

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

Printing date 18.12.2024

Version number 3

Revision: 18.12.2024

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

· **1.1 Product identifier**

· **Trade name:** Protease Inhibitor Mix P



· **Article number:** 39103

· **UFI:** G160-M04D-600F-4T4G

· **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:** Security Department Phone: +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:**



GHS06

Acute Tox. 3

H301 Toxic if swallowed.



GHS05

Skin Corr. 1B

H314 Causes severe skin burns and eye damage.



GHS09

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

· **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:** GHS05, GHS06, GHS09

· **Signal word:** Danger

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

1,10-phenanthroline

4-(2-Aminoethyl)-benzene sulfonyl fluoride hydrochloride

L-leucinamide, N-acetyl-L-leucyl-N-[(1S)-4-[(aminoiminomethyl)amino]-1-formylbutyl]-, sulfate (2:1)

· **Hazard statements:**

H301 Toxic if swallowed.

(Contd. on page 2)

GB

**Safety data sheet**  
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Printing date 18.12.2024

Version number 3

Revision: 18.12.2024

**Trade name: Protease Inhibitor Mix P**

(Contd. of page 1)

*H314 Causes severe skin burns and eye damage.**H410 Very toxic to aquatic life with long lasting effects.***· Precautionary statements***P260 Do not breathe dust.**P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.**P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**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** GHS05, GHS06, GHS09**· Signal word** Danger**· Hazard-determining components of labelling:***1,10-phenanthroline**4-(2-Aminoethyl)-benzene sulfonyl fluoride hydrochloride**L-leucinamide, N-acetyl-L-leucyl-N-[(1S)-4-[(aminoiminomethyl)amino]-1-formylbutyl]-, sulfate (2:1)***· Hazard statements***H301 Toxic if swallowed.**H314 Causes severe skin burns and eye damage.***· Precautionary statements***P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.**P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**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** No further relevant information available.**SECTION 3: Composition/information on ingredients****· 3.2 Mixtures****· Description:** Solids mixture**· Dangerous components:**

CAS: 5144-89-8 EINECS: 200-629-2	<i>1,10-phenanthroline</i> ⚠ Acute Tox. 3, H301; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	60-80%
CAS: 30827-99-7	<i>4-(2-Aminoethyl)-benzene sulfonyl fluoride hydrochloride</i> ⚠ Skin Corr. 1B, H314	15-30%
CAS: 103476-89-7	<i>L-leucinamide, N-acetyl-L-leucyl-N-[(1S)-4-[(aminoiminomethyl)amino]-1-formylbutyl]-, sulfate (2:1)</i> ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	0.5-1.5%

**· Additional information***The product does not contain any other substances that have to be declared according to UK REACH (Regulation (EC) No 1907/2006).**For the wording of the listed hazard phrases refer to section 16.*

GB

(Contd. on page 3)

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

Printing date 18.12.2024

Version number 3

Revision: 18.12.2024

Trade name: **Protease Inhibitor Mix P**

(Contd. of page 2)

**SECTION 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; consult doctor in case of complaints.
- **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. Call a doctor immediately.  
Do not induce vomiting - risk of chemical burns!
- **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:**  
In case of fire, the following can be formed, but not limited to:  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide and carbon dioxide  
Sulphur oxides (SO<sub>x</sub>)
- **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  
Avoid formation of dust.
- **6.2 Environmental precautions:**  
Inform respective authorities in case of seepage into water course or sewage system.  
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.  
Pick up mechanically.
- **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.

GB

(Contd. on page 4)

**Safety data sheet**  
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Printing date 18.12.2024

Version number 3

Revision: 18.12.2024

Trade name: **Protease Inhibitor Mix P**

(Contd. of page 3)

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling:**  
 Ensure good ventilation/exhaustion at the workplace.  
 Open and handle receptacle with care.  
 Prevent formation of dust.
- **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:**  
 Storage temperature: -15 to -25 °C  
 Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:**  
 Store under lock and key and with access restricted to technical experts or their assistants only.  
 Store containers tightly closed and dry.  
 Protect from exposure to the light.
- **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 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  
 Avoid contact with the eyes and skin.  
 Wash hands before breaks and at the end of work.
- **Breathing equipment:**  
 Short term filter device:  
 Filter 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.  
 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.

(Contd. on page 5)

GB

# Safety data sheet

## according to Regulation (EC) No 1907/2006, Article 31

Printing date 18.12.2024

Version number 3

Revision: 18.12.2024

**Trade name: Protease Inhibitor Mix P**

(Contd. of page 4)

- **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:** 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:

- |                                                                    |                          |
|--------------------------------------------------------------------|--------------------------|
| · <b>Physical state:</b>                                           | Solid.                   |
| · <b>Colour:</b>                                                   | White                    |
| · <b>Odour:</b>                                                    | Odourless                |
| · <b>Odour threshold:</b>                                          | not determined.          |
| · <b>Melting point/freezing point:</b>                             | No information available |
| · <b>Boiling point or initial boiling point and boiling range:</b> | No information available |
| · <b>Flammability:</b>                                             | No information available |
| · <b>Lower and upper explosion limit:</b>                          |                          |
| · <b>Lower:</b>                                                    | No information available |
| · <b>Upper:</b>                                                    | No information available |
| · <b>Flash point:</b>                                              | No information available |
| · <b>Decomposition temperature:</b>                                | No information available |
| · <b>pH:</b>                                                       | No information available |
| · <b>Viscosity:</b>                                                |                          |
| · <b>Kinematic viscosity:</b>                                      | No information available |
| · <b>Dynamic viscosity:</b>                                        | No information available |
| · <b>Solubility:</b>                                               |                          |
| · <b>Water:</b>                                                    | no information available |
| · <b>Partition coefficient n-octanol/water (log value):</b>        | No information available |
| · <b>Vapour pressure:</b>                                          | No information available |
| · <b>Density and/or relative density:</b>                          |                          |
| · <b>Density:</b>                                                  | No information available |
| · <b>Relative density:</b>                                         | No information available |
| · <b>Particle characteristics</b>                                  | No information available |

#### · 9.2 Other information

- |                                                                                        |                                                                                             |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| · <b>Appearance:</b>                                                                   | Further physico-chemical data are not available.                                            |
| · <b>Form:</b>                                                                         | Powder                                                                                      |
| · <b>Important information on protection of health and environment, and on safety:</b> |                                                                                             |
| · <b>Explosive properties:</b>                                                         | The product is not explosive, but the formation of explosive dust/air mixtures is possible. |

### 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 information available.
- **10.4 Conditions to avoid:** Avoid high temperatures, flames and sparks
- **10.5 Incompatible materials:** Avoid contact with oxidising agents.

(Contd. on page 6)

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

Printing date 18.12.2024

Version number 3

Revision: 18.12.2024

Trade name: **Protease Inhibitor Mix P**

(Contd. of page 5)

· **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:** Toxic if swallowed.
  - **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:** No relevant information available

**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 2 (German Regulation) (Self-assessment): 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>              | UN2928                                                                                                                                        |
| · <b>14.2 UN proper shipping name</b> |                                                                                                                                               |
| · <b>ADR</b>                          | 2928 TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (1,10-phenanthroline, 4-(2-Aminoethyl)-benzene sulfonyl fluoride hydrochloride), ENVIRONMENTALLY |

(Contd. on page 7)

**Safety data sheet**  
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Version number 3

Revision: 18.12.2024

**Trade name: Protease Inhibitor Mix P**

(Contd. of page 6)

· **IMDG, IATA**

**HAZARDOUS**  
**TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.** (1,10-phenanthroline, 4-(2-Aminoethyl)-benzene sulfonyl fluoride hydrochloride)

· **14.3 Transport hazard class(es)**· **ADR**

· **Class:**  
· **Label:**

6.1 Toxic substances.  
6.1+8

· **IMDG**

· **Class**  
· **Label**

6.1 Toxic substances.  
6.1/8

· **IATA**

· **Class**  
· **Label**

6.1 Toxic substances.  
6.1 (8)

· **14.4 Packing group**· **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards**

Product contains environmentally hazardous substances: 1,10-phenanthroline

· **Marine pollutant:**

Yes

· **Special marking (ADR):**

Symbol (fish and tree)  
Symbol (fish and tree)

· **14.6 Special precautions for user**

Warning: Toxic substances.

· **Hazard identification number (Kemler code):**

68

· **EMS Number:**

F-A,S-B

· **Stowage Category**

B

· **Stowage Code**

SW2 Clear of living quarters.

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

Not applicable.

· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)**

500 g

· **Excepted quantities (EQ)**

Code: E4

Maximum net quantity per inner packaging: 1 g

Maximum net quantity per outer packaging: 500 g

· **Transport category**

2

· **Tunnel restriction code**

D/E

(Contd. on page 8)

**Safety data sheet**  
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Printing date 18.12.2024

Version number 3

Revision: 18.12.2024

**Trade name: Protease Inhibitor Mix P**

(Contd. of page 7)

· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	500 g
· <b>Excepted quantities (EQ)</b>	Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g
· <b>UN "Model Regulation":</b>	UN 2928 TOXIC SOLID, CORROSIVE, ORGANIC, N. O. S. (1,10-PHENANTHROLINE, 4-(2-AMINOETHYL)-BENZENE SULFONYL FLUORIDE HYDROCHLORIDE), 6.1 (8), II, ENVIRONMENTALLY HAZARDOUS

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**

· **Regulated explosives precursors**

None of the ingredients is listed.

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

None of the ingredients is listed.

· **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **Seveso category**

H2 ACUTE TOXIC

E1 Hazardous to the Aquatic Environment

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t

- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

· **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.

(Contd. on page 9)



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

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Version number 3

Revision: 18.12.2024

**Trade name: Protease Inhibitor Mix P**

(Contd. of page 8)

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
I	60-80

- **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.

### 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**

- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H332 Harmful if inhaled.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

· **Department issuing SDS:** Product Safety Department

· **Contact:** +49 6221 13840-35

· **Date of previous version:** 02.06.2016

· **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
- UFI: Unique Formula Identifier
- 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. 3: Acute toxicity – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1B: Skin corrosion/irritation – Category 1B
- Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

GB