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A Geno Technology, Inc. (USA) brand name

# Safety Data Sheet

## 4-Methylumbelliferyl phosphate, bis (cyclohexylammonium) salt, trihydrate

Cat. # RC-357



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# 4-Methylumbelliferyl phosphate, bis(cyclohexylammonium) salt, trihydrate

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Date of issue: 4/27/2016 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 9.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Substance  
Substance name : 4-Methylumbelliferyl phosphate, bis(cyclohexylammonium) salt, trihydrate  
Chemical name : C10H9O6P.2C6H13N  
CAS-No. : 128218-53-1  
Product code : 558A

#### 1.2. Other means of identification

No additional information available

#### 1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Research and development

#### 1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.  
9800 Page Avenue  
St. Louis, MO 63132-1429, USA  
Tel.1-800-628-7730  
[www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2 Hazard Identification

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

##### GHS US classification

Not classified

#### 2.2. Label elements

##### GHS US labeling

No labeling applicable

#### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

#### 2.4. Hazards not otherwise classified

No additional information available

#### 2.5. Unknown acute toxicity

No additional information available

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### SECTION 3 Composition/information on ingredients

#### 3.1. Substances

| Name  | Common Name (Synonyms) | Product identifier   | %   | GHS US classification |
|---|------------------------|----------------------|-----|-----------------------|
| 4-Methylumbelliferyl phosphate, bis(cyclohexylammonium) salt, trihydrate (Main constituent) |                        | CAS-No.: 128218-53-1 | 100 | Not classified        |

Full text of hazard classes and H-statements : see section 16

#### 3.2. Mixtures

Not applicable

### SECTION 4 First aid measures

#### 4.1. Description of necessary first-aid measures

|                                       |   |
|---------------------------------------|---|
| First-aid measures general            | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).                 |
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.            |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water. |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.  |
| First-aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.              |
| Self protection of the first-aider    | : First aid workers will be equipped with suitable personal protective equipment.   |

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

|   |   |
|---|---|
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.   |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use.  |
| Symptoms/effects after inhalation                   | : None under normal conditions. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure. |
| Symptoms/effects after skin contact                 | : None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.                 |
| Symptoms/effects after eye contact                  | : None under normal conditions. Dust from this product may cause eye irritation.  |
| Symptoms/effects after ingestion                    | : None under normal conditions.   |

#### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

|                                   |                          |
|-----------------------------------|--------------------------|
| Other medical advice or treatment | : Treat symptomatically. |
|-----------------------------------|--------------------------|

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

|                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | : Foam. Dry powder. Carbon dioxide. Water spray. Sand. |
| Unsuitable extinguishing media | : Do not use a heavy water stream.                     |

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### 5.2. Specific hazards arising from the chemical

|  |                                |
|--|--------------------------------|
| Fire hazard                                      | : No fire hazard.              |
| Explosion hazard                                 | : No direct explosion hazard.  |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

### 5.3. Special protective equipment and precautions for fire-fighters

|                                |   |
|--------------------------------|---|
| Firefighting instructions      | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.                          |

## SECTION 6 Accidental release measures

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

|                  |   |
|------------------|---|
| General measures | : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage. |
|------------------|---|

#### For non-emergency personnel

|                      |  |
|----------------------|--|
| Protective equipment | : Wear recommended personal protective equipment.          |
| Emergency procedures | : Ventilate spillage area. Evacuate unnecessary personnel. |

#### For emergency responders

|                           |  |
|---------------------------|--|
| Protective equipment      | : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection". |
| Emergency procedures      | : Ventilate area. Evacuate unnecessary personnel.  |
| Environmental precautions | : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.  |

### 6.2. Methods and materials for containment and cleaning up

|                         |  |
|-------------------------|--|
| For containment         | : Using a clean shovel, put the material in a dry container and cover without compressing it.  |
| Methods for cleaning up | : Mechanically recover the product. On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials. |
| Other information       | : Dispose of materials or solid residues at an authorized site.  |

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

|                                   |  |
|-----------------------------------|--|
| Precautions for safe handling     | : Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. |
| Hygiene measures                  | : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.  |
| Additional hazards when processed | : Not expected to present a significant hazard under anticipated conditions of normal use.   |

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### 7.2. Conditions for safe storage, including incompatibilities

|                        |  |
|------------------------|--|
| Technical measures     | : Keep in a cool, well-ventilated place away from heat.  |
| Storage conditions     | : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. |
| Incompatible products  | : Strong bases. Strong acids.  |
| Incompatible materials | : Sources of ignition. Direct sunlight.  |
| Storage temperature    | : -20 °C   |
| Packaging materials    | : Store always product in container of same material as original container.  |

## SECTION 8 Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Appropriate engineering controls

|                                  |  |
|----------------------------------|--|
| Appropriate engineering controls | : Ensure good ventilation of the work station. |
| Environmental exposure controls  | : Avoid release to the environment.            |

### 8.3. Individual protection measures, such as personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

|   |
|---|
| <b>Hand protection:</b>   |
| Protective gloves. Wear protective gloves.  |
| <b>Eye protection:</b>  |
| Chemical goggles or safety glasses. Safety glasses  |
| <b>Skin and body protection:</b>  |
| Wear suitable protective clothing   |
| <b>Respiratory protection:</b>  |
| In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask |

#### Personal protective equipment symbol(s):



#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9 Physical and chemical properties

### 9.1. Basic physical and chemical properties

|                |                       |
|----------------|-----------------------|
| Physical state | : Solid               |
| Appearance     | : Crystalline powder. |
| Color          | : White to off-white  |
| Odor           | : characteristic      |
| Odor threshold | : No data available   |

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|   |  |
|---|--|
| pH  | : No data available                      |
| Melting point                                   | : 195 – 197 °C                           |
| Freezing point                                  | : Not applicable                         |
| Boiling point                                   | : No data available                      |
| Flash point                                     | : Not applicable                         |
| Flammability (solid, gas)                       | : Non flammable.                         |
| Vapor pressure                                  | : No data available                      |
| Relative vapor density at 20°C                  | : No data available                      |
| Relative density                                | : No data available                      |
| Molecular mass                                  | : 454.5 g/mol                            |
| Solubility                                      | : Soluble in methanol. Soluble in water. |
| Partition coefficient n-octanol/water (Log Pow) | : No data available                      |
| Auto-ignition temperature                       | : Not applicable                         |
| Decomposition temperature                       | : No data available                      |
| Viscosity, kinematic                            | : Not applicable                         |
| Explosion limits                                | : Not applicable                         |
| Particle characteristics                        | : No data available                      |

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

## SECTION 10 Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

Stable under normal conditions. Not established.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

## SECTION 11 Toxicological information

### 11.1. Information on toxicological effects

|                                   |                  |
|-----------------------------------|------------------|
| Acute toxicity (oral)             | : Not classified |
| Acute toxicity (dermal)           | : Not classified |
| Acute toxicity (inhalation)       | : Not classified |
| Skin corrosion/irritation         | : Not classified |
| Serious eye damage/irritation     | : Not classified |
| Respiratory or skin sensitization | : Not classified |

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|                        |                  |
|------------------------|------------------|
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity        | : Not classified |
| Reproductive toxicity  | : Not classified |
| STOT-single exposure   | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard      | : Not classified |

### 4-Methylumbelliferyl phosphate, bis(cyclohexylammonium) salt, trihydrate (128218-53-1)

|   |   |
|---|---|
| Viscosity, kinematic                                | Not applicable  |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.   |
| Symptoms/effects                                    | : Not expected to present a significant hazard under anticipated conditions of normal use.  |
| Symptoms/effects after inhalation                   | : None under normal conditions. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure. |
| Symptoms/effects after skin contact                 | : None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.                 |
| Symptoms/effects after eye contact                  | : None under normal conditions. Dust from this product may cause eye irritation.  |
| Symptoms/effects after ingestion                    | : None under normal conditions.   |

## SECTION 12 Ecological information

### 12.1. Ecotoxicity

|   |  |
|---|--|
| Ecology - general   | : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. |
| Hazardous to the aquatic environment, short-term (acute)  | : Not classified   |
| Hazardous to the aquatic environment, long-term (chronic) | : Not classified   |

### 12.2. Persistence and degradability

#### 4-Methylumbelliferyl phosphate, bis(cyclohexylammonium) salt, trihydrate (128218-53-1)

|                               |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

### 12.3. Bioaccumulative potential

#### 4-Methylumbelliferyl phosphate, bis(cyclohexylammonium) salt, trihydrate (128218-53-1)

|                           |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

|                              |                                     |
|------------------------------|-------------------------------------|
| Ozone                        | : Not classified                    |
| Fluorinated greenhouse gases | : No                                |
| Other information            | : Avoid release to the environment. |

## SECTION 13 Disposal considerations

|                              |  |
|------------------------------|--|
| Regional legislation (waste) | : Disposal must be done according to official regulations. |
|------------------------------|--|

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|  |  |
|--|--|
| Waste treatment methods                    | : Waste treatment methods.   |
| Sewage disposal recommendations            | : Disposal must be done according to official regulations.   |
| Product/Packaging disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. Disposal must be done according to official regulations. |
| Additional information                     | : Do not re-use empty containers.  |
| Ecological waste information               | : Avoid release to the environment.  |

### SECTION 14 Transport information

In accordance with DOT / TDG / IATA

#### 14.1. UN number

Not regulated for transport

#### 14.2. UN Proper Shipping Name

|                             |                 |
|-----------------------------|-----------------|
| Proper Shipping Name (DOT)  | : Not regulated |
| Proper Shipping Name (TDG)  | : Not regulated |
| Proper Shipping Name (IATA) | : Not regulated |

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT) : Not regulated

##### TDG

Transport hazard class(es) (TDG) : Not regulated

##### IATA

Transport hazard class(es) (IATA) : Not regulated

#### 14.4. Packing group

|                      |                 |
|----------------------|-----------------|
| Packing group (DOT)  | : Not regulated |
| Packing group (TDG)  | : Not regulated |
| Packing group (IATA) | : Not regulated |

#### 14.5. Environmental hazards

Other information : No supplementary information available.

#### 14.6. Transport in bulk

Not applicable

#### 14.7. Special precautions for user

##### DOT

Not regulated

##### TDG

Not regulated

##### IATA

Not regulated

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### SECTION 15 Regulatory information

#### 15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

| Name   | CAS-No.     | Listing     | Commercial status | Flags |
|--|-------------|-------------|-------------------|-------|
| 4-Methylumbelliferyl phosphate, bis(cyclohexylammonium) salt, trihydrate | 128218-53-1 | Not present | -                 |       |

#### 15.2. International regulations

##### CANADA

No additional information available

##### EU-Regulations

No additional information available

##### National regulations

No additional information available

#### 15.3. State regulations

No additional information available

### SECTION 16 Other information

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Revision date : 1/17/2025  
Date of issue : 4/27/2016  
Other information : None.

| Abbreviations and acronyms |   |
|----------------------------|---|
| ACGIH                      | American Conference of Government Industrial Hygienists   |
| ADN                        | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR                        | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| ATE                        | Acute Toxicity Estimate   |
| BCF                        | Bioconcentration factor   |
| BLV                        | Biological limit value  |
| BOD                        | Biochemical oxygen demand (BOD)   |
| CAS-No.                    | Chemical Abstract Service number  |
| CLP                        | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                     |
| COD                        | Chemical oxygen demand (COD)  |
| CSA                        | Chemical safety assessment  |
| DMEL                       | Derived Minimal Effect level  |
| DNEL                       | Derived-No Effect Level   |
| EC-No.                     | European Community number   |

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| Abbreviations and acronyms |  |
|----------------------------|--|
| EC50                       | Median effective concentration   |
| ED                         | Endocrine disruptor  |
| EN                         | European Standard  |
| EWC                        | European waste catalogue   |
| IARC                       | International Agency for Research on Cancer                                  |
| IATA                       | International Air Transport Association                                      |
| IMDG                       | International Maritime Dangerous Goods                                       |
| LC50                       | Median lethal concentration  |
| LD50                       | Median lethal dose   |
| LOAEL                      | Lowest Observed Adverse Effect Level   |
| Log Kow                    | Partition coefficient n-octanol/water (Log Kow)                              |
| Log Pow                    | Partition coefficient n-octanol/water (Log Pow)                              |
| MAK                        | maximum workplace concentration  |
| NOAEC                      | No-Observed Adverse Effect Concentration                                     |
| NOAEL                      | No-Observed Adverse Effect Level   |
| NOEC                       | No-Observed Effect Concentration   |
| N.O.S.                     | Not Otherwise Specified  |
| OECD                       | Organisation for Economic Co-operation and Development                       |
| OEL                        | Occupational Exposure Limit  |
| OSHA                       | Occupational Safety & Health Administration                                  |
| PBT                        | Persistent Bioaccumulative Toxic   |
| PNEC                       | Predicted No-Effect Concentration  |
| PPE                        | Personal protection equipment  |
| RID                        | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS                        | Safety Data Sheet  |
| STP                        | Sewage treatment plant   |
| TF                         | Technical function   |
| ThOD                       | Theoretical oxygen demand (ThOD)   |
| TLM                        | Median Tolerance Limit   |
| TWA                        | Time Weighted Average  |
| VOC                        | Volatile Organic Compounds   |
| vPvB                       | Very Persistent and Very Bioaccumulative                                     |
| UFI                        | Unique Formula Identifier  |

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.