

**Safety data sheet**  
according to 1907/2006/EC, Article 31  
**ATP Substrate**

Revision: 30.01.2019

Supersedes version issued: 15.10.2009

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

**1.1 Product identifier**

Trade name:  
ATP Substrate  
Article number:  
51-101, 52-201

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

Reagent for analysis  
For additional information on uses please refer to the BioThema AB website (<https://biothema.com>) or e-mail us at [support@biothema.com](mailto:support@biothema.com)

**1.3 Details of the supplier of the safety data sheet**

Biothema AB  
Handens stationsväg 17  
136 40 Handen  
Sweden  
+46 (0)8 7770020  
Email address: [support@biothema.com](mailto:support@biothema.com)  
MSDS author: BioThema AB

**1.4 Emergency telephone number**

Emergency telephone #: 112  
Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008  
Acute toxicity, oral Category 4, H302  
Chronic aquatic toxicity Category 3, H412  
For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 Label elements**

The product is classified and labelled according to the CLP regulation.

Pictograms:



Signal Word: Warning

Hazard statement(s)

H302

Harmful if swallowed

H412

Harmful to aquatic life with long lasting effects

Precautionary statement(s)

P264, P270, P273, P301 + P312 + P330, P501 Wash skin thoroughly after handling, Do not eat, drink or smoke when using this product, Avoid release to the environment, IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth, Dispose of contents/container to an approved waste disposal plant.

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**2.3 Other Hazards***None known**Results of PBT and vPvB assessment in accordance with Annex XIII of (EC) No 1907/2006:**This mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.***SECTION 3: Composition/information on ingredients****3.1 Substances***Not applicable***3.2 Mixtures***Solid. No disclosure requirement according to Regulation (EC) No 1272/2008*

<b>EC</b>	<b>CAS</b>	<b>Chemical name</b>	<b>Percent</b>

**SECTION 4: First aid measures****4.1 Description of first aid measures***Personal protective equipment for first aid responders is not required.**No immediate medical attention required.**After inhalation: Supply fresh air; consult doctor in case of complaints.**After skin contact: The product might cause skin irritation; good practice is to remove contaminated clothing and rinse skin with water.**After eye contact: Rinse opened eye for several minutes under running water as a precaution. Remove contact lenses.**After ingestion: Drink water (two glasses at most). Consult doctor if feeling unwell.**If these recommendations are not followed the exposed person could experience a delayed eye irritation and skin irritation.***4.2 Most important symptoms and effects, both acute and delayed***May cause irritation. We have no further description of any symptoms.***4.3 Indication of any immediate medical attention and special treatment needed***No information available.***SECTION 5: Firefighting measures****5.1 Extinguishing media***Suitable extinguishing media:*

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CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use extinguishing media that is appropriate to the local surrounding environment and circumstance.

Unsuitable extinguishing media:

For this product no limitations of extinguishing media are given.

**5.2 Special hazards arising from the substance or mixture:**

No data available

**5.3 Advice for firefighters:**

Wear protective clothing for firefighters. Wear self-contained breathing apparatus for firefighting if necessary.

**SECTION 6: Accidental release measures**

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

Advice for non-emergency personnel:

Wear suitable protective equipment as specified in SECTION 8

Advice for emergency personnel:

Wear suitable protective equipment as specified in SECTION 8

**6.2 Environmental precautions**

Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water.

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

Sweep up/absorb with any liquid-binding material and dispose according to section 13.

**6.4 Reference to other sections**

See section 7 for safe handling

See section 13 for disposal information

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling:**

Advice on safe handling:

No special measures required

Advice on hygiene measures:

Good practice is to wash hands before and after working with this mixture. Change contaminated clothing.

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

Storage conditions:

Keep product fully closed

See product label for recommended storage temperature

**7.3 Specified end use(s)**

See subsection 1.2.

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

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**8.1 Control parameters***Components with workplace control parameters:*

None

**8.2 Exposure controls***Engineering controls:**General industrial hygiene practice.*

*Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.*

*Individual protection measures:*

*Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Considerations to specific work environment where the product is used should be made.*

*Eye/face protection:*

*Safety glasses tested and approved under standards such as EN 166(EU).*

*Skin protection:*

*Wear appropriate chemical resistant gloves. We recommend single use vinyl gloves. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.*

*Wear lab coat or suitable protective clothing.*

*Respiratory protection:*

*Not required normally. In case of insufficient ventilation, wear suitable respiratory equipment.*

*Thermal hazards:*

*Wear appropriate thermal protective clothing, when necessary.*

*Environmental exposure controls*

*No special precautionary measures necessary.*

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<i>State of matter:</i>	<i>Solid</i>
<i>Form:</i>	<i>Powder</i>
<i>Colour:</i>	<i>White to pale yellow</i>
<i>Odour:</i>	<i>Odourless</i>
<i>Odour threshold:</i>	<i>No information available. Odourless</i>
<i>pH:</i>	<i>6-8 at 20 °C (68 °F)</i>
<i>Melting point/freezing point:</i>	<i>No information available. Not determined.</i>
<i>Initial boiling point and boiling range:</i>	<i>No information available. Not determined.</i>
<i>Flash point:</i>	<i>Not applicable. Not flammable.</i>
<i>Evaporation rate:</i>	<i>No information available. Not determined.</i>
<i>Flammability (solid, gas):</i>	<i>Not applicable. Not flammable.</i>
<i>Upper/lower flammability or explosive limits:</i>	<i>Not applicable. Not flammable.</i>

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Vapour pressure:	No information available. Not determined.
Vapour density:	No information available. Not determined.
Relative density:	No information available. Not determined.
Solubility(ies):	Fully miscible in water
Partition coefficient: n-octanol/water:	No information available. Not determined.
Auto-ignition temperature:	Not applicable. Not flammable.
Decomposition temperature:	No information available. Not determined.
Viscosity:	No information available. Not determined.
Explosive properties:	Not classified as explosive.
Oxidising properties:	None

## 9.2. Other Information

No relevant additional information available.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

### 10.2 Chemical stability

Material is stable under normal conditions.

### 10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

### 10.4 Conditions to avoid

Contact with incompatible materials. Do not heat closed container. Do not pressurize container.

### 10.5 Incompatible materials

Strong oxidising or reducing agents. Strong acids or strong bases.

### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### General information

Occupational exposure to the substance or mixture may cause adverse effects.

Handle in accordance with good industrial hygiene and safety practice.

#### Information on likely routes of exposure

**Ingestion:** May cause discomfort if swallowed.

**Inhalation:** Prolonged inhalation may be harmful.

**Skin exposure:** Prolonged contact with skin may cause temporary irritation.

**Eye exposure:** Direct contact with eyes may cause temporary irritation.

**Symptoms:** Exposure may cause temporary irritation, redness, or discomfort.

acute toxicity	Due to partial or complete lack of data the classification is not possible
skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible
serious eye damage/irritation	Due to partial or complete lack of data the classification is not possible
respiratory or skin sensitisation	Due to partial or complete lack of data the classification is not possible
germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible

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carcinogenicity	Due to partial or complete lack of data the classification is not possible
reproductive toxicity	Due to partial or complete lack of data the classification is not possible
STOT-single exposure	Due to partial or complete lack of data the classification is not possible
STOT-repeated exposure	Due to partial or complete lack of data the classification is not possible
aspiration hazard	Due to partial or complete lack of data the classification is not possible

## **SECTION 12: Ecological information**

### **12.1 Toxicity**

No data available

### **12.2 Persistence and degradability**

No data available

### **12.3 Bioaccumulative potential**

#### **Bioconcentration factor (BCF)**

No data available

#### **n-octanol/water (log K<sub>ow</sub>)**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Results of PBT and vPvB assessment**

This product does not contain a PBT or vPvB or substances.

### **12.6 Other adverse effects**

This product may effect the pH in aquatic environment and risk adverse effect on water organisms. See pH specification under subsection 9.1.

## **SECTION 13: Disposal considerations**

### **13.1 Waste treatment methods**

#### **Residual waste**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

#### **Contaminated packaging**

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

#### **EU waste code**

The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

#### **Disposal methods/information**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

#### **Special precautions**

Dispose in accordance with all applicable regulations.

## **SECTION 14: Transport information**

### **14.1 UN number**

ADR/RID: Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

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**14.2 UN proper shipping name***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***14.3 Transport hazard class(es)***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***14.4 Packaging group***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***14.5 Environmental hazards***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***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 Regulations**

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**  
Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry**  
Not listed.

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**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

**Authorisations Regulation**

**(EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**  
Not listed.

**Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**  
Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**

Not listed.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding**

Not listed.

**Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances**  
Not listed.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

Not listed.

**Directive 94/33/EC on the protection of young people at work**

Not listed.

**Other regulations**

The product is classified and labelled in accordance with EG 1272/2008 (CLP regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended.

**National regulations**

Follow national regulation for work with chemical agents.

**SECTION 16: Other information****List of abbreviations**

**CLP:** Classification, Labelling and Packaging

**AND:** Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

**RID:** Regulations Concerning the International Transport of Dangerous Goods by Rail

**ADR:** European Agreement concerning the International Carriage of Dangerous Goods by Road

**IATA:** International Air Transport Association

**IMDG:** International Maritime Code for Dangerous Goods

**IBC Code:** International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

**Marpol:** International Convention for the Prevention of Pollution from Ships

**PBT:** Persistent, bioaccumulative and toxic

**vPvB:** Very persistent and very bioaccumulative

**References**

**ACGIH's documentation of the Threshold Limit Values and Biological Exposure Indices**

**EPA (Environmental Protection Agency)**



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**HSDB®-Hazardous Substances Data Bank**

**IARC- monographs on the carcinogenic risks to humans**

**National toxicology program(NTP) report on carcinogen**

**Information on evaluation method leading to the classification of mixture**

*The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.*

**Full text of any H-statements not written out in full under Sections 2 to 15**

*None.*

**Training information**

*Follow training instructions when handling this material.*

*This revision is updated to comply with the latest regulations of (EC) No 1907/2006. No changes have been made in classification of the product.*

*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. It characterises the product with regard to the appropriate safety precautions.*

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

**1.1 Product identifier**

Trade name:  
Luciferin Substrate  
Article number:  
61-101

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

Reagent for analysis  
For additional information on uses please refer to the BioThema AB website (<https://biothema.com>) or e-mail us at [support@biothema.com](mailto:support@biothema.com)

**1.3 Details of the supplier of the safety data sheet**

Biothema AB  
Handens stationsväg 17  
136 40 Handen  
Sweden  
+46 (0)8 7770020  
Email address: [support@biothema.com](mailto:support@biothema.com)  
MSDS author: BioThema AB

**1.4 Emergency telephone number**

Emergency telephone #: 112  
Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

This mixture is not classified as dangerous according to Regulation (EC) No 1272/2008.

**2.2 Label elements**

Labeling according to Regulation (EC) No 1272/2008.  
The product is classified and labelled according to the CLP regulation.  
Pictograms: Void  
Signal Word: Void  
Hazard statement(s)  
Void  
Precautionary statement(s)  
Void

**2.3 Other Hazards**

None known  
Results of PBT and vPvB assessment in accordance with Annex XIII of (EC) No 1907/2006:  
This mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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**SECTION 3: Composition/information on ingredients****3.1 Substances***Not applicable***3.2 Mixtures***Solid. No disclosure requirement according to Regulation (EC) No 1272/2008*

<b>EC</b>	<b>CAS</b>	<b>Chemical name</b>	<b>Percent</b>

**SECTION 4: First aid measures****4.1 Description of first aid measures***Personal protective equipment for first aid responders is not required.**No immediate medical attention required.**After inhalation: Supply fresh air; consult doctor in case of complaints.**After skin contact: The product might cause skin irritation; good practice is to remove contaminated clothing and rinse skin with water.**After eye contact: Rinse opened eye for several minutes under running water as a precaution. Remove contact lenses.**After ingestion: Drink water (two glasses at most). Consult doctor if feeling unwell.**If these recommendations are not followed the exposed person could experience a delayed eye irritation and skin irritation.***4.2 Most important symptoms and effects, both acute and delayed***May cause irritation. We have no further description of any symptoms.***4.3 Indication of any immediate medical attention and special treatment needed***No information available.***SECTION 5: Firefighting measures****5.1 Extinguishing media***Suitable extinguishing media:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use extinguishing media that is appropriate to the local surrounding environment and circumstance.**Unsuitable extinguishing media:**For this product no limitations of extinguishing media are given.*

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**5.2 Special hazards arising from the substance or mixture:***No data available***5.3 Advice for firefighters:***Wear protective clothing for firefighters. Wear self-contained breathing apparatus for firefighting if necessary.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures:***Advice for non-emergency personnel:**Wear suitable protective equipment as specified in SECTION 8**Advice for emergency personnel:**Wear suitable protective equipment as specified in SECTION 8***6.2 Environmental precautions***Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up***Sweep up/absorb with any liquid-binding material and dispose according to section 13.***6.4 Reference to other sections***See section 7 for safe handling**See section 13 for disposal information***SECTION 7: Handling and storage****7.1 Precautions for safe handling:***Advice on safe handling:**No special measures required**Advice on hygiene measures:**Good practice is to wash hands before and after working with this mixture. Change contaminated clothing.***7.2 Conditions for safe storage, including any incompatibilities***Storage conditions:**Keep product fully closed**See product label for recommended storage temperature***7.3 Specified end use(s)***See subsection 1.2.***SECTION 8: Exposure controls/personal protection****8.1 Control parameters***Components with workplace control parameters:**None*

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## 8.2 Exposure controls

*Engineering controls:*

*General industrial hygiene practice.*

*Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.*

*Individual protection measures:*

*Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Considerations to specific work environment where the product is used should be made.*

*Eye/face protection:*

*Safety glasses tested and approved under standards such as EN 166(EU).*

*Skin protection:*

*Wear appropriate chemical resistant gloves. We recommend single use vinyl gloves. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.*

*Wear lab coat or suitable protective clothing.*

*Respiratory protection:*

*Not required normally. In case of insufficient ventilation, wear suitable respiratory equipment.*

*Thermal hazards:*

*Wear appropriate thermal protective clothing, when necessary.*

*Environmental exposure controls*

*No special precautionary measures necessary.*

## **SECTION 9: Physical and chemical properties**

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

<i>State of matter:</i>	<i>Solid</i>
<i>Form:</i>	<i>Powder</i>
<i>Colour:</i>	<i>White to pale yellow</i>
<i>Odour:</i>	<i>Odourless</i>
<i>Odour threshold:</i>	<i>No information available. Odourless</i>
<i>pH:</i>	<i>6-8 at 20 °C (68 °F)</i>
<i>Melting point/freezing point:</i>	<i>No information available. Not determined.</i>
<i>Initial boiling point and boiling range:</i>	<i>No information available. Not determined.</i>
<i>Flash point:</i>	<i>Not applicable. Not flammable.</i>
<i>Evaporation rate:</i>	<i>No information available. Not determined.</i>
<i>Flammability (solid, gas):</i>	<i>Not applicable. Not flammable.</i>
<i>Upper/lower flammability or explosive limits:</i>	<i>Not applicable. Not flammable.</i>
<i>Vapour pressure:</i>	<i>No information available. Not determined.</i>
<i>Vapour density:</i>	<i>No information available. Not determined.</i>
<i>Relative density:</i>	<i>No information available. Not determined.</i>
<i>Solubility(ies):</i>	<i>Fully miscible in water</i>
<i>Partition coefficient: n-octanol/water:</i>	<i>No information available. Not determined.</i>

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Auto-ignition temperature:  
 Decomposition temperature:  
 Viscosity:  
 Explosive properties:  
 Oxidising properties.

Not applicable. Not flammable.  
 No information available. Not determined.  
 No information available. Not determined.  
 Not classified as explosive.  
 None

#### 9.2. Other Information

No relevant additional information available.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

#### 10.2 Chemical stability

Material is stable under normal conditions.

#### 10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

#### 10.4 Conditions to avoid

Contact with incompatible materials. Do not heat closed container. Do not pressurize container.

#### 10.5 Incompatible materials

Strong oxidising or reducing agents. Strong acids or strong bases.

#### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### General information

Occupational exposure to the substance or mixture may cause adverse effects.  
 Handle in accordance with good industrial hygiene and safety practice.

##### Information on likely routes of exposure

**Ingestion:** May cause discomfort if swallowed.

**Inhalation:** Prolonged inhalation may be harmful.

**Skin exposure:** Prolonged contact with skin may cause temporary irritation.

**Eye exposure:** Direct contact with eyes may cause temporary irritation.

**Symptoms:** Exposure may cause temporary irritation, redness, or discomfort.

acute toxicity	Due to partial or complete lack of data the classification is not possible
skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible
serious eye damage/irritation	Due to partial or complete lack of data the classification is not possible
respiratory or skin sensitisation	Due to partial or complete lack of data the classification is not possible
germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible
carcinogenicity	Due to partial or complete lack of data the classification is not possible
reproductive toxicity	Due to partial or complete lack of data the classification is not possible
STOT-single exposure	Due to partial or complete lack of data the classification is not possible
STOT-repeated exposure	Due to partial or complete lack of data the classification is not possible

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aspiration hazard

Due to partial or complete lack of data the classification is not possible

**SECTION 12: Ecological information****12.1 Toxicity***No data available***12.2 Persistence and degradability***No data available***12.3 Bioaccumulative potential****Bioconcentration factor (BCF)***No data available***n-octanol/water (log K<sub>ow</sub>)***No data available***12.4 Mobility in soil***No data available***12.5 Results of PBT and vPvB assessment***This product does not contain a PBT or vPvB or substances.***12.6 Other adverse effects***This product may effect the pH in aquatic environment and risk adverse effect on water organisms. See pH specification under subsection 9.1.***SECTION 13: Disposal considerations****13.1 Waste treatment methods****Residual waste***Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.***Contaminated packaging***Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.***EU waste code***The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.***Disposal methods/information***Collect and reclaim or dispose in sealed containers at licensed waste disposal site.***Special precautions***Dispose in accordance with all applicable regulations.***SECTION 14: Transport information****14.1 UN number***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***14.2 UN proper shipping name***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.*

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**14.3 Transport hazard class(es)***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***14.4 Packaging group***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***14.5 Environmental hazards***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***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 Regulations**

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**  
Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry**  
Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

**Authorisations Regulation**

**(EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**  
Not listed.



# Safety data sheet

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

### Luciferin Substrate

Revision: 17.10.2024

Supersedes version issued: N/A

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**

Not listed.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding**

Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances**

Not listed.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

Not listed.

**Directive 94/33/EC on the protection of young people at work**

Not listed.

#### Other regulations

The product is classified and labelled in accordance with EG 1272/2008 (CLP regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended.

#### National regulations

Follow national regulation for work with chemical agents.

## **SECTION 16: Other information**

#### List of abbreviations

**CLP:** Classification, Labelling and Packaging

**AND:** Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

**RID:** Regulations Concerning the International Transport of Dangerous Goods by Rail

**ADR:** European Agreement concerning the International Carriage of Dangerous Goods by Road

**IATA:** International Air Transport Association

**IMDG:** International Maritime Code for Dangerous Goods

**IBC Code:** International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

**Marpol:** International Convention for the Prevention of Pollution from Ships

**PBT:** Persistent, bioaccumulative and toxic

**vPvB:** Very persistent and very bioaccumulative

#### References

**ACGIH's documentation of the Threshold Limit Values and Biological Exposure Indices**

**EPA (Environmental Protection Agency)**

**HSDB®-Hazardous Substances Data Bank**

**IARC- monographs on the carcinogenic risks to humans**

**National toxicology program(NTP) report on carcinogen**

#### Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

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Supersedes version issued: N/A

**Full text of any H-statements not written out in full under Sections 2 to 15**

None.

**Training information**

Follow training instructions when handling this material.

*This revision is updated to comply with the latest regulations of (EC) No 1907/2006. No changes have been made in classification of the product.*

*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. It characterises the product with regard to the appropriate safety precautions.*

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**Tris-EDTA Buffer**

Revision: 30.01.2019

Supersedes version issued: 24.04.2013

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

**1.1 Product identifier**

Trade name:

Tris-EDTA Buffer

Article number:

21-101, 21-103, 21-500

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

Reagent for analysis

For additional information on uses please refer to the BioThema AB website (<https://biothema.com>) or e-mail us at [support@biothema.com](mailto:support@biothema.com)

**1.3 Details of the supplier of the safety data sheet**

Biothema AB

Handens stationsväg 17

136 40 Handen

Sweden

+46 (0)8 7770020

Email address: [support@biothema.com](mailto:support@biothema.com)

MSDS author: BioThema AB

**1.4 Emergency telephone number**

Emergency telephone #: 112

Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

This mixture is not classified as dangerous according to Regulation (EC) No 1272/2008.

**2.2 Label elements**

Labeling according to Regulation (EC) No 1272/2008.

The product is classified and labelled according to the CLP regulation.

Pictograms: Void

Signal Word: Void

Hazard statement(s)

Void

Precautionary statement(s)

Void

**2.3 Other Hazards**

None known

Results of PBT and vPvB assessment in accordance with Annex XIII of (EC) No 1907/2006:

This mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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**SECTION 3: Composition/information on ingredients****3.1 Substances***Not applicable***3.2 Mixtures***Liquid. No disclosure requirement according to Regulation (EC) No 1272/2008*

<b>EC</b>	<b>CAS</b>	<b>Chemical name</b>	<b>Percent</b>

**SECTION 4: First aid measures****4.1 Description of first aid measures***Personal protective equipment for first aid responders is not required.**No immediate medical attention required.**After inhalation: Supply fresh air; consult doctor in case of complaints.**After skin contact: The product might cause skin irritation; good practice is to remove contaminated clothing and rinse skin with water.**After eye contact: Rinse opened eye for several minutes under running water as a precaution. Remove contact lenses.**After ingestion: Drink water (two glasses at most). Consult doctor if feeling unwell.**If these recommendations are not followed the exposed person could experience a delayed eye irritation and skin irritation.***4.2 Most important symptoms and effects, both acute and delayed***May cause irritation. We have no further description of any symptoms.***4.3 Indication of any immediate medical attention and special treatment needed***No information available.***SECTION 5: Firefighting measures****5.1 Extinguishing media***Suitable extinguishing media:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use extinguishing media that is appropriate to the local surrounding environment and circumstance.**Unsuitable extinguishing media:**For this product no limitations of extinguishing media are given.*

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**5.2 Special hazards arising from the substance or mixture:***No data available***5.3 Advice for firefighters:***Wear protective clothing for firefighters. Wear self-contained breathing apparatus for firefighting if necessary.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures:***Advice for non-emergency personnel:**Wear suitable protective equipment as specified in SECTION 8**Advice for emergency personnel:**Wear suitable protective equipment as specified in SECTION 8***6.2 Environmental precautions***Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up***Sweep up/absorb with any liquid-binding material and dispose according to section 13.***6.4 Reference to other sections***See section 7 for safe handling**See section 13 for disposal information***SECTION 7: Handling and storage****7.1 Precautions for safe handling:***Advice on safe handling:**No special measures required**Advice on hygiene measures:**Good practice is to wash hands before and after working with this mixture. Change contaminated clothing.***7.2 Conditions for safe storage, including any incompatibilities***Storage conditions:**Keep product fully closed**See product label for recommended storage temperature***7.3 Specified end use(s)***See subsection 1.2.***SECTION 8: Exposure controls/personal protection****8.1 Control parameters***Components with workplace control parameters:**None*

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**8.2 Exposure controls***Engineering controls:**General industrial hygiene practice.*

*Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.*

*Individual protection measures:*

*Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Considerations to specific work environment where the product is used should be made.*

*Eye/face protection:*

*Safety glasses tested and approved under standards such as EN 166(EU).*

*Skin protection:*

*Wear appropriate chemical resistant gloves. We recommend single use vinyl gloves. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.*

*Wear lab coat or suitable protective clothing.*

*Respiratory protection:*

*Not required normally. In case of insufficient ventilation, wear suitable respiratory equipment.*

*Thermal hazards:*

*Wear appropriate thermal protective clothing, when necessary.*

*Environmental exposure controls*

*No special precautionary measures necessary.*

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<i>State of matter:</i>	<i>Liquid</i>
<i>Form:</i>	<i>Clear liquid</i>
<i>Colour:</i>	<i>Colourless</i>
<i>Odour:</i>	<i>Odourless</i>
<i>Odour threshold:</i>	<i>No information available. Odourless</i>
<i>pH:</i>	<i>6-8 at 20 °C (68 °F)</i>
<i>Melting point/freezing point:</i>	<i>No information available. Not determined.</i>
<i>Initial boiling point and boiling range:</i>	<i>No information available. Not determined.</i>
<i>Flash point:</i>	<i>Not applicable. Not flammable.</i>
<i>Evaporation rate:</i>	<i>No information available. Not determined.</i>
<i>Flammability (solid, gas):</i>	<i>Not applicable. Not flammable.</i>
<i>Upper/lower flammability or explosive limits:</i>	<i>Not applicable. Not flammable.</i>
<i>Vapour pressure:</i>	<i>No information available. Not determined.</i>
<i>Vapour density:</i>	<i>No information available. Not determined.</i>
<i>Relative density:</i>	<i>No information available. Not determined.</i>
<i>Solubility(ies):</i>	<i>Fully miscible in water</i>
<i>Partition coefficient: n-octanol/water:</i>	<i>No information available. Not determined.</i>

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Auto-ignition temperature:  
 Decomposition temperature:  
 Viscosity:  
 Explosive properties:  
 Oxidising properties:

Not applicable. Not flammable.  
 No information available. Not determined.  
 No information available. Not determined.  
 Not classified as explosive.  
 None

**9.2. Other Information**

No relevant additional information available.

**SECTION 10: Stability and reactivity****10.1 Reactivity**

The product is stable and non-reactive under normal conditions of use, storage and transport.

**10.2 Chemical stability**

Material is stable under normal conditions.

**10.3 Possibility of hazardous reactions**

No dangerous reaction known under conditions of normal use.

**10.4 Conditions to avoid**

Contact with incompatible materials. Do not heat closed container. Do not pressurize container.

**10.5 Incompatible materials**

Strong oxidising or reducing agents. Strong acids or strong bases.

**10.6 Hazardous decomposition products**

No hazardous decomposition products are known.

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****General information**

Occupational exposure to the substance or mixture may cause adverse effects.  
 Handle in accordance with good industrial hygiene and safety practice.

**Information on likely routes of exposure**

**Ingestion:** May cause discomfort if swallowed.

**Inhalation:** Prolonged inhalation may be harmful.

**Skin exposure:** Prolonged contact with skin may cause temporary irritation.

**Eye exposure:** Direct contact with eyes may cause temporary irritation.

**Symptoms:** Exposure may cause temporary irritation, redness, or discomfort.

acute toxicity

Due to partial or complete lack of data the classification is not possible

skin corrosion/irritation

Due to partial or complete lack of data the classification is not possible

serious eye damage/irritation

Due to partial or complete lack of data the classification is not possible

respiratory or skin sensitisation

Due to partial or complete lack of data the classification is not possible

germ cell mutagenicity

Due to partial or complete lack of data the classification is not possible

carcinogenicity

Due to partial or complete lack of data the classification is not possible

reproductive toxicity

Due to partial or complete lack of data the classification is not possible

STOT-single exposure

Due to partial or complete lack of data the classification is not possible

STOT-repeated exposure

Due to partial or complete lack of data the classification is not possible

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aspiration hazard

Due to partial or complete lack of data the classification is not possible

**SECTION 12: Ecological information****12.1 Toxicity***No data available***12.2 Persistence and degradability***No data available***12.3 Bioaccumulative potential****Bioconcentration factor (BCF)***No data available***n-octanol/water (log K<sub>ow</sub>)***No data available***12.4 Mobility in soil***No data available***12.5 Results of PBT and vPvB assessment***This product does not contain PBT or vPvB substances.***12.6 Other adverse effects***This product may effect the pH in aquatic environment and risk adverse effect on water organisms. See pH specification under subsection 9.1.***SECTION 13: Disposal considerations****13.1 Waste treatment methods****Residual waste***Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.***Contaminated packaging***Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.***EU waste code***The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.***Disposal methods/information***Collect and reclaim or dispose in sealed containers at licensed waste disposal site.***Special precautions***Dispose in accordance with all applicable regulations.***SECTION 14: Transport information****14.1 UN number***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.***14.2 UN proper shipping name***ADR/RID: Not regulated as dangerous goods.**IMDG: Not regulated as dangerous goods.**IATA: Not regulated as dangerous goods.*



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**(EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**  
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**Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

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**Directive 94/33/EC on the protection of young people at work**

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**Other regulations**

The product is classified and labelled in accordance with EG 1272/2008 (CLP regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended.

**National regulations**

Follow national regulation for work with chemical agents.

**SECTION 16: Other information****List of abbreviations**

**CLP:** Classification, Labelling and Packaging

**AND:** Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

**RID:** Regulations Concerning the International Transport of Dangerous Goods by Rail

**ADR:** European Agreement concerning the International Carriage of Dangerous Goods by Road

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**PBT:** Persistent, bioaccumulative and toxic

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**References**

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**EPA (Environmental Protection Agency)**

**HSDB®-Hazardous Substances Data Bank**

**IARC- monographs on the carcinogenic risks to humans**

**National toxicology program(NTP) report on carcinogen**

**Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

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**Full text of any H-statements not written out in full under Sections 2 to 15**

None.

**Training information**

Follow training instructions when handling this material.

*This revision is updated to comply with the latest regulations of (EC) No 1907/2006. No changes have been made in classification of the product.*

*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. It characterises the product with regard to the appropriate safety precautions.*