth. Drink plenty of water and supply fresh air.

Seek medical treatment.

· **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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### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
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:**  
During heating or in case of fire formation of poisonous and caustic gases is 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 respiratory protective device.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective clothing.  
Ensure adequate ventilation
- **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 item 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:**  
Avoid contact with eyes and skin.  
Ensure good ventilation/exhaustion at the workplace.
- **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:** -
- **Further information about storage conditions:** Keep receptacle tightly sealed and store in dry conditions.
- **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:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **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 item 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.  
Avoid contact with the eyes and skin.  
Immediately remove all soiled and contaminated clothing

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Wash hands before breaks and at the end of work.

· **Breathing equipment:**

Short term filter device:

Filter P2.

· **Hand protection:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Protective gloves.

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 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:**

Natural rubber, NR

Nitrile rubber, NBR

· **Eye/face protection:** Safety glasses

· **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:**

colorless to yellowish

· **Odour:**

Characteristic

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

-10 °C

· **Boiling point or initial boiling point and boiling range:**

100 °C

· **Flammability:**

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

· **Lower and upper explosion limit:**

· **Lower:**

no information available

· **Upper:**

no information available

· **Flash point:**

>100 °C

· **Ignition temperature:**

>200 °C

· **Decomposition temperature:**

no information available

· **pH at 20 °C:**

10-12

· **Viscosity:**

· **Kinematic viscosity:**

no information available

· **Dynamic viscosity:**

18000 - 40000 mPas

· **Solubility:**

· **Water:**

Fully miscible

· **Partition coefficient n-octanol/water (log value):**

no information available

· **Vapour pressure at 20 °C:**

23.4 hPa

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- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· <b>Density and/or relative density:</b></li> <li>· <b>Density at 20 °C:</b></li> <li>· <b>Relative density:</b></li> </ul>  | <p>1.08 g/cm<sup>3</sup></p> <p>no information available</p>  |
| <ul style="list-style-type: none"> <li>· <b>9.2 Other information</b></li> <li>· <b>Appearance:</b></li> <li>· <b>Form:</b></li> <li>· <b>Important information on protection of health and environment, and on safety:</b></li> <li>· <b>Explosive properties:</b></li> </ul> | <p>There are no more data available.</p> <p>viscous liquid</p> <p>Product does not present an explosion hazard.</p> |

### 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 according to specifications.
- **10.3 Possibility of hazardous reactions:** No further relevant informations available.
- **10.4 Conditions to avoid:** high temperatures
- **10.5 Incompatible materials:** No further relevant information available.
- **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.
- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:** Causes serious eye irritation.
- **Respiratory or skin sensitisation:** May cause an allergic skin reaction.
- **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.
- **Additional toxicological information:**
- **Sensitisation Guinea Pig Maximisation Test (GPMT), OECD - Guideline 406:** skin sensitising
- **11.2 Information on other hazards:**

|   |
|---|
| <b>· Endocrine disrupting properties:</b> |
|---|

|                                    |
|------------------------------------|
| None of the ingredients is listed. |
|------------------------------------|

### SECTION 12: Ecological information

- **12.1 Toxicity:**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability:** No further relevant information available.
- **Other information:**
- The product is biodegradable.
- OECD Guideline 302B (aerobic, activated sludge, municipal)
- DOC-removal: ca. 50 - 60 % (28 d)
- **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.

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- **12.6 Endocrine disrupting properties:** For information on endocrine disrupting properties see section 11.
- **12.7 Other adverse effects:**
- **Remark:** Toxic to aquatic life with long lasting effects.
- **Additional ecological information:**
- **General notes:**
  - Do not allow product to reach ground water, water course or sewage system.
  - Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.

### SECTION 13: Disposal considerations

- **13.1 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.

### SECTION 14: Transport information

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>· <b>14.1 UN number or ID number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | UN3082   |
| <ul style="list-style-type: none"> <li>· <b>14.2 UN proper shipping name</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG</b></li> <li>· <b>IATA</b></li> </ul>  | 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Polyethylene imine solution)<br>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Polyethylene imine solution), MARINE POLLUTANT<br>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Polyethylene imine solution) |
| <ul style="list-style-type: none"> <li>· <b>14.3 Transport hazard class(es)</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | <div style="display: flex; align-items: center;">  </div> <ul style="list-style-type: none"> <li>· <b>Class:</b></li> <li>· <b>Label:</b></li> </ul>  |
| <ul style="list-style-type: none"> <li>· <b>14.4 Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>  | III  |
| <ul style="list-style-type: none"> <li>· <b>14.5 Environmental hazards</b></li> <li>· <b>Marine pollutant:</b></li> <li>· <b>Special marking (ADR):</b></li> <li>· <b>Special marking (IATA):</b></li> </ul> | Yes<br>Symbol (fish and tree)<br>Symbol (fish and tree)<br>Symbol (fish and tree)  |
| <ul style="list-style-type: none"> <li>· <b>14.6 Special precautions for user</b></li> <li>· <b>Hazard identification number (Kemler code):</b></li> </ul>   | Warning: Miscellaneous dangerous substances and articles.<br>90  |

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|   |  |
|---|--|
| · <b>EMS Number:</b>  | F-A,S-F  |
| · <b>Stowage Category</b>   | A  |
| · <b>14.7 Maritime transport in bulk according to IMO instruments</b> | Not applicable.  |
| · <b>Transport/Additional information:</b>                            |  |
| · <b>ADR</b>  |  |
| · <b>Limited quantities (LQ)</b>                                      | 5L   |
| · <b>Excepted quantities (EQ)</b>                                     | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · <b>Transport category</b>   | 3  |
| · <b>Tunnel restriction code</b>                                      | (-)  |
| · <b>IMDG</b>   |  |
| · <b>Limited quantities (LQ)</b>                                      | 5L   |
| · <b>Excepted quantities (EQ)</b>                                     | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · <b>UN "Model Regulation":</b>                                       | UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (POLYETHYLENE IMINE SOLUTION), 9, III                |

\*

**SECTION 15: Regulatory information**· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- Seveso category E2 Hazardous to the Aquatic Environment
- Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **National regulations:**

- **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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### 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.*

· **Relevant phrases**

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

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

· **Contact:** +49 6221 13840-35

· **Date of previous version:** 13.05.2020

· **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 (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

ELINCS: European List of Notified Chemical Substances

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

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Skin Sens. 1: Skin sensitisation – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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