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

1.1. Product identifier
Ethyl ascorbic acid

Further trade names
INCI: ETHYL ASCORBIC ACID
CAS No: 86404-04-8
EC No: 617-849-3

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture
Manufacture of cosmetics.

Uses advised against
any non-intended use.

1.3. Details of the supplier of the safety data sheet
Company name: Satcotek GmbH
Street: Gotenstrasse 13
Place: D-20097 Hamburg
Telephone: +49(0)40-5303669711
Telefax: +49(0)40-5303669766
Internet: www.satcotek.com
Responsible Department: info@satcotek.com

1.4. Emergency telephone number:
Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

Further Information
The substance does not require registration according to Regulation (EC) No 1907/2006 [REACH], (< 1t/y)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Regulation (EC) No. 1272/2008
Hazard categories:
Serious eye damage/eye irritation: Eye Irrit. 2
Hazard Statements:
Causes serious eye irritation.

2.2. Label elements
Regulation (EC) No. 1272/2008
Signal word: Warning

Pictograms:

Hazard statements
H319 Causes serious eye irritation.

Precautionary statements
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.

2.3. Other hazards
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C8H12O6
Molecular weight: 204.18

Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH No</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>86404-04-8</td>
<td>(5R)-5-[(1S)-1,2-Dihydroxyethyl]-4-ethoxy-3-hydroxy-5H-furan-2-on</td>
<td>617-849-3</td>
<td></td>
<td></td>
<td>&gt;= 99 %</td>
</tr>
</tbody>
</table>

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

Eye Irrit. 2; H319

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. In case of respiratory tract irritation, consult a physician.

After contact with skin

Gently wash with plenty of soap and water. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse cautiously with water for several minutes. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2). Dry extinguishing powder. alcohol resistant foam. Water fog.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Carbon dioxide (CO2). Carbon monoxide (CO).
5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation.
Do not breathe dust.
Wear personal protection equipment (refer to section 8).

6.2. Environmental precautions

Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Take up mechanically.
Treat the recovered material as prescribed in the section on waste disposal.
Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear personal protection equipment (refer to section 8).

Advice on protection against fire and explosion

Usual measures for fire prevention. Dust clouds may present an explosion hazard.

Further information on handling

Avoid generation of dust.
General protection and hygiene measures: refer to chapter 8

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.

Advice on storage compatibility


Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.
Recommended storage temperature: 20°C
Protect against: Light. UV-radiation/sunlight. heat. moisture.

7.3. Specific end use(s)

refer to chapter 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional advice on limit values

To date, no national critical limit values exist.
8.2. Exposure controls

**Appropriate engineering controls**
Dust should be exhausted directly at the point of origin.

**Protective and hygiene measures**
Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

**Eye/face protection**
Dust protection goggles.

**Hand protection**
Wear suitable gloves.
Suitable material:
- FKM (fluororubber). - Thickness of glove material: 0,4 mm
  Breakthrough time >= 8 h
- Butyl rubber. - Thickness of glove material: 0,5 mm
  Breakthrough time >= 8 h
- CR (polychloroprenes, Chloroprene rubber). - Thickness of glove material: 0,5 mm
  Breakthrough time >= 8 h
- NBR (Nitrile rubber). - Thickness of glove material: 0,35 mm
  Breakthrough time >= 8 h
- PVC (Polyvinyl chloride). - Thickness of glove material: 0,5 mm
  Breakthrough time >= 8 h
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Check leak tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well.

**Skin protection**
Suitable protective clothing: Lab apron.
Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

**Respiratory protection**
With correct and proper use, and under normal conditions, breathing protection is not required.
Respiratory protection necessary at: In the case of the formation of dust.
Suitable respiratory protective equipment: particulates filter device (DIN EN 143), Type P1-3
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

**Environmental exposure controls**
No special precautionary measures are necessary.

---

### SECTION 9: Physical and chemical properties

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

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Powder, solid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>white - light yellow</td>
</tr>
<tr>
<td>Odour:</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

**Test method**

**pH-Value:** not determined

**Changes in the physical state**

- **Melting point:** ~115 °C
- **Initial boiling point and boiling range:** >250 °C
- **Sublimation point:** not determined
Safety Data Sheet

according to Regulation (EC) No 1907/2006

Ethyl ascorbic acid
Product code: 223040

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point</td>
<td>not determined</td>
</tr>
<tr>
<td>Pour point</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>not determined</td>
</tr>
<tr>
<td>Sustaining combustion (Solvent coordinates)</td>
<td>Not sustaining combustion</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>none</td>
</tr>
<tr>
<td>Lower explosion limits</td>
<td>not determined</td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>not determined</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>not determined</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>not determined</td>
</tr>
<tr>
<td>Solid:</td>
<td>not determined</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;250 °C</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
</tr>
<tr>
<td>Density</td>
<td>not determined</td>
</tr>
<tr>
<td>Bulk density</td>
<td>not determined</td>
</tr>
<tr>
<td>Water solubility</td>
<td>easily soluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>not determined</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>not determined</td>
</tr>
<tr>
<td>Viscosity / dynamic</td>
<td>not determined</td>
</tr>
<tr>
<td>Viscosity / kinematic</td>
<td>not determined</td>
</tr>
<tr>
<td>Flow time</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour density</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
</tr>
<tr>
<td>Solvent separation test</td>
<td>not determined</td>
</tr>
<tr>
<td>Solvent content</td>
<td>not determined</td>
</tr>
<tr>
<td>Solid content</td>
<td>not determined</td>
</tr>
</tbody>
</table>

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**
No information available.

**10.2. Chemical stability**
The product is chemically stable under recommended conditions of storage, use and temperature.

**10.3. Possibility of hazardous reactions**
No information available.

**10.4. Conditions to avoid**
Protect against: UV-radiation/sunlight, heat.

**10.5. Incompatible materials**
Materials to avoid: Oxidizing agents, strong. Reducing agents, strong.

**10.6. Hazardous decomposition products**
Can be released in case of fire: Carbon dioxide (CO2), Carbon monoxide (CO).
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution

No data available.

Acute toxicity

Based on available data, the classification criteria are not met.

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Irritant effect on the eye:

Method: HET-CAM
Result / evaluation: Irritant.; literature information: ECHA dossier

Irritant effect on the skin:

Method: OECD Guideline 439; literature information: ECHA dossier
Result / evaluation: Not an irritant.

Sensitising effects

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation:
Result / evaluation: no danger of sensitization.; literature information: ECHA dossier

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

In-vitro mutagenicity:
Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Result: negative.; literature information: ECHA dossier

STOT-single exposure

Based on available data, the classification criteria are not met.
No data available.

STOT-repeated exposure

Based on available data, the classification criteria are not met.
No data available.

Aspiration hazard

Based on available data, the classification criteria are not met.
No data available.

Specific effects in experiment on an animal
No data available.

SECTION 12: Ecological information

12.1. Toxicity
Safety Data Sheet

according to Regulation (EC) No 1907/2006

Ethyl ascorbic acid
Product code: 223040

Revision date: 15.02.2017

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Method</th>
<th>Value</th>
<th>d</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>86404-04-8</td>
<td>(5R)-5-[(1S)-1,2-Dihydroxyethyl]-4-ethoxy-3-hydroxy-5H-furan-2-on</td>
<td>OECD Guideline 301 B</td>
<td>17%</td>
<td>28</td>
<td>ECHA Dossier</td>
</tr>
</tbody>
</table>

Not easily bio-degradable (according to OECD-criteria).

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>86404-04-8</td>
<td>(5R)-5-[(1S)-1,2-Dihydroxyethyl]-4-ethoxy-3-hydroxy-5H-furan-2-on</td>
<td>-0.8</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal.

Non-contaminated packages may be recycled.

According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Control report for waste code/ waste marking according to EAKV:

Waste disposal number of waste from residues/unused products

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances

Classified as hazardous waste.

Waste disposal number of used product

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances

Classified as hazardous waste.

Waste disposal number of contaminated packaging

150106 WASTE PACKAGING; ABSORBENTS, WIPIING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); mixed packaging
Contaminated packaging
Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.
14.5. Environmental hazards
ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user
refer to chapter 6-8

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
not relevant

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information
2010/75/EU (VOC): No information available.
2004/42/EC (VOC): No information available.
Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

Additional information
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
REACH 1907/2006 Appendix XVII, No (mixture): 3

National regulatory information
Employment restrictions: Observe restrictions to employment for juvenils according to the ‘juvenile work protection guideline’ (94/33/EC).
Water contaminating class (D): 1 - slightly water contaminating
15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes
Rev. 1.0; Initial release 15.02.2017

Abbreviations and acronyms
ADR: Accord européen sur le transport des marchandises dangereuses par Route
CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LOAEL: Lowest observed adverse effect level
LOAECE: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NTP: National Toxicology Program
N/A: not applicable
OSHA: Occupational Safety and Health Administration
PNEC: predicted no effect concentration
PBT: Persistent bioaccumulative toxic
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de
fer (Regulations Concerning the International Transport of Dangerous Goods by Rail )
SARA: Superfund Amendments and Reauthorization Act
SVHC: substance of very high concern
TRGS: Technische Regeln für Gefahrstoffe
TSCA: Toxic Substances Control Act
VOC: Volatile Organic Compounds
VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe
WGK: Wassergefährdungsklasse

Relevant H and EUH statements (number and full text)
H319 Causes serious eye irritation.

Further Information
Classification according EC regulation 1272/2008 (CLP):
- Classification procedure:
  Health hazards: Calculation method.
  Environmental hazards: Calculation method.
  Physical hazards: On basis of test data. and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our
present-day knowledge. The information is intended to give you advice about the safe handling of the product
named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be
transferred to other products. In the case of mixing the product with other products or in the case of
processing, the information on this safety data sheet is not necessarily valid for the new made-up material.