1) Identification of the substance/mixture and of the Company

<table>
<thead>
<tr>
<th>Product identifiers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Citrinin</td>
</tr>
<tr>
<td>Product Code</td>
<td>C</td>
</tr>
<tr>
<td>CAS #</td>
<td>518-75-2</td>
</tr>
<tr>
<td>EC/ REACH Number</td>
<td>208-257-2</td>
</tr>
<tr>
<td>Formula</td>
<td>C_{13}H_{14}O_{5}</td>
</tr>
</tbody>
</table>

Intended uses of the substance or mixture and uses advised against

<table>
<thead>
<tr>
<th>Intended use</th>
<th>Uses advised against:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only For Research and/or Development</td>
<td>Not for drug, Not to be used in humans or animals. Not food additive</td>
</tr>
</tbody>
</table>

Details of the supplier of the safety data sheet

FERMENTEK ltd
4 Yatziv street, POB 47120
Jerusalem 97800, Israel
Tel: +972 2 5853953
Fax: +972 2 5853943
eMail: fermentek@fermentek.com
Website: www.fermentek.com

Emergency Telephone number

For chemical emergency spill, leak, fire, exposure, or accident calls CHEMTREC day or night:
Within USA and Canada: 1-800-424-9300.
Outside USA and Canada: +1 703-527-3887

REACH
A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

2) Hazards identification

GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

<table>
<thead>
<tr>
<th></th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity, Oral</td>
<td>3</td>
</tr>
<tr>
<td>Acute Toxicity, Inhalation</td>
<td>3</td>
</tr>
<tr>
<td>Dermal Toxicity</td>
<td>3</td>
</tr>
<tr>
<td>Skin irritation</td>
<td>2</td>
</tr>
<tr>
<td>Serious Eye Damage</td>
<td>1</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>2</td>
</tr>
</tbody>
</table>

EU Classification (According to EU Regulation 67/548/EEC)
Toxic by inhalation, in contact with skin and if swallowed. Irritating to the skin. Risk of serious damage to the eyes. Limited evidence of a carcinogenic effect.

GHS Label elements, including precautionary statements

Pictogram: ◀️ ▶️ ▼ □ □ Signal word: {}[DANGER]
GHS Hazard Statements

H301 Toxic if swallowed.
H311 Toxic in contact with skin
H331 Toxic if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage
H351 Suspected of causing cancer.

GHS Precautionary Statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301/P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P308/P313 IF exposed or concerned: Get medical advice/attention.
P305/P351/P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Unclassified Hazards/Hazards Not Otherwise Classified

No data available

3) Composition/information on ingredients

Substance

<table>
<thead>
<tr>
<th>Molecular Formula:</th>
<th>C_{13}H_{14}O_{5}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight:</td>
<td>250.2</td>
</tr>
<tr>
<td>CAS Registry #:</td>
<td>518-75-2</td>
</tr>
<tr>
<td>EC#:</td>
<td>208-257-2</td>
</tr>
</tbody>
</table>

Synonyms

(3R,4S)-4,6-Dihydro-8-hydroxy-3,4,5-trimethyl-6-oxo-3H-2-benzopyran-7-carboxylic Acid; (3R-trans)-4,6-Dihydro-8-hydroxy-3,4,5-trimethyl-6-oxo-3H-2-benzopyran-7-carboxylic Acid;
Citrinin;
NSC 186;

Mixture

Not mixture. This product is a pure compound

4) First Aid Measures

General advice

Consult a doctor, as medical attention may be required. If symptoms persist, call a physician.

Eye contact:

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Rinse thoroughly with plenty of water for at least 15 minutes. Take victim immediately to hospital. Continue rinsing eyes during transport to hospital.

Skin Contact:

Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Wash off immediately with plenty of water.

Ingestion:

Do NOT induce vomiting. Call a physician or poison control center. Never give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water. Call a physician.

Inhalation:

Immediate medical attention is required. Remove to fresh air if not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Artificial respiration and/or oxygen may be necessary. Call a physician. Move to fresh air in case of accidental inhalation of vapors if symptoms persist, call a physician.
5) Fire-fighting measures

Extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture
Carbon oxides

Advice for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary. Wear protective suit

Further information
No data available

6) Accidental release measures

Personal precautions
Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up:
Cover liquid spill with sand, earth or other non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, and vermiculite). Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal.

7) Handling and storage

Advice on safe handling:
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities
Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place.
Keep out of the reach of children.
Store at -20 °C, dissicated under inert gas.

Specific End Uses:
For scientific research and development only.
To be used only by experienced professionals.
Not for use in humans or animals.
8) Exposure Controls/Personal Protection

No occupational exposure limits are listed for this material.

OSHA Permissible Exposure Limits  No Data Available
NIOSH Recommended Exposure Limits  No Data Available
ACGIH Threshold Limit Values  No Data Available

Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Use fume hood for routine work.

Personal protective equipment
The employer/end user, prior to use of this product should perform all recommendations below are advisory in nature and a risk assessment. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

[PPE=Personal Protection Equipment]

PPE: Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup 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).

PPE: Hand Protection:
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices, and wash and dry hands

PPE: Eye Protection:
Use a 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).

PPE: Skin and Body Protection:
Handle with gloves. Wear protective clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. When deemed needed according to the concentration and amount of this product, use a complete body suit

9) Physical and chemical properties

Physical / chemical properties

| Physical State at room temperature | Solid / powder |
| Color | Yellow crystals |
| Melting/freezing point | 240-260°C |

No further safety-relevant information is available

10) Stability and reactivity

Reactivity: No information available.
Chemical stability: Stable under normal conditions. Exposure to air may cause deterioration.
Conditions to avoid: Heat, flames and sparks
Incompatible materials: Strong oxidizers.
Possibility of Hazardous Reactions: None under normal processing
Hazardous decomposition products: Carbon monoxide CO, Carbon dioxide (CO2).
11) Toxicological information

Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute Toxicity</th>
<th>LD50 (oral - Mouse) 105 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation:</td>
<td>Moderate irritation.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation:</td>
<td>no data available</td>
</tr>
<tr>
<td>Respiratory or skin sensitization:</td>
<td>no data available</td>
</tr>
<tr>
<td>Germ cell mutagenicity:</td>
<td>no data available</td>
</tr>
<tr>
<td>Carcinogenicity:</td>
<td>Limited evidence of carcinogenicity. This compound has been designated by the IARC as Group 3 - Not classifiable as to its carcinogenicity to humans.</td>
</tr>
<tr>
<td>Reproductive toxicity / Teratogenicity:</td>
<td>no data available</td>
</tr>
</tbody>
</table>

STOT-SE – single exposure (GHS): no data available
STOT-RE – repeated exposure (GHS): no data available
Aspiration hazard: no data available

Potential Health Effects

Inhalation: Toxic if inhaled. May cause respiratory tract irritation.
Skin: Toxic if absorbed through skin. Causes skin irritation.
Eyes: Causes severe eye irritation.
Ingestion: Toxic if swallowed

Signs and Symptoms of Exposure no data available

Additional information: RTECS: DJ2275000

12) Ecological Information

Eco-Toxicity: No further relevant information available
Other adverse effects: No further relevant information available. Disposal Considerations

13) Waste treatment methods

| Waste from residues / unused products | Dispose of in accordance with local regulations |
| Contaminated packaging | Dispose of as unused product |

14) Transport information

UN number, Proper Shipping Name, Transport Hazard Class, packing group

<table>
<thead>
<tr>
<th>UN Number</th>
<th>UN proper shipping name</th>
<th>US DOT</th>
<th>ADR/RID:</th>
<th>IMDG:</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 2811</td>
<td>Toxic solid, organic, n.o.s. (Citrinin)</td>
<td>UN 2811</td>
<td>UN 2811</td>
<td>UN 2811</td>
<td>UN 2811</td>
</tr>
<tr>
<td>Hazard Class &amp; Packing Group</td>
<td>Class 6.1 pg III</td>
<td>Class 6.1 pg III</td>
<td>Class 6.1 pg III</td>
<td>Class 6.1 pg III</td>
<td></td>
</tr>
</tbody>
</table>

15) Regulatory information

Safety, health and environmental regulations/legislation

| USA EPA / TSCA | This product is not listed on the USA EPA TSCA |
| EU ECHA Status | This product is not registered with the EU ECHA |
| CA: DSL/NDSL Status | This product is not listed on the Canadian DSL/NDSL |
16) Other information

Date of revision: 01 dec 2016

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given here is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of SDS