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

1.1 Product identifiers

Product name: L-Ascorbic acid

Product Number: A92902
Brand: Sigma-Aldrich
CAS-No.: 50-81-7

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

Identified uses: Laboratory chemicals, Synthesis 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

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

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Combustible dust,

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram: none
Signal Word: Warning
Hazard statement(s): May form combustible dust concentrations in air.
Precautionary statement(s): none
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Combustible dust
May form explosible dust-air mixture if dispersed.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Antiscorbutic factor
L-Threoascorbic acid
Vitamin C

Formula: C$_6$H$_8$O$_6$
Molecular weight: 176.12 g/mol
CAS-No.: 50-81-7
EC-No.: 200-066-2

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
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

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

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
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.
5.2 Special hazards arising from the substance or mixture
Carbon oxides
Combustible.
Risk of dust explosion.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 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.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 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.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Tightly closed. Dry.
Light sensitive.

Storage class
Storage class (TRGS 510): 11: Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Change contaminated clothing. Wash hands after working with substance.

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). Safety glasses

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

Respiratory protection
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: solid
b) Odor No data available
c) Odor Threshold  No data available  
d) pH  No data available  
e) Melting point/freezing point  Melting point/range: 190 - 194 °C (374 - 381 °F) - 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)  May form combustible dust concentrations in air.  
j) Upper/lower flammability or explosive limits  No data available  
k) Vapor pressure  No data available  
l) Vapor density  No data available  
m) Density  1.65 g/cm^3 at 20 °C (68 °F)  
Relative density  No data available  
n) Water solubility  No data available  
o) Partition coefficient: n-octanol/water  No data available  
p) Autoignition temperature  No data available  
q) Decomposition temperature  No data available  
r) Viscosity  No data available  
s) Explosive properties  No data available  
t) Oxidizing properties  none  

9.2 Other safety information  
No data available  

SECTION 10: Stability and reactivity  

10.1 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.  

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

10.3 Possibility of hazardous reactions  
Violent reactions possible with:  
Aluminum  
Copper alloys  

Sigma-Aldrich - A92902  

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada
Zinc
metal ions
Oxidizing agents
Copper
Acids
bases

10.4 Conditions to avoid
Light.
no information available

10.5 Incompatible materials
no information available

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 11,900 mg/kg
Remarks: (RTECS)
Inhalation: No data available
Dermal: No data available
No data available

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

Serious eye damage/eye irritation
Eyes - Rabbit
Result: slight irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

Reproductive toxicity
No data available

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

Aspiration hazard
No data available

11.2 Additional Information

RTECS: CI7650000
Chronic ingestion of large doses may cause gastrointestinal disturbances including nausea and diarrhea, urinary effects involving urine acidification, oxalate and uric crystallization in the bladder and kidney, and decreased reaction times and psychomotor coordination. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
LC50 - Oncorhynchus mykiss (rainbow trout) - 1,020 mg/l - 96 h
(OECD Test Guideline 203)
Remarks: acidic

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 360 mg/l - 48 h
Remarks: (External MSDS)

Toxicity to algae
IC50 - Desmodesmus subspicatus (green algae) - 1,750 mg/l - 72 h
Remarks: (External MSDS)

Toxicity to bacteria
EC50 - Pseudomonas putida - 140 mg/l - 16 h
Remarks: (External MSDS)

12.2 Persistence and degradability

Biodegradability
Result: 97 % - Readily eliminated from water
(OECD Test Guideline 302B)

Ratio BOD/ThBOD
65 %
Remarks: Closed Bottle test(own results)

Ratio BOD/ThBOD
48 %
Remarks: Closed Bottle test(own results)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

No data available
12.7 Other adverse effects
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

Further information
Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
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 311/312 Hazards
No SARA Hazards

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

SECTION 16: Other information

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to
appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.
The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact misbranding@sial.com.

Version: 6.6 Revision Date: 01/24/2023 Print Date: 07/22/2023