

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

**E-64**

Revision date: 04.05.2018

Product code: LS-3890

Page 1 of 7

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

#### 1.1. Product identifier

E-64

##### Further trade names

(2R,3R)-3-(((S)-1-((4-guanidinobutyl)amino)-4-methyl-1-oxopentan-2-yl)carbamoyl)oxirane-2-carboxylic acid  
L-trans-Epoxy succinyl-Leu-4-guanidinobutylamide  
L-trans-Epoxy succinyl-Leu-agmatine  
L-trans-3-Carboxyoxiran-2-carbonyl-L-leucylagmatine  
N-[N-(L-3-Trans-carboxirane-2-carbonyl)-L-leucyl]-agmatine  
N-(trans-Epoxy succinyl)-L-leucine-4-guanidinobutylamide  
protease inhibitor E-64

Abbreviation: E-64  
CAS No: 66701-25-5  
EC No: 613-978-4

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

##### Use of the substance/mixture

Laboratory chemical  
Manufacture of the substance  
Scientific research and development

##### Uses advised against

Do not use for private purposes (household).

#### 1.3. Details of the supplier of the safety data sheet

Company name: Iris Biotech GmbH  
Street: Adalbert-Zoellner-Straße 1  
Place: D-95615 Marktredwitz, Germany  
Post-office box: 568  
D-95605 Marktredwitz, Germany  
Telephone: +49 9231 97121 0  
e-mail: info@iris-biotech.de  
Internet: www.iris-biotech.de  
Telefax: +49 9231 97121 99

#### 1.4. Emergency telephone number:

+49 (0)89 19240

##### Further Information

This product does not meet the criteria for classification into a hazardous class according to Regulation (EC) No 1272/2008 on the classification, labeling and packaging of substances and mixtures. A safety data sheet is provided which does not fully comply with Article 31 and Annex II of REACH.

Voluntary safety information following the Safety Data Sheet format according to Regulation (EC) No. 1907/2006 (REACH)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Regulation (EC) No. 1272/2008

This substance is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

#### 2.2. Label elements

##### Regulation (EC) No. 1272/2008

##### Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

**E-64**

Revision date: 04.05.2018

Product code: LS-3890

Page 2 of 7

P262 Do not get in eyes, on skin, or on clothing.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

### Additional advice on labelling

Warning - substance not yet tested completely.

### 2.3. Other hazards

none

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

#### Chemical characterization

(2R,3R)-3-(((S)-1-((4-guanidinobutyl)amino)-4-methyl-1-oxopentan-2-yl)carbamoyl)oxirane-2-carboxylic acid

Sum formula: C<sub>15</sub>H<sub>27</sub>N<sub>5</sub>O<sub>5</sub>

Molecular weight: 357,41 g/mol

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### After inhalation

Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

In all cases of doubt, or when symptoms persist, seek medical advice.

#### After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

In all cases of doubt, or when symptoms persist, seek medical advice.

#### After contact with eyes

If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist.

#### After ingestion

Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person or a person with cramps.

In all cases of doubt, or when symptoms persist, seek medical advice.

### 4.2. Most important symptoms and effects, both acute and delayed

No data available

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Water spray. alcohol resistant foam. Dry extinguishing powder. Carbon dioxide (CO<sub>2</sub>). Sand.

#### Unsuitable extinguishing media

High power water jet.

### 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to the escape of irritating gases and vapours.

In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Nitrogen oxides (NO<sub>x</sub>).

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

**Additional information**

Usual measures for fire prevention.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with skin, eyes and clothes.

Wear personal protection equipment.

In case of fire: Evacuate area.

**6.2. Environmental precautions**

Do not allow to enter into soil/subsoil.

Do not allow to enter into surface water or drains.

**6.3. Methods and material for containment and cleaning up**

Take up mechanically, placing in appropriate containers for disposal. Avoid dust formation.

Clear contaminated areas thoroughly.

**6.4. Reference to other sections**

Treat the recovered material as prescribed in the section on waste disposal.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Provide adequate ventilation.

Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with skin, eyes and clothes.

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

**Further information on handling**

Protect from light!

**7.2. Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and vessels**

Keep container tightly closed in a cool, well-ventilated place.

Handle and store contents under inert gas. Protect from moisture.

storage temperature: -20 °C

**7.3. Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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

**8.1. Control parameters**

**8.2. Exposure controls**

**Appropriate engineering controls**

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

**Protective and hygiene measures**

Avoid contact with skin, eyes and clothes. Provide adequate ventilation. When using do not eat, drink or smoke. Wash hands before breaks and after work.

**Eye/face protection**

Wear eye/face protection.

**Hand protection**

Wear suitable gloves.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Skin protection**

Wear suitable protective clothing.

**Respiratory protection**

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

Physical state:	solid	
Colour:	white	
Odour:	No data available	
pH-Value:		not determined

**Changes in the physical state**

Melting point:		not determined
Initial boiling point and boiling range:		not determined
Sublimation point:		not determined
:		No data available
Flash point:		No data available
Sustaining combustion:		No data available

**Flammability**

Solid:	No data available
Gas:	not applicable

**Explosive properties**

No data available

Lower explosion limits:	No data available
Upper explosion limits:	No data available
Ignition temperature:	No data available

**Auto-ignition temperature**

Solid:	No data available
Gas:	not applicable

Decomposition temperature:	No data available
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**Oxidizing properties**

No data available

Vapour pressure:	not determined
Vapour pressure:	not determined
Density:	not determined
Bulk density:	not determined
Water solubility: (at 20 °C)	20 g/L

**Solubility in other solvents**

Soluble in: Dimethylsulfoxide (DMSO) ca. 20 mg/ml

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

**E-64**

Revision date: 04.05.2018

Product code: LS-3890

Page 5 of 7

Partition coefficient:	No data available
Viscosity / dynamic:	not applicable
Viscosity / kinematic:	not applicable
Flow time:	not applicable
Vapour density:	No data available
Solvent separation test:	No data available
Solvent content:	No data available

### **9.2. Other information**

Solid content:	No data available
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## **SECTION 10: Stability and reactivity**

### **10.1. Reactivity**

No data available

### **10.2. Chemical stability**

Stable under recommended storage conditions.

### **10.3. Possibility of hazardous reactions**

No data available

### **10.4. Conditions to avoid**

Protect from moisture.  
Keep away from heat.  
Protect from light!

### **10.5. Incompatible materials**

Oxidizing agents, strong.  
Strong acid  
Bases, strong.

### **10.6. Hazardous decomposition products**

Thermal decomposition can lead to the escape of irritating gases and vapours.  
In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Nitrogen oxides (NO<sub>x</sub>).

## **SECTION 11: Toxicological information**

### **11.1. Information on toxicological effects**

#### **Toxicokinetics, metabolism and distribution**

No data available

#### **Acute toxicity**

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

#### **Irritation and corrosivity**

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

#### **Sensitising effects**

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

#### **Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.  
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### **STOT-single exposure**

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

**E-64**

Revision date: 04.05.2018

Product code: LS-3890

Page 6 of 7

**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.

**Specific effects in experiment on an animal**

No data available

**Practical experience**

**Observations relevant to classification**

No data available

**Other observations**

Toxicity Data: Intraperitoneal TDLo (Rat): 10 mg/kg

Suspected human reproductive toxicant.

**Further information**

RTECS: RR0390000

Warning - substance not yet tested completely.

**SECTION 12: Ecological information**

**12.1. Toxicity**

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. Other adverse effects**

Warning - substance not yet tested completely.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Advice on disposal**

Dispose of waste according to applicable legislation.

Consult the appropriate local waste disposal expert about waste disposal.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

**14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.

**Inland waterways transport (ADN)**

**14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.

**Marine transport (IMDG)**

**14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.

**Air transport (ICAO-TI/IATA-DGR)**

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**E-64**

Revision date: 04.05.2018

Product code: LS-3890

Page 7 of 7

- 14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.
- 14.5. Environmental hazards**  
ENVIRONMENTALLY HAZARDOUS: no
- 14.6. Special precautions for user**  
No data available
- 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**  
not applicable

**SECTION 15: Regulatory information**

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

**EU regulatory information**

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**Additional information**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

**National regulatory information**

Water contaminating class (D): 3 - highly water contaminating

**15.2. Chemical safety assessment**

For this substance a chemical safety assessment has not been carried out.

**SECTION 16: Other information**

**Further Information**

Warning - substance not yet tested completely.  
The product is intended for research, analysis and scientific education.  
The receiver of our product is singularly responsible for adhering to existing laws and regulations.  
The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.  
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.