



L-ASPARTIC ACID (2-13C, 99%)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Version: 3.2

CLM-3617

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

1.1. Product identifier

Product form : Substance
Substance name : L-ASPARTIC ACID (2-13C, 99%)
EC-No. : 200-291-6
CAS-No. : 160033-95-4
Product code : CLM-3617
Formula : $\text{HOOCCH}_2^*\text{CH}(\text{NH}_2)\text{COOH}$
Synonyms : (S)-(+)-Aminosuccinic acid. (S)-Aminobutanedioic acid.

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

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

GHS-US classification

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

No labeling applicable

GHS-US labeling

No labeling applicable

2.3. Other hazards

No additional information available

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Safety Data Sheet

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SECTION 3: Composition/Information on ingredients

3.1. Substances

| Name | Product identifier | % | Classification according to Directive 67/548/EEC |
|------------------------------|---------------------------------------------|-----|--------------------------------------------------|
| L-ASPARTIC ACID (2-13C, 99%) | (CAS-No.) 160033-95-4 (EC-No.) 200-291-6 | 100 | Not classified |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|------------------------------|---------------------------------------------|-----|-----------------------------------------------------------------|
| L-ASPARTIC ACID (2-13C, 99%) | (CAS-No.) 160033-95-4 (EC-No.) 200-291-6 | 100 | Not classified |

Full text of R- and H- phrases: see section 16

| Name | Product identifier | % | GHS-US classification |
|----------------------------------------------------|-----------------------|-----|-----------------------|
| L-ASPARTIC ACID (2-13C, 99%) (Main constituent) | (CAS-No.) 160033-95-4 | 100 | Not classified |

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| First-aid measures general | : Move out of dangerous area. Consult a physician and show this safety data sheet. |
| First-aid measures after inhalation | : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician. |
| First-aid measures after skin contact | : Wash with soap and plenty of water. Consult a physician. |
| First-aid measures after eye contact | : Flush eyes with water as a precaution. |
| First-aid measures after ingestion | : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |

4.2. Most important symptoms and effects, both acute and delayed

| | |
|-------------------------------------|-----------------------------------------------------------------------|
| Symptoms/effects | : Not available. |
| Symptoms/effects after inhalation | : May be harmful if inhaled. May cause respiratory tract irritation. |
| Symptoms/effects after skin contact | : May be harmful if absorbed through skin. May cause skin irritation. |
| Symptoms/effects after eye contact | : May cause eye irritation. |
| Symptoms/effects after ingestion | : May be harmful if swallowed. |

4.3. Indication of any immediate medical attention and special treatment needed

No additional information 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

No additional information available

5.3. Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Avoid breathing dust.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

No additional information available

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

- Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



- Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Powder
- Molecular mass : 134.1 g/mol
- Color : White
- Odor : No data available
- Odor threshold : No data available
- pH : 2.8 at 4.5 g/l at 20 °C (68 °F)
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : > 300 °C (572 °F) - dec
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : No data available
- Relative vapor density at 20 °C : No data available
- Relative density : No data available
- Specific gravity / density : 1.66 g/cm³
- Solubility : No data available
- Log Pow : No data available
- Log Kow : No data available
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosive properties : No data available
- Oxidizing properties : No data available
- Explosion limits : No data available

9.2. Other information

No additional information available

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Safety Data Sheet

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SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong acids, Strong bases, Strong oxidizing agents, Nitric acid.

10.6. Hazardous decomposition products

Formed under fire conditions: Carbon oxides, Nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

| L-ASPARTIC ACID (2-13C, 99%) (160033-95-4) | |
|--------------------------------------------|----------------------------|
| LD50 oral rat | 5000 mg/kg |
| LD50 dermal rabbit | 5000 mg/kg |
| ATE CLP (oral) | 5000.000 mg/kg body weight |
| ATE CLP (dermal) | 5000.000 mg/kg body weight |

Skin corrosion/irritation : Not classified
Skin – Rabbit - Result: No skin irritation - pH: 2.8 at 4.5 g/l at 20 °C (68 °F)

Serious eye damage/irritation : Not classified
Eyes - Rabbit Result: No eye irritation - pH: 2.8 at 4.5 g/l at 20 °C (68 °F)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : The chemical, physical, and toxicological properties have not been thoroughly investigated.

Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/effects after skin contact : May be harmful if absorbed through skin. May cause skin irritation.

Symptoms/effects after eye contact : May cause eye irritation.

Symptoms/effects after ingestion : May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

| L-ASPARTIC ACID (2-13C, 99%) (160033-95-4) | |
|--------------------------------------------|----------------|
| Persistence and degradability | Not available. |

12.3. Bioaccumulative potential

| L-ASPARTIC ACID (2-13C, 99%) (160033-95-4) | |
|--------------------------------------------|----------------|
| Bioaccumulative potential | Not available. |

12.4. Mobility in soil

| L-ASPARTIC ACID (2-13C, 99%) (160033-95-4) | |
|--------------------------------------------|----------------|
| Ecology - soil | Not available. |

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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Not dangerous goods.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : Not dangerous goods.

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

| L-ASPARTIC ACID (2-13C, 99%) (160033-95-4) | |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| SARA Section 302 Threshold Planning Quantity (TPQ) | SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| SARA Section 313 - Emission Reporting | Not subject to reporting requirements of the United States SARA Section 313 |

15.2. International regulations

CANADA

| L-ASPARTIC ACID (2-13C, 99%) (160033-95-4) |
|-------------------------------------------------------|
| Listed on the Canadian DSL (Domestic Substances List) |

15.2.1. National regulations

No additional information available

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15.3. US State regulations

| L-ASPARTIC ACID (2-13C, 99%)(160033-95-4) | |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |
| State or local regulations | U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List |

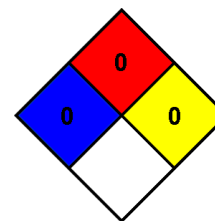
SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

CIL Substance SDS

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