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## MATERIAL SAFETY DATA SHEET

### 1) Identification

<b>Trade names:</b>	$^2\text{H(D)}^{15}\text{N}$ -labeled Adenosine 5'-triphosphate / Cytidine 5'-triphosphate / Guanosine 5'-triphosphate / Uridine 5'-triphosphate
<b>Article No.:</b>	121503631/121503731/121503632/ 121503732/121503633/121503733/ 121503634/121503734
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<b>Emergency phone number:</b>	+49(0)89 500 941 0 Language: English Monday to Friday From 10:00 to 15:00 (CET)
<b>Recommended use:</b>	research only
<b>Restrictions on use:</b>	not for human use

The product does not meet the specifications of any of the hazard classes outlined by the Globally Harmonized System of Classification and Labelling of Chemicals.\*

Therefore it is not necessary for this MSDS to be in compliance with the GHS.

\*Canada: Schedule 2 of the Hazardous Product Act (R.S.C., 1985, c. H-3), Current to November 20, 2018 last amended on May 23, 2018

\*United States of America: OSHA, 29 CFR 1910.1200(g) and Appendix A and B

### 2) Hazard identification

#### **Hazard classification:**

Not hazardous products within the meaning of Guideline 67/548/EEC

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### **Label elements:**

The product is exempt from the specific labeling requirements on the basis of the calculation procedures of the "General Classification Guidelines for Preparations in the EU" in the latest valid version.

**Signal word:** not required

### **Other hazards:**

not applicable

**Additional information:** Chemicals are by their nature hazardous substances. They are therefore only to be handled by appropriately trained personnel exercising the necessary diligence.

## 3) Composition/Information on ingredients

The product does not contain any hazardous material or substance.

### **Chemical name:**

Adenosine 5'-triphosphate / Cytidine 5'-triphosphate / Guanosine 5'-triphosphate / Uridine 5'-triphosphate

### **Common name/Synonyms:**

rATP / rCTP / rGTP / rUTP

### **Chemical characterization:**

This is a ribonucleoside 5'-triphosphate derived from  $^2\text{H(D)}^{15}\text{N}$ -labelled *Ralstonia eutropha* RNA.

### **Content:**

Highly purified ribonucleoside 5'-triphosphate, a biochemical compound.

## 4) First-aid measures

### **General instructions:**

Remove clothing contaminated with product immediately

### **Inhalation:**

Inhale fresh air

### **Skin contact:**

Wash off immediately with water

### **Contact with eyes:**

Lift eyelids and rinse eyes for 10 minutes under running water. Seek medical attention if discomfort continues.

### **Ingestion:**

Rinse out mouth and have affected person drink a glass of water. Do not induce vomiting. If discomfort continues, consult a medical doctor.

### **Symptoms:**

One may feel slight discomfort after ingesting product.

No other symptoms known.

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### 5) Fire-fighting measures

Product is neither self-igniting nor flammable.

**Extinguish with:**

Consider fire surroundings and choose fire-fighting measures accordingly.

water spray, foam, dry extinguishing powder, carbon dioxide (CO<sub>2</sub>)

**Do not extinguish with:**

water jet

**Equipment for fire-fighting:**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Hazards arising from fire:**

none

### 6) Accidental release measures

**Personal measures/protective equipment:**

Wipe up with absorbent material (e.g. cloth, fleece).

**Environmental measures:**

Do not allow to enter the canalization/surface water/ground water systems.

**Cleansing/absorption material:**

Absorbent material (e.g. cloth, fleece, paper towel).

**Cleansing/absorption procedures:**

Absorb mechanically, clean spill site after absorption (e.g. Ethanol)

### 7) Handling and storage

**Handling:**

**Instructions for safe handling:**

In accordance with laboratory guidelines of Employers' Accident Liability Insurance Association (BG-Chemie).

**Instructions on fire and explosion protection:**

No particular measures required.

**Storage:**

**Requirements for storage areas and containers:**

Keep at room temperature.

**Incompatible materials:**

Store separately from foodstuffs.

**Further information on storage requirements:**

Store in well-sealed containers.

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### **Storage category:**

LGK 10-13. Other liquids and solids.

**Classification according to the Ordinance on Industrial Safety and Health** (Betriebssicherheitsverordnung, BetrSichV).

## **8) Exposure controls/Personal protection**

### **Exposure:**

#### **Occupational exposure:**

not applicable

#### **Biological exposure:**

not applicable

#### **Engineering controls:**

no measures must be taken

#### **Ingredients with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of substances with values that have to be monitored at the workplace.

### **Personal protective equipment:**

#### **General protective and hygiene measures:**

Keep separate from foodstuffs, beverages and animal feed.

Immediately remove soiled or saturated clothing.

Wash hands before breaks and after finishing work.

Avoid contact with the eyes and skin.

#### **Protective gloves**

Since the product is a preparation made up of several substances, the reliability of glove material cannot be predicted in advanced and must therefore be tested before being put into use.

We suggest Chemical protection gloves, which are tested according to EN 374.

#### **Glove material**

The choice of a suitable glove depends not only on the material, but also on other quality characteristics and varies from manufacturer to manufacturer.

We suggest NBR (Nitrile rubber)/thickness: >0,11 mm

#### **Penetration time of the glove material**

Information about the exact penetration time has to be obtained from the manufacturer and must be observed.

We suggest >480 minutes (permeation: level 6)

#### **Eye protection**

Tight-fitting protective goggles

## 9) Physical and chemical properties

**Appearance:**

**Form:** powder  
**Colour:** colourless  
**Odour:** odourless  
**Odour threshold:** No data available

**Melting/Freezing point:** no data available

**Boiling point/boiling range:** no data available

**Flash point:** no data available

**Evaporation rate:** no data available)

**Flammability (solid; gas):** not applicable

**Lower flammable/explosive limit:** The product does not present an explosion hazard

**Upper flammable/explosive limit:** The product does not present an explosion hazard

**Self-igniting:** The product is not self-igniting

**Vapour pressure:** no data available

**Vapour density:** no data available

**Relative density:** no data available

**Solubility:** no data available

**Partition coefficient-n-octanol/water:** no data available

**Auto-ignition temperature:** no data available

**Thermal decomposition / conditions to be avoided:** above 100°C.

**Viscosity:** no data available

## 10) Stability and reactivity

**Reactivity:**

This product is not reactive under normal ambient conditions.

**Chemical stability:**

The product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Conditions to be avoided:**

above 100°C.

**Substances to be avoided:**

There is no additional information on incompatible materials.

**Hazardous reactions:**

There are no known hazardous reactions.

**Hazardous decomposition products:**

None

## 11) Toxicological information

**Acute toxicity:**

**Classification relevant LD/LC50 values:**

There is no quantitative data on the toxicity of this product

**On the skin:**

Not to be classified as corrosive or irritant to skin.

**On the eye:**

Not to be classified as seriously damaging to the eye.

Not to be classified as eye irritant.

**Inhalation:**

Not to be classified as respiratory sensitizer.

**Specific target organ toxicity:**

**Single exposure:**

Not to be classified as specific target toxic on single exposure

**Repeated exposure:**

Not to be classified as specific target toxic on repeated exposure

**Symptoms:**

**On skin:**

no data available

**Swallowed:**

no data available

**Inhaled:**

no data available

**Further information:** The product is to be handled with the care necessary when dealing with chemicals.

## 12) Ecological information

**General information:**

Water hazard class 1 (self-estimate): low water hazard

Not to be allowed to enter into groundwater, watercourses or canalization.

**Aquatic toxicity:**

We have no quantitative data on the ecological effects of this product.

**Degradability:**

The product is biodegradable.

**Mobility in Soil**

no data available

**Bioaccumulative potential**

No significant accumulation in organisms.

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### 13) Disposal considerations

**Product:**

**Recommendation:**

Waste disposal requirements vary among the federal states and local councils, so that inquiries should be made about the type of waste disposal at the local authority in question.

**Soiled packaging:**

**Recommendation:** Disposal according to official regulations.

### 14) Transport information

**Land transport ADR/RID and GGVS/GGVE (crossborder/inland): -**

**ADR/RID-GGVS/E Class: -**

**Remarks:** Not subject to transport regulations.

### 15) Regulatory information

**Identification according to EEC guidelines:**

According to EEC guidelines/GefStoffV, there are no specific identification requirements for the product.

**National regulations:**

**Classification according to the Ordinance on Industrial Safety and Health** (Betriebssicherheitsverordnung, BetrSichV)

**Water hazard class:** Water hazard class 1 (self estimate): low water hazard.

### 16) Other information

Information is based on our present knowledge; this shall not constitute a guarantee for any product features nor establish a contractual legal relationship.

**Datasheet-issuing department:** Product management

**Contact person:** Dr. Heumann

**Date of latest revision:** 17.12.2018