



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
OSHA HCS2012

Revision date 11-Apr-2022

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** Ramiprilat (Ramipril Diacid)

### Other means of identification

**Product Code(s)** LGCFOR0448.01

**Synonyms** None

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

**Recommended use** Laboratory use

**Restrictions on use** Not to be used for human or animal consumption

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

#### Supplier Address

VHG  
LGC Standards  
276 Abby Road  
Manchester, NH 03103  
UNITED STATES OF AMERICA

Tel : +1 (603) 622-7660  
Fax : +1 (603) 622-5180  
Email : lgcusa@lgcgroup.com

Web : lgcstandards.com

**E-mail** sds-request@lgcgroup.com

### Emergency telephone number

#### **Emergency Telephone**

For Hazardous Materials or Dangerous Goods Incident  
Spill, Leak, Fire Exposure, or Accident  
Call CHEMTREC:  
USA & Canada 1-800-424-9300  
Rest of the world +1 703-741-5970

## 2. Hazard(s) identification

### Classification



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Classified according to OSHA.

|                                                  |             |
|--------------------------------------------------|-------------|
| Skin corrosion/irritation                        | Category 2  |
| Serious eye damage/eye irritation                | Category 2A |
| Reproductive toxicity                            | Category 1B |
| Specific target organ toxicity (single exposure) | Category 3  |

## **Hazards not otherwise classified (HNOC)**

Not applicable

## **Label elements**

### **Danger**

#### **Hazard statements**

Classified according to OSHA.

Causes skin irritation

Causes serious eye irritation

May damage fertility or the unborn child

May cause respiratory irritation



### **Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

### **Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

IF eye irritation persists: Get medical advice/attention

IF ON SKIN: Wash with plenty of water and soap

IF skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

### **Precautionary Statements - Storage**

Store locked up



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Store in a well-ventilated place. Keep container tightly closed

## **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

## **Other information**

No information available.

## **3. Composition/information on ingredients**

### **Substance**

**Formula** C<sub>21</sub> H<sub>28</sub> N<sub>2</sub> O<sub>5</sub>

| Chemical name | CAS No     | Weight-% | Trade secret |
|---------------|------------|----------|--------------|
| Ramiprilat    | 87269-97-4 | 100      | *            |

## **4. First-aid measures**

### **Description of first aid measures**

|                                           |                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>                     | Show this safety data sheet to the doctor in attendance.                                                                                                                                                                                                                            |
| <b>Inhalation</b>                         | Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.                                                                                                                                                    |
| <b>Eye contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists. |
| <b>Skin contact</b>                       | Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.                                                                                                                                              |
| <b>Ingestion</b>                          | Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.                                                                                                                                                                       |
| <b>Self-protection of the first aider</b> | Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).                                                                                                                                                                                       |

### **Most important symptoms and effects, both acute and delayed**

**Symptoms** May cause redness and tearing of the eyes. Burning sensation.

### **Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.



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## 5. Fire-fighting measures

|                                                                       |                                                                                                                                    |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>                                   | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.                            |
| <b>Large Fire</b>                                                     | CAUTION: Use of water spray when fighting fire may be inefficient.                                                                 |
| <b>Unsuitable extinguishing media</b>                                 | Do not scatter spilled material with high pressure water streams.                                                                  |
| <b>Specific hazards arising from the chemical</b>                     | No information available.                                                                                                          |
| <b>Explosion data</b>                                                 |                                                                                                                                    |
| <b>Sensitivity to mechanical impact</b>                               | None.                                                                                                                              |
| <b>Sensitivity to static discharge</b>                                | None.                                                                                                                              |
| <b>Special protective equipment and precautions for fire-fighters</b> | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

|                             |                                                                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions</b> | Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. |
| <b>Other information</b>    | Refer to protective measures listed in Sections 7 and 8.                                                                                                 |

### Methods and material for containment and cleaning up

|                                |                                                       |
|--------------------------------|-------------------------------------------------------|
| <b>Methods for containment</b> | Prevent further leakage or spillage if safe to do so. |
| <b>Methods for cleaning up</b> | Pick up and transfer to properly labeled containers.  |

## 7. Handling and storage

### Precautions for safe handling

|                                |                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Advice on safe handling</b> | Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Conditions for safe storage, including any incompatibilities



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## Storage Conditions

Store locked up. Keep containers tightly closed in a dry, cool and well-ventilated place. Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA.

## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

#### Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

### Appropriate engineering controls

#### Engineering controls

Showers  
Eyewash stations  
Ventilation systems.

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

#### Eye/face protection

If splashes are likely to occur, wear safety glasses with side-shields. Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

#### Hand protection

Wear suitable gloves. Impervious gloves. Wear protective nitrile rubber gloves. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374.

#### Skin and body protection

Long sleeved clothing. Wear suitable protective clothing.

#### Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

#### Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water.

#### General hygiene considerations

Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties



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|                |                          |
|----------------|--------------------------|
| Physical state | Solid                    |
| Appearance     | Solid                    |
| Color          | light yellow             |
| Odor           | No information available |
| Odor threshold | No information available |

| <u>Property</u>                         | <u>Values</u>                 | <u>Remarks • Method</u> |
|-----------------------------------------|-------------------------------|-------------------------|
| pH                                      | No data available             | None known              |
| Melting point / freezing point          | 158 - 160 °C / 316.4 - 320 °F | None known              |
| Initial boiling point and boiling range | No data available             | None known              |
| Flash point                             | No data available             | None known              |
| Evaporation rate                        | No data available             | None known              |
| Flammability                            | No data available             | None known              |
| Flammability Limit in Air               |                               | None known              |
| Upper flammability or explosive limits  | No data available             |                         |
| Lower flammability or explosive limits  | No data available             |                         |
| Vapor pressure                          | No data available             | None known              |
| Relative vapor density                  | No data available             | None known              |
| Relative density                        | No data available             | None known              |
| Water solubility                        | No data available             | None known              |
| Solubility(ies)                         | No data available             | None known              |
| Partition coefficient                   | No data available             | None known              |
| Autoignition temperature                | No data available             | None known              |
| Decomposition temperature               |                               | None known              |
| Kinematic viscosity                     | No data available             | None known              |
| Dynamic viscosity                       | No data available             | None known              |
| <u>Other information</u>                |                               |                         |
| Explosive properties                    | No information available      |                         |
| Oxidizing properties                    | No information available      |                         |
| Softening point                         | No information available      |                         |
| Molecular weight                        | 388.5                         |                         |
| VOC Content (%)                         | No information available      |                         |
| Liquid Density                          | No information available      |                         |
| Bulk density                            | No information available      |                         |

## 10. Stability and reactivity

|                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| Reactivity                         | No information available.                            |
| Chemical stability                 | Stable under normal conditions.                      |
| Possibility of hazardous reactions | None under normal processing.                        |
| Conditions to avoid                | None known based on information supplied.            |
| Incompatible materials             | Strong acids. Strong bases. Strong oxidizing agents. |



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**Hazardous decomposition products** None known based on information supplied.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

|              |                                                                                                                                                               |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation   | Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.                                                  |
| Eye contact  | Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain. |
| Skin contact | Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).                                              |
| Ingestion    | Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.             |

### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Redness. May cause redness and tearing of the eyes.

### Acute toxicity

#### Numerical measures of toxicity

No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|                                   |                                                                                        |
|-----------------------------------|----------------------------------------------------------------------------------------|
| Skin corrosion/irritation         | Classification based on data available for ingredients. Causes skin irritation.        |
| Serious eye damage/eye irritation | Classification based on data available for ingredients. Causes serious eye irritation. |
| Respiratory or skin sensitization | No information available.                                                              |
| Germ cell mutagenicity            | No information available.                                                              |
| Carcinogenicity                   | No information available.                                                              |



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|                                 |                                                                                                                                                     |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reproductive toxicity</b>    | Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child. |
| <b>STOT - single exposure</b>   | May cause respiratory irritation.                                                                                                                   |
| <b>STOT - repeated exposure</b> | No information available.                                                                                                                           |
| <b>Aspiration hazard</b>        | No information available.                                                                                                                           |
| <b>Other adverse effects</b>    | No information available.                                                                                                                           |
| <b>Interactive effects</b>      | No information available.                                                                                                                           |

## 12. Ecological information

|                                      |                                                                           |
|--------------------------------------|---------------------------------------------------------------------------|
| <b>Ecotoxicity</b>                   | The environmental impact of this product has not been fully investigated. |
| <b>Persistence and degradability</b> | No information available.                                                 |
| <b>Bioaccumulation</b>               | There is no data for this product.                                        |
| <b>Other adverse effects</b>         | No information available.                                                 |

## 13. Disposal considerations

### Disposal methods

|                                            |                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Waste from residues/unused products</b> | Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. |
| <b>Contaminated packaging</b>              | Do not reuse empty containers.                                                                                  |

## 14. Transport information

|                   |               |
|-------------------|---------------|
| <b><u>DOT</u></b> | Not regulated |
|-------------------|---------------|



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## 15. Regulatory information

### International Inventories

TSCA

Contact supplier for inventory compliance status.

| Chemical name | CAS No     | US TSCA Inventory listing | US TSCA inactive/active designation |
|---------------|------------|---------------------------|-------------------------------------|
| Ramiprilat    | 87269-97-4 | -                         | Unknown *                           |

\*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

DSL/NDSL

Contact supplier for inventory compliance status.

EINECS/ELINCS

Contact supplier for inventory compliance status.

ENCS

Contact supplier for inventory compliance status.

IECSC

Contact supplier for inventory compliance status.

KECL

Contact supplier for inventory compliance status.

PICCS

Contact supplier for inventory compliance status.

AICS

Contact supplier for inventory compliance status.

### **Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### **CWA (Clean Water Act)**



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This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

## CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

## US State Regulations

### California Proposition 65

This product does not contain any Proposition 65 chemicals.

### U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

## U.S. EPA Label Information

**EPA Pesticide Registration Number** Not applicable

## 16. Other information

|                                   |                           |                                  |                           |                              |
|-----------------------------------|---------------------------|----------------------------------|---------------------------|------------------------------|
| <b>NFPA</b>                       | <b>Health hazards</b> 2   | <b>Flammability</b> 0            | <b>Instability</b> 0      | <b>Special hazards</b> -     |
| <b>HMIS</b>                       | <b>Health hazards</b> 2 * | <b>Flammability</b> 0            | <b>Physical hazards</b> 0 | <b>Personal protection</b> X |
| <i>Chronic Hazard Star Legend</i> |                           | <i>* = Chronic Health Hazard</i> |                           |                              |

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### **Legend Section 8: Exposure controls/personal protection**

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | *    | Skin designation                 |

### **Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AELG(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)



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NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Revision date** 11-Apr-2022  
**Revision Note** No information available.

**Disclaimer**

The information in this Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, we cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. We warrant that the chemical meets the specifications set forth on the label. We (LGC/VHG/ARMI) disclaim any other warranties, expressed or implied with regard to the product supplied hereunder, its merchantability or its fitness for a particular purpose. The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. Read all precautionary information.

**End of Safety Data Sheet**