SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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

1.1 Product identifiers

Product name: L-Arginine
Product Number: 11009
Brand: Sigma
REACH No.: 01-2119963927-19-XXXX
CAS-No.: 74-79-3

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Other hazards

This substance/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
Synonyms: (S)-2-Amino-5-guanidinopentanoic acid

Formula: C₆H₁₄N₄O₂
Molecular weight: 174,20 g/mol
CAS-No.: 74-79-3
EC-No.: 200-811-1

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures

4.1 Description of first aid measures
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOₓ)
Not combustible.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.
6.2 **Environmental precautions**
No special environmental precautions required.

6.3 **Methods and materials for containment and cleaning up**
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.

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**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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

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

8.2 **Exposure controls**

- **Appropriate engineering controls**
General industrial hygiene practice.

- **Personal protective equipment**

  **Eye/face protection**
  Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

  **Skin protection**
  Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

  The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

  - **Full contact**
    Material: Nitrile rubber
    Minimum layer thickness: 0,11 mm
    Break through time: 480 min
    Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

  - **Splash contact**
    Material: Nitrile rubber
    Minimum layer thickness: 0,11 mm
    Break through time: 480 min
    Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)
The life science business of Merck operates as MilliporeSigma in the US and Canada.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

No special environmental precautions required.

### SECTION 9: Physical and chemical properties

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

- **a)** Appearance
  - Form: crystalline
  - Colour: white
- **b)** Odour
  - weak
- **c)** Odour Threshold
  - No data available
- **d)** pH
  - ca.11,4 at 100 g/l at 20 °C
- **e)** Melting point/freezing point
  - Melting point/range: 222 °C - dec.
- **f)** Initial boiling point and boiling range
  - No data available
- **g)** Flash point
  - No data available
- **h)** Evaporation rate
  - No data available
- **i)** Flammability (solid, gas)
  - The product is not flammable. - Flammability (solids)
- **j)** Upper/lower flammability or explosive limits
  - No data available
- **k)** Vapour pressure
  - < 0,1 hPa at 25 °C
- **l)** Vapour density
  - No data available
- **m)** Relative density
  - 1,1 g/cm3
- **n)** Water solubility
  - 182 g/l at 25 °C - completely soluble
o) Partition coefficient: log Pow: -4.20 at 20 °C - Bioaccumulation is not expected.

p) Auto-ignition temperature does not ignite

q) Decomposition temperature No data available

r) Viscosity No data available

s) Explosive properties No data available

t) Oxidizing properties No data available

9.2 Other safety information
Dissociation constant 2.17 at 20 °C

SECTION 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
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - > 5.110 mg/kg
Remarks: (ECHA)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation - 1 h
(OECD Test Guideline 405)

**Respiratory or skin sensitisation**
No data available

**Germ cell mutagenicity**
Mutagenicity (mammal cell test): chromosome aberration.
Human lymphocytes
Result: negative
Ames test
Escherichia coli/Salmonella typhimurium
Result: negative

**Carcinogenicity**
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**Additional Information**
Repeatead dose toxicity - Rat - male and female - Oral - 91 d - No observed adverse effect level - 3.130,9 - 3.565,1 mg/kg
(ECHA)
RTECS: CF1934200

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
This is a semi-essential amino acid which is frequently found in natural protein.
Therapeutically used substance.
Handle in accordance with good industrial hygiene and safety practice.

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**SECTION 12: Ecological information**

12.1 **Toxicity**

Toxicity to fish
semi-static test LC50 - Danio rerio (zebra fish) - 2.800 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to bacteria

12.2 **Persistence and degradability**

Biodegradability
aerobic - Exposure time 28 d
Result: 100 % - Readily biodegradable.
(OECD Test Guideline 301C)

12.3 **Bioaccumulative potential**
No data available
12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/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.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: - IMDG: - IATA: -

14.4 Packaging group
ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out
SECTION 16: Other information

Further information
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