


<b>MSDS</b>	<b>Material Safety Data Sheet</b>
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## **L-(+)-ASCORBIC ACID**

## 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

PRODUCT NAME	L-(+)-Ascorbic acid
RECOMMENDED USE & RESTRICTIONS ON USE	Research use only
INFORMATION OF MANUFACTURER/IMPORTER/SUPPLIER	
COMPANY	Eurolab ®
ADDRESS	54-58 High Street Edgware, Middlesex, HA8 7EJ, UK
EMERGENCY PHONE	
E-MAIL ADDRESS	

## 2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION	Specific target organ toxicity Single exposure : Category 3(respiratory irritation)	
LABEL ELEMENTS	PICTOGRAM	
	HAZARD SYMBOL	WARNING
	HAZARD STATEMENTS	May cause respiratory irritation
	PRECAUTIONARY STATEMENTS	Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Store locked up. Store in a well-ventilated place. Keep container tightly closed.

		Dispose of this material and its container in accordance with local/regional/national/international regulation.
OTHER HAZARDS (NFPA)	Health	0
	Fire	1
	Reactivity	0

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY	SYNONYMS	CAS NUMBER	ASSAY
L-(+)-Ascorbic acid	Vitamin C	50-81-7	Above 99.5%(GR); Above 99.0%(EP)

### 4. FIRST AID MEASURES

GENERAL ADVICE	Wash off immediately with soap and plenty of water. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.
IN CASE OF EYE CONTACT	Remove any contact lenses at once. Flush eyes well with flooding amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a physician.
IN CASE OF SKIN CONTACT	Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. If irritation persists, consult a physician.
IF INHALED	Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.
IF SWALLOWED	Rinse mouth, give plenty of water to dilute the substance. Never give anything by mouth to an unconscious person. Consult a physician.

### 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	Carbon dioxide, dry chemical powder, foam, water
SPECIFIC HAZARDS ARISING FROM THE CHEMICAL	Toxic, irritating dust or smoke may be emitted.
SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:	Firemen should wear normal protective equipment(full bunker gear)and positive-pressure self-contained breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.
ENVIRONMENTAL PRECAUTIONS	Prevent spills from entering sewers, watercourses or low areas.
METHODS FOR CLEANING UP	Do not touch spilled material without suitable protection. After material is completely picked up, wash the spill site with soap and water and ventilate the area. Put all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose of contaminated clothing.

## 7. HANDLING AND STORAGE

PRECAUTION FOR SAFE HANDLING	Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Handle material with suitable protection.
CONDITIONS FOR SAFE STORAGE	Store away from sunlight in well-ventilated dry place at room temperature (preferably cool place). Keep container tightly closed.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE STANDARDS	ACGIH	No data
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APPROPRIATE ENGINEERING CONTROLS:		No data
INDIVIDUAL PROTECTION MEASURES	RESPIRATORY PROTECTION	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup Sigma-Aldrich - 270997 Page 4 of 7 to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
	EYE PROTECTION	Face shield and safety glasses 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 EU Directive 89/686/EEC and the standard EN 374 derived from it.
	BODY PROTECTION	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES		
APPEARANCE	FORM	Solid
	COLOR	White
ODOUR		Odorless
ODORODOUR THRESHOLD VALUE		No data
pH		3 (5mg/mL)

FREEZING POINT :		190 ~ 192 °C
INITIAL BOILING POINT		No data
FLASH POINT		276 °C
EVAPORATING RATE		No data
FLAMMABILITY(solid, gas)		No data
EXPLOSIVE LIMITS		14.5 / 1.7 %
VAPOR PRESSURE		0.00000000249 mmHg (25 °C)
SOLUBILITY IN	WATER	33 mg/L
VAPOR DENSITY		No data
RELATIVE DENSITY		1.65
PARTITION COEFFICIENT: N-OCTANOL/WATER		-2.15
AUTOIGNITION TEMPERATURE		380 °C
DECOMPOSITION TEMPERATURE		No data
VISCOSITY		No data
MOLECULAR WEIGHT		176.13

## 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY & POSSIBILITY OF HAZARDOUS REACTIONS	Stable under recommended storage conditions.
CONDITIONS TO AVOID	Sunlight, heat
INCOMPATIBLE MATERIALS	Strong oxidizers, strong alkalis
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon monoxide may be formed.

## 11. TOXICOLOGICAL INFORMATION

INFORMATION ON THE LIKELY ROUTES OF EXPOSURES:	No data
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HEALTH HAZARD INFORMATION	ACUTE TOXICITY	LDLo(ivn,woman): 900mg/kg(AIMDAP 145,950,1985) LD50(ori,rat): 11900mg/kg(OYYAA2 12,131,1976) LD50(ori,mouse): 3367mg/kg(NCISP* JAN1986) TDLo(skin,mouse): 50mg/kg(FATOAO 47,84,1984)
	SKIN CORROSION/ SKIN IRRITATION	May cause skin irritation.
	EYE DAMAGE/ EYE IRRITATION	May cause eye irritation.
	RESPIRATORY SENSITIZATION	No data
	SKIN SENSITIZATION	No data
	CARCINOGENICITY	IARC: No data OSHA: No data ACGIH: No data NTP: No data EU CLP: No data
	GERM CELL MUTAGENICITY	Micronucleus test; hamster: ovary: 400mg/L(EMMUEG 26,240,1995) Cytogenetic analysis; ipr: mouse: 1600mg/kg(TCMUD8 9,51,1989) Reverse mutation assay in S.typhimuriun and E.coli; 500µg/plate(ABCHA6 45,327,1981) DNA damage; human; fibroblast; 200µmol/L(CNREA8 42,3783,1982)
	TOXIC TO REPRODUCTION	TDLo(ipr,mouse): 6680mg/kg(female 11D)(ARTODN 64,423,1990) TDLo(ori,rat): 2500mg/kg(female 1-22 D preg)(AJANA2 110,29,1962)
	SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE	Causes airway irritation
SPECIFIC TARGET	No data	

	ORGAN TOXICITY REPEATED EXPOSURE	
	ASPIRATION HAZARD	No data

## 12. ECOLOGICAL INFORMATION

ECOTOXICITY	TO FISH	LC50 13.311 mg/L/96hr (ECOSAR)
	TO CRUSTACEA	LC50 1644.468 mg/L/48hr (ECOSAR)
	TO OTHER AQUATIC LIFE	EC50 140.284 mg/L/96hr (ECOSAR)
PERSISTENCE/ DEGRADABILITY	PERSISTENCE	log Kow -2.15 (NITE)
	DEGRADABILITY	No data
BIOACCUMULATION POTENTIAL	ACCUMULATION	No data
	BIODEGRADABILITY	No data
MOBILITY IN SOIL		No data
OTHER ADVERSE EFFECTS		No data

## 13. DISPOSAL CONSIDERATION

DISPOSAL METHODS	Use only licensed transporters and permitted facilities for waste disposal.
DISPOSAL CONSIDERATIONS	Dispose of this material and its container in accordance with local/regional/national/international regulation.

## 14. TRANSPORT INFORMATION

IATA	
UN NUMBER	No data
UN PROPER SHIPPING NAME	No data
TRANSPORT HAZARD CLASS	No data
PACKING GROUP	No data
MARINE POLLUTANT	No data
SPECIAL PRECAUTIONS FOR USER	
IN CASE OF FIRE	No data



IN CASE OF LEAK	No data
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15. REGULATORY INFORMATION		
Occupational Safety and Health Act		Not listed
Toxic Chemicals Control Act		Not listed
Safety Control of Dangerous Substance Act		Not listed
Wastes Control Act		Not listed
Persistent Organic Pollutants Control Act		Not listed
US REGULATIONS	OSHA	Not listed
	CERCLA	Not listed
	EPCRA302	Not listed
	EPCRA304	Not listed
	EPCRA313	Not listed
	ROTTERDAM CONVENTION	Not listed
	STOCKHOLM CONVENTION	Not listed
	MONTREAL PROTOCOL	Not listed
EU CLASSIFICATION INFORMATION	CLASSIFICATION	No data
	RISK PHRASES	No data
	SAFETY PHRASES	No data

16. OTHER INFORMATION	
ORIGINATED DATE	2012.01.01
REVISION NUMBER AND DATE	Revision number: 0 Final revision data: 2012.01.01
OTHER	The information in this MSDS is based on several references and the present state of our knowledge. However, the MSDS does not always cover all information about product. The information in this MSDS is only provision of information, and It does not represent any guarantee of the properties of the product.



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