SECTION 1. Identification

Product identifier

Product number 816003
Product name (S)-(+-)-Aspartic acid for synthesis
Synonyms Asp
CAS-No. 56-84-8

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

Identified uses Chemical for synthesis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

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

SECTION 2. Hazards identification

GHS-Labeling

Not a dangerous substance according to GHS.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula C₄H₇NO₄ (Hill)
Synonyms Asp
Molar mass 133.1 g/mol

SECTION 4. First aid measures

Description of first-aid measures

**Inhalation**
After inhalation: fresh air.

**Skin contact**
After skin contact: wash off with plenty of water. Remove contaminated clothing.

**Eye contact**
After eye contact: rinse out with plenty of water.

**Ingestion**
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
We have no description of any toxic symptoms.

Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

**Suitable extinguishing media**
Water, Foam, Dry powder, Carbon dioxide (CO2)

**Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Combustible material
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of: nitrogen oxides

Advice for firefighters

**Special protective equipment for fire-fighters**
In the event of fire, wear self-contained breathing apparatus.

**Further information**
Suppress (knock down) gases/vapors/mists with a water spray jet.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.
Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage
Precautions for safe handling
Observe label precautions.

Conditions for safe storage, including any incompatibilities
Tightly closed. Dry.
Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)
Contains no substances with occupational exposure limit values.

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.

Eye/face protection
Safety glasses

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Respiratory protection
required when dusts are generated.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state  solid
Color  white
Odor  weak
Odor Threshold
No information available.

pH
2.5 - 3.5
at 4 g/l
68 °F (20 °C)

Melting point
269 - 271 °C
(decomposition)

Boiling point
No information available.

Flash point
No information available.

Evaporation rate
No information available.

Flammability (solid, gas)
No information available.

Lower explosion limit
No information available.

Upper explosion limit
No information available.

Vapor pressure
No information available.

Relative vapor density
No information available.

Density
No information available.

Relative density
No information available.

Water solubility
4 g/l
at 68 °F (20 °C)

Partition coefficient: n-octanol/water
log Pow: -3.89
(experimental)
(Lit.) Bioaccumulation is not expected.

Autoignition temperature
No information available.

Decomposition temperature
No information available.

Viscosity, dynamic
No information available.

Explosive properties
Not classified as explosive.

Oxidizing properties
none

Bulk density
ca.430 kg/m³

SECTION 10. Stability and reactivity
Reactivity
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions
Violent reactions possible with:
Strong oxidizing agents

Conditions to avoid
Strong heating (decomposition).

Incompatible materials
no information available

Hazardous decomposition products
in the event of fire: See section 5.

SECTION 11. Toxicological information
Information on toxicological effects

Likely route of exposure
Eye contact, Skin contact, Ingestion

Skin irritation
Rabbit
Result: No irritation
(IUCLID)

Eye irritation
Rabbit
Result: slight irritation
slight irritation (IUCLID)

Sensitization
Sensitization test: Guinea pig
Result: negative
(IUCLID)

Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
(Lit.)

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity
Further information
Quantitative data on the toxicity of this product are not available.
Further toxicological data:
This is a non-essential amino acid that occurs in many forms in natural protein.
Further data:
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity
No information available.

Persistence and degradability
No information available.

Bioaccumulative potential
Partition coefficient: n-octanol/water
log Pow: -3.89
(experimental)
(Lit.) Bioaccumulation is not expected.

Mobility in soil
No information available.

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations
The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.
SECTION 14. Transport information

Land transport (DOT)
Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)
Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)
Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Remarks
No components are subject to the Massachusetts Right to Know Act.

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.
SAFETY DATA SHEET  
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number  816003  
Product name  (S)-(+) Aspartic acid for synthesis

Notification status  
TSCA:  All components of the product are listed in the TSCA-inventory.
DSL:  All components of this product are on the Canadian DSL.
KOREA:  Not in compliance with the inventory

SECTION 16. Other information

Training advice  
Provide adequate information, instruction and training for operators.

Key or legend to abbreviations and acronyms used in the safety data sheet  
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date  02/04/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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