1 Identification

· Product identifier
· Trade name: Maple Furanone synthetic
· Product number: 2093
· CAS Number: 698-10-2
· EC number: 211-811-6
· Application of the substance / the mixture: Food flavorings

· Details of the supplier of the safety data sheet
· Manufacturer/Supplier: Advanced Biotech
  10 Taft Road
  Totowa, NJ 07512 USA
· Information department: Product safety department
  sarfa@adv-bio.com
· Emergency telephone number:
  1(800)535-5053 (Info Trac)
  1(352)323-3500 (International)
  During normal business hours: 1(973)339-6242

2 Hazard(s) identification

· Classification of the substance or mixture

![GHS07]
Acute Tox. 4 H302 Harmful if swallowed.

· Label elements: Harmful in contact with skin or if inhaled.
· GHS label elements
  Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.
  The substance is classified and labeled according to the Globally Harmonized System (GHS).
· Hazard pictograms

![GHS07]

· Signal word: Warning
· Hazard-determining components of labeling:
  5-Ethyl-3-hydroxy-4-methyl-2(5H)-furanone
· Hazard statements
  H302 Harmful if swallowed.
· Precautionary statements
  P264 Wash thoroughly after handling.
  P270 Do not eat, drink or smoke when using this product.
  P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

(Continued on page 2)
Trade name: Maple Furanone synthetic

P330 Rinse mouth.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 1
  - Fire = 1
  - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - HEALTH
    - Fire = 1
    - Reactivity = 0

- Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  - 698-10-2 5-Ethyl-3-hydroxy-4-methyl-2(5H)-furanone
- Identification number(s)
  - EC number: 211-811-6

4 First-aid measures

- Description of first aid measures
  - General information:
    - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: Immediately call a doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed
      - No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed
      - No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  - CO2, powder or alcoholresistant foam.
  - Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture
  - No further relevant information available.
Trade name: Maple Furanone synthetic

- Advice for firefighters
  - Protective equipment: No special measures required.
- Additional information
  - Cool endangered receptacles with water spray.
  - Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- Environmental precautions: No special measures required.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - Precautions for safe handling: No special precautions are necessary if used correctly.
  - Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as a basis.
- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    - Keep away from foodstuffs, beverages and feed.
    - Wash hands before breaks and at the end of work.
- Breathing equipment: Not required.
- Protection of hands:
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  - Selection of the glove material should be based on consideration of the penetration times, rates of diffusion and the degradation
Trade name: Maple Furanone synthetic

- **Material of gloves**
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**
  The exact breakthrough time has to be determined by the manufacturer of the protective gloves and has to be observed.

- **Eye protection**: Goggles recommended during refilling.

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance**:
    - **Form**: Liquid
    - **Color**: Clear yellow to light tan
    - **Odor**: Maple
    - **Odour threshold**: Not determined.
  - **pH-value**: Not determined.

- **Change in condition**
  - **Melting point/Melting range**: Undetermined.
  - **Boiling point/Boiling range**: 83-86 °C (181-187 °F) (at 0.5 mm Hg)

- **Flash point**: > 110 °C (> 230 °F)

- **Flammability (solid, gaseous)**: Not applicable.

- **Ignition temperature**
  - **Decomposition temperature**: Not determined.
  - **Auto igniting**: Not determined.

- **Danger of explosion**: Product does not present an explosion hazard.

- **Explosion limits**
  - **Lower**: Not determined.
  - **Upper**: Not determined.

- **Vapor pressure**: Not determined.

- **Density at 20 °C (68 °F)**: 1.14 g/cm³ (9.513 lbs/gal)
  - **Relative density**: Not determined.
  - **Vapour density**: Not determined.
  - **Evaporation rate**: Not determined.

- **Solubility in / Miscibility with**
  - **Water**: Not miscible or difficult to mix.

- **Partition coefficient (n-octanol/water)**: Not determined.

- **Viscosity**
  - **Dynamic**: Not determined.
  - **Kinematic**: Not determined.
  - **Organic solvents**: 0.0 %

(Continued on page 5)
### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
  No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
  No dangerous reactions known.
- **Conditions to avoid**
  No further relevant information available.
- **Incompatible materials:**
  No further relevant information available.
- **Hazardous decomposition products:**
  No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>100 mg/kg (rat)</td>
</tr>
<tr>
<td>698-10-2 5-Ethyl-3-hydroxy-4-methyl-2(5H)-furanone</td>
<td>1330 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
  - **Carcinogenic categories**
    - **IARC (International Agency for Research on Cancer)**
      Substance is not listed.
    - **NTP (National Toxicology Program)**
      Substance is not listed.
    - **OSHA-Ca (Occupational Safety & Health Administration)**
      Substance is not listed.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability**
  No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential**
  No further relevant information available.
- **Mobility in soil**
  No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
Trade name: Maple Furanone synthetic

- **vPvB**: Not applicable.
- **Other adverse effects**: No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation**: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings**: 
  - **Recommendation**: Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

- **UN proper shipping name**
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

- **Transport hazard class(es)**
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

- **Class**: Not Regulated

- **Packing group**
  - DOT, ADR, IMDG, IATA: Not Regulated

- **Environmental hazards**
  - **Marine pollutant**: No

- **Special precautions for user**: Not applicable.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**: Not applicable.

- **Transport/Additional information**: Not dangerous according to the above specifications.

- **UN "Model Regulation"**: -

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
  - **Section 355 (extremely hazardous substances)**: Substance is not listed.
  - **Section 313 (Specific toxic chemical listings)**: Substance is not listed.
  - **TSCA (Toxic Substances Control Act)**: Substance is listed.

(Continued on page 7)
Proposition 65

· Chemicals known to cause cancer:
  Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:
  Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:
  Substance is not listed.

· Chemicals known to cause developmental toxicity:
  Substance is not listed.

Carcinogenic categories

· EPA (Environmental Protection Agency)
  Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)
  Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)
  Substance is not listed.

GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms
  Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.

GHS07

· Signal word Warning

Hazard-determining components of labeling:

5-Ethyl-3-hydroxy-4-methyl-2(5H)-furanone

· Hazard statements
  H302 Harmful if swallowed.

Precautionary statements

P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing SDS: Product safety department
Trade name: Maple Furanone synthetic

- **Contact:** Sidney Arfa
- **Date of preparation / last revision:** 06/25/2015 / 1
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Acute Tox. 4: Acute toxicity, Hazard Category 4