1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Chemical Name: Hopantenate Calcium

Catalogue #: H669565

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Uses: To be used only for scientific research and development. Not for use in humans or animals.

1.3 Details of the Supplier of the Safety Data Sheet

Company: Toronto Research Chemicals
2 Brisbane Road
Toronto, ON M3J 2J8
CANADA

Telephone: +141666569696
FAX: +14166654439
Email: orders@trc-canada.com

1.4 Emergency Telephone Number

Emergency #: +14166659696 between 0800-1700 (GMT-5)

2. HAZARDS IDENTIFICATION

WHMIS Classification (Canada)          WHMIS Symbols (Canada)
D2B     Toxic Material Causing Other Toxic Effects
        Moderate Skin/Eye/Respiratory Tract Irritant

2.1/2.2 Classification of the Substance or Mixture and Label Elements

GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Skin Irritation (Category 2)
Serious Eye Irritation (Category 2)
Specific Target Organ Toxicity, Single Exposure; Respiratory Tract Irritation (Category 3)

EU Classification (According to EU Regulation 67/548/EEC)

Irritating to eyes, respiratory system and skin.

EU Risk and Safety Statements (According to EU Regulation 67/548/EEC)

Hazard Statements: 
Irritant

Hazard Codes: 
Xi

Risk Codes and Phrases
R36/37/38     Irritating to eyes, respiratory system and skin.

Safety Precaution Codes and Phrases
S24/25     Avoid contact with skin and eyes.
S37/39     Wear suitable gloves and eye/face protection.
S63     In case of accident by inhalation, remove casualty to fresh air and keep at rest.
If medical attention is required, show this safety data sheet to the doctor.

**If Inhaled**
If inhaled, move casualty to fresh air. If not breathing, give artificial respiration and consult a physician.

**In Case of Skin Contact**
Wash affected area with soap and water. Consult a physician if any exposure symptoms are observed.

**In Case of Eye Contact**
Immediately rinse eyes with plenty of water for at least 15 minutes. Consult a physician.

**If Swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

**Signal Word** Warning

**GHS Hazard Statements**
- **H315**: Causes skin irritation.
- **H319**: Causes serious eye irritation.
- **H335**: May cause respiratory irritation.

**GHS Precautionary Statements**
- **P261**: Avoid breathing dust/fume/gas/mist/vapours/spray.
- **P280**: Wear protective gloves/protective clothing/eye protection/face protection.
- **P302/P352**: IF ON SKIN: Wash with plenty of soap and water
- **P305/P351/P338**: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### 2.3 Unclassified Hazards/Hazards Not Otherwise Classified
No data available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances
- **Molecular Formula**: C₂₀H₃₆CaN₂O₁₀
- **Molecular Weight**: 504.59
- **CAS Registry #:**: 17097-76-6

**Synonyms**
- 4-[(2R)-2,4-Dihydroxy-3,3-dimethyl-1-oxobutyl]amino]butanoic Acid Calcium Salt (2:1); 4-(2,4-Dihydroxy-3,3-dimethylbutyramido)butyric Acid Calcium Salt (2:1); Calcium D-(+)-Homopantothenate; Calcium Homopantothenate; Calcium Hopantenate; D-(+)-Homopantothenic Acid Calcium Salt; Pantocalcin; Pantogam; Vivant

**EC#:**

### 3.2 Mixtures
Not a mixture

### 4. FIRST AID MEASURES

#### 4.1 Description of First Aid Measures
**General Advice**
If medical attention is required, show this safety data sheet to the doctor.

**If Inhaled**
If inhaled, move casualty to fresh air. If not breathing, give artificial respiration and consult a physician.

**In Case of Skin Contact**
Wash affected area with soap and water. Consult a physician if any exposure symptoms are observed.

**In Case of Eye Contact**
Immediately rinse eyes with plenty of water for at least 15 minutes. Consult a physician.

**If Swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

#### 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
No data available

### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing Media
**Suitable Extinguishing Media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures
Use recommended personal protective equipment (see Section 8). Prevent the formation of dusts and mists. Adequate ventilation must be provided to ensure dusts or mists are not inhaled.

6.2 Environmental Precautions
Material should not be allowed to enter the environment. Prevent further spillage or discharge into drains, if safe to do so.

6.3 Methods and Materials for Containment and Cleaning Up
Contain the spill and then collect using non-combustible absorbent material (such as clay, diatomaceous earth, vermiculite or other appropriate material). Place material in a suitable, sealable container and then dispose according to local/national regulations and guidance (see Section 13).

For protective equipment, refer to Section 8. For disposal, see Section 13.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling
Avoid contact with skin and eyes. Ventilation and proper handling are to be used to prevent the formation of dusts and mists. Normal measures for preventative fire protection. No smoking, eating or drinking around this material. Wash hands after use.

7.2 Conditions for Safe Storage, Including any Incompatibilities
Ensure container is kept securely closed before and after use. Keep in a well ventilated area and do not store with strong oxidizers or other incompatible materials (see Section 10).

Storage conditions: No Data Available

7.3 Specific End Uses
For scientific research and development only. Not for use in humans or animals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters
Contains no components with established occupational exposure limits.

8.2 Exposure Controls
Appropriate Engineering Controls
A laboratory fume hood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

Personal Protective Equipment
All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

Eye/Face Protection
Safety glasses or safety goggles. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

Skin Protection
Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as "low chemical resistant" or "waterproof" by EU standard EN 374. Unrated gloves are not recommended. Suggested gloves: AnsellPro nitrile gloves style 92-500 or 92-600, 5 mil thickness.
Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated “chemical resistant” as per EN 734 with the resistance codes corresponding to the anticipated use of the material.


Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

**Body Protection**

Fire resistant (Nomex) lab coat or coveralls.

**Respiratory Protection**

Recommended respirators are NIOSH-approved N95 or CEN-approved FFP2 particulate respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>A) Appearance</th>
<th>B) Odour</th>
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<table>
<thead>
<tr>
<th>C) Odour Threshold</th>
<th>D) pH</th>
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<table>
<thead>
<tr>
<th>E) Melting Point/Freezing Point</th>
<th>F) Initial Boiling Point/Boiling Range</th>
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<table>
<thead>
<tr>
<th>G) Flash point</th>
<th>H) Evaporation Rate</th>
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</thead>
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<table>
<thead>
<tr>
<th>I) Flammability (Solid/Gas)</th>
<th>J) Upper/Lower Flammability/Explosive Limits</th>
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<table>
<thead>
<tr>
<th>K) Vapour Pressure</th>
<th>L) Vapour Density</th>
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<table>
<thead>
<tr>
<th>M) Relative Density</th>
<th>N) Solubility</th>
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<thead>
<tr>
<th>O) Partition Coefficient: n-octanol/water</th>
<th>P) Auto-Ignition Temperature</th>
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<td>No data available</td>
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<table>
<thead>
<tr>
<th>Q) Decomposition Temperature</th>
<th>R) Viscosity</th>
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<tbody>
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<table>
<thead>
<tr>
<th>S) Explosive Properties</th>
<th>T) Oxidizing Properties</th>
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</thead>
<tbody>
<tr>
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<td>No data available</td>
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</tbody>
</table>

#### 9.2 Other Information

no data available

### 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

No data available

#### 10.5 Incompatible Materials

Strong oxidizing agents.

#### 10.6 Hazardous Decomposition Products

No data available
11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

A) Acute Toxicity
   No data available

B) Skin Corrosion/Irritation
   No data available

C) Serious Eye Damage/Irritation
   No data available

D) Respiratory or Skin Sensitization
   No data available

E) Germ Cell Mutagenicity
   No data available

F) Carcinogenicity
   No data available

G) Reproductive Toxicity/Teratogenicity
   No data available

H) Single Target Organ Toxicity - Single Exposure
   No data available

I) Single Target Organ Toxicity - Repeated Exposure
   No data available

J) Aspiration Hazard
   No data available

K) Potential Health Effects and Routes of Exposure

   Inhalation
   May be harmful if inhaled. Causes respiratory tract irritation.

   Ingestion
   May be harmful if swallowed.

   Skin
   May be harmful if absorbed through skin. Causes skin irritation.

   Eyes
   Causes eye irritation.

L) Signs and Symptoms of Exposure
   No data available

   To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

M) Additional Information
   RTECS: Not listed

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
   No data available

12.6 Other Adverse Effects
   No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods
A) Product
Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding the disposal and destruction of this material are followed.

B) Contaminated Packaging
Dispose of as above.

C) Other Considerations
Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

### 14. TRANSPORT INFORMATION

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<tr>
<th>14.1 UN Number</th>
<th>DOT (US): N/A</th>
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<table>
<thead>
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<th>14.2 UN Proper Shipping Name</th>
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<tr>
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<table>
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<th>IMDG: N/A</th>
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<thead>
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</table>

<table>
<thead>
<tr>
<th>14.6 Special Precautions for User</th>
</tr>
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<tbody>
<tr>
<td>None</td>
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</tbody>
</table>

### 15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

#### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

**A) Canada**
- **DSL/NDSL Status:** This product is not listed on the Canadian DSL/NDSL.

**B) United States**
- **TSCA Status:** This product is not listed on the US EPA TSCA.

**C) European Union**
- **ECHA Status:** This product is not registered with the EU ECHA.

#### 15.2 Chemical Safety Assessment

- No data available

### 16. OTHER INFORMATION

#### 16.1 Revision History

Original Publication Date: 4/20/2015

#### 16.2 List of Abbreviations

- **LD50** Median lethal dose of a substance required to kill 50% of a test population.
- **LC50** Medial lethal concentration of a substance required to kill 50% of a test population.
- **LDLo** Lowest known lethal dose
- **TDLo** Lowest known toxic dose
- **IARC** International Agency for Research on Cancer
- **NTP** National Toxicology Program
- **RTECS** Registry of Toxic Effects of Chemical Substances

#### 16.3 Further Information

Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.